RESEARCH PAPER

A Simple Linear Bridge Between Brand Equity and Brand Value: Derivation and Limitations

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ABSTRACT

This paper presents a simple arithmetical formulation linking brand equity to brand value. The proposed equation, $V = P_0 \times (1 + kE)$, provides a transparent bridge between perceptual constructs and financial outcomes. While the model offers intuitive appeal and managerial usability, it rests on simplifying assumptions that limit its applicability in complex market conditions. The paper derives the equation from first principles, demonstrates its interpretative value, and critically examines three real-world limitations: non-linear returns to equity, the possibility of negative brand equity, and contextual variability across markets and time. The discussion positions the equation as a conceptual and pedagogical tool rather than a comprehensive valuation framework, aligning with contemporary perspectives in brand valuation literature (Keller, 2013; Interbrand, 2023).

Keywords: Brand value, brand equity, marketing finance, valuation, non-linearity.

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1. Introduction

Brand value remains a central concern for firms operating in increasingly competitive and intangible-driven markets. While financial valuation models are often complex, there is a continuing need for simplified frameworks that can connect marketing constructs with monetary outcomes in an accessible manner. Brand equity, typically defined as a composite of awareness, trust, perceived quality, and loyalty, is inherently perceptual; brand value, by contrast, is expressed in financial terms (Aaker, 1996; Keller, 2013).

The present study proposes a simple arithmetical equation that links these two domains. The objective is not to replace established valuation models such as discounted cash flow (DCF) approaches, but to offer a conceptual bridge that aids understanding, communication, and preliminary decision-making. Similar attempts to simplify brand valuation have been noted in practitioner reports, although these often rely on proprietary methods (Interbrand, 2023; Brand Finance, 2024).

In pharmaceutical markets, where trust, perceived quality, and regulatory credibility strongly influence prescribing and purchase decisions, the relationship between brand equity and financial value becomes particularly critical.

2. Conceptual Foundations

A fundamental challenge in brand research lies in reconciling behavioural and financial metrics. Brand equity operates at the level of consumer perception, whereas brand value reflects expected future earnings attributable to the brand. Previous research has demonstrated that equity influences price premiums, purchase frequency, and customer retention, thereby affecting profitability. (Simon & Sullivan, 1993)

To connect these domains, the model introduces an intermediate variable: baseline profit. This allows the translation of incremental equity into measurable financial outcomes.

3. Derivation of the Equation

The derivation proceeds in three steps.

3.1 Baseline Profit

In the absence of brand equity, a product behaves as a generic commodity, generating baseline profit:

$$\mathbf{P_0 = (Price - Cost) \times Quantity}$$

This represents earnings without brand-driven advantages.

3.2 Equity-Induced Profit Enhancement

Brand equity enables firms to realise:

- Price premiums
- Increased sales volume
- Reduced acquisition and retention costs

These effects can be aggregated into a proportional uplift:

$$\mathbf{P = P_0 (1 + \alpha E)}$$

where E denotes brand equity (scaled between 0 and 1), and α captures sensitivity.

3.3 Conversion to Brand Value

Using a simplified financial perspective, brand value corresponds to the present value of expected earnings. Under stable growth assumptions:

$$\mathbf{V = P / (r - g)}$$

Substituting and simplifying yields the final expression:
If we define:

- V = brand value (monetary)
- E = brand equity index (0 to 1)
- P_0 = base profit without equity (monetary)
- k = combined sensitivity & growth factor (capturing α, r, g)

$V = P_0 (1 + kE)$, where $k = \alpha / (r - g)$
where *k* absorbs growth and discount parameters.
The formulation establishes a direct analytical linkage between brand equity and financial value.
Where k is a constant that depends on industry, growth expectations, and discount rate. For everyday use, one can estimate:

- k ≈ 4–6 for fast-moving consumer goods (FMCG)
- k ≈ 8–12 for luxury or tech brands

Appendix A: Derivation Details
The derivation proceeds from the relationship between brand equity and profit, and the standard financial valuation framework.
Starting with:
$P = P_0 (1 + \alpha E)$
And
$V = P / (r – g)$
Substituting:
Substituting the expression for P into the valuation equation:
$V = [P_0 (1 + \alpha E)] / (r – g)$
Rearranging:
Rewriting the expression:
$V = P_0 [1 + (\alpha / (r – g)) E]$
Let:
Let the combined sensitivity parameter be defined as:
$k = \alpha / (r – g)$
Thus:
The final expression becomes:
$V = P_0 (1 + kE)$

Example
A generic cola earns ₹83 crore in base profit. The brand equity index is 0.7 (indicating strong equity), and k = 5.
The brand value is calculated as:
V = ₹83 crore × (1 + 5 × 0.7)
= ₹83 crore × 4.5
= ₹373.5 crore
A similar logic may be extended to global brands such as Nike or Apple, where strong equity sustains price premiums and long-term profitability. A similar mechanism also operates in pharmaceutical brands, where strong equity influences prescription preference, patient trust, and long-term therapeutic adherence.
Why this works as a "simple arithmetic" bridge
It isolates equity as a linear multiplier on baseline profits – transparent, easy to calibrate, and grounded in both consumer psychology (E) and finance (V). In reality, the relationship is slightly non-linear (diminishing returns at very high equity), but for most practical ranges, the equation holds well.

3.4 Estimating Baseline Profit (P_0) and k
Baseline profit (P_0) represents the earnings attributable to a product in the absence of brand equity. In practice, it may be approximated using one of the following approaches:
Observed margins for generic or unbranded equivalents within the same category
Historical firm-level data prior to brand-building investments
Industry benchmarks for low-equity or private-label products
The parameter k captures the sensitivity of financial value to changes in brand equity and incorporates the combined effects of price premium, volume effects, growth expectations, and discount rates. In applied settings, k may be estimated through:

- Observed price premiums relative to generic substitutes
- Consumer willingness-to-pay studies
- Regression-based estimation linking brand equity metrics to financial outcomes
- Industry heuristics (e.g., higher values in luxury or technology categories)

Given these variations, both P_0 and k should be treated as context-dependent parameters rather than fixed constants.

Component	Interpretation
Price premium	Willingness to pay
Volume effect	Demand increase
Retention effect	Loyalty / repeat purchase
Growth (g)	Future expansion
Discount rate (r)	Risk / capital cost

4. Theoretical Propositions
Building upon the derived relationship between brand equity and brand value, a set of theoretical propositions can be formulated to clarify the expected behaviour of the model under varying conditions. These propositions provide a structured basis for future empirical validation.

Proposition 1: Positive Relationship Between Brand Equity and Brand Value
P1:
Brand equity is positively associated with brand value, ceteris paribus.
This follows directly from the multiplicative structure of the equation, where brand equity functions as a value-enhancing factor on baseline profitability. This proposition is consistent with established literature linking consumer-based brand

equity to financial performance (Keller, 2013; Simon & Sullivan, 1993)

Proposition 2: Conditional Linearity Within Moderate Equity Ranges

P2:

The relationship between brand equity and brand value is approximately linear within moderate ranges of equity but deviates at extreme levels.

While the equation assumes linearity, prior research and market observations suggest that this approximation holds primarily within mid-range equity levels. At very low or very high levels, the marginal impact of equity changes is reduced, reflecting threshold and saturation effects (Aaker, 1991).

Proposition 3: Diminishing Marginal Impact at High Equity Levels

P3:

At high levels of brand equity, incremental increases produce diminishing marginal gains in brand value.

This proposition reflects the increasing cost and decreasing effectiveness of further equity enhancement in already strong brands. It aligns with the notion of concavity in brand performance functions and supports the need for non-linear modelling in advanced valuation approaches.

Proposition 4: Asymmetry Under Negative Brand Equity

P4:

Negative brand equity reduces brand value disproportionately, exhibiting an asymmetric relationship compared to positive equity gains.

The linear equation does not adequately capture situations where brand perceptions turn adverse. In such cases, the brand may transition from an asset to a liability, requiring corrective investment rather than generating returns. This asymmetry has been noted in crisis and reputation management literature (Aaker, 1996).

Proposition 5: Contextual Moderation of the Equity–Value Relationship

P5:

The strength of the relationship between brand equity and brand value is moderated by contextual factors, including industry characteristics, geographic markets, and temporal dynamics.

The parameters embedded in the model are not constant. Variations in competitive intensity, consumer behaviour, and macroeconomic conditions influence the translation of equity into value. This proposition supports the argument for segmented and dynamic valuation models (Interbrand, 2023; Brand Finance, 2024).

5. Interpretation of the Model

The equation implies that brand equity functions as a linear multiplier of baseline profitability. Within moderate ranges of equity, this approximation is operationally useful and aligns with empirical observations in marketing-finance literature (Keller, 2013).

For example, a firm with a baseline profit of ₹80 crore and an equity score of 0.6, with $k = 5$, would estimate brand value as:

$V = 80 \times (1 + 5 \times 0.6) = 80 \times 4 =$ ₹ 320 crore

Such simplicity enables communication between marketing and finance functions, which often rely on different conceptual frameworks.

6. Managerial Implications

Although simplified, the equation offers several practical insights.

6.1 Marketing Investment Decisions

The model allows managers to relate incremental improvements in brand equity to expected financial gains. This provides a rational basis for evaluating marketing expenditure, particularly in advertising and customer experience initiatives.

6.2 Pricing Strategy

Higher brand equity enhances perceived value, enabling firms to sustain price premiums. Changes in E may therefore serve as an early indicator of pricing power, supporting gradual rather than abrupt adjustments.

6.3 Brand Portfolio Assessment

Firms managing multiple brands may use the equation to compare relative performance. Brands with low baseline profitability but high equity may represent growth opportunities, while declining equity in established brands may signal erosion of long-term value.

7. Limitations of the Equation

Despite its usefulness, the model is subject to several important limitations.

7.1 Non-linear Returns to Brand Equity

The equation assumes that each incremental point of equity E adds the same absolute lift to brand value (dV/dE = constant). At low levels, increases in equity may have minimal impact; at high levels, diminishing returns are observed (Keller, 2013).

- Low equity (E < 0.2): Small improvements may have little financial impact because the brand is not yet "considered" by enough consumers. The relationship is flat or even negative if investment is wasted.
- Medium equity (0.3–0.7): The linear approximation works reasonably well – this is the sweet spot.
- High equity (E > 0.8): Further gains become very hard and expensive. Raising E from 0.85 to 0.90 might cost 10× more

than from 0.50 to 0.55, but the value increase ΔV is smaller or even zero because the market is already saturated.

Example

Coca-Cola's global brand equity is already extremely high. A 5% increase in its equity score would not translate into a 5% increase in brand value – consumers can't become "much more loyal" than they already are. The equation would grossly overestimate the potential.

Consequence for practitioners

Using the linear equation for very strong or very weak brands will mislead resource allocation. You need a concave function, e.g., $V = P_0 \times (1 + k \cdot \ln(1+E))$ or empirical S-curves

7.2 Negative Brand Equity

The equation as written ($V = P_0 \times (1 + k \cdot E)$) assumes $E \geq 0$ and produces $V \geq P_0$. But brands can have negative equity – consumers actively avoid them due to scandals, poor quality, or bad reputation. In such cases, the brand may act as a liability rather than an asset, a phenomenon not adequately captured by the linear structure (Aaker, 1991).

- With negative equity, E would be negative (e.g., -0.3 on a scale where zero is neutral). Then $1 + k \cdot E$ could become less than 1, or even negative if $k \cdot E < -1$. Financially, brand value may be zero or the brand may need to be "killed" or rebranded (which incurs costs, not an asset).

Example

After the Volkswagen "Dieselgate" scandal, its brand equity turned sharply negative for a period. The same equation calibrated on positive equity would fail because:

- P_0 itself is no longer defined cleanly – the company's base profit collapses due to fines and lost sales.
- Even if you force a negative E, the linear multiplier might produce a negative brand value, which is theoretically possible (a liability), but the real relationship is non-linear and involves legal, regulatory, and trust-recovery dynamics.

Consequence

The equation cannot handle the asymmetry: rebuilding from negative equity is not the mirror image of building from zero. You would need separate models for turnarounds and crisis management.

To address this limitation, a bounded formulation may be considered in practical applications. For instance, imposing a lower bound such that:

$V \geq 0$ or $V = \max \{0, P_0 (1 + kE)\}$

Ensures that brand value does not take implausible negative values within the simplified model. Alternatively, a piecewise specification may be adopted, where the linear relationship applies only within a defined range of equity, and separate formulations are used for negative equity scenarios. Such modifications reinforce the interpretation of the brand as a potential liability under adverse conditions, rather than forcing linear symmetry.

7.3 Contextual Variability

The parameters P_0 and k are treated as constants, but in reality they shift dramatically with market context. A brand's equity may be high in one category or country and low in another; the same E score yields wildly different V. Moreover, the impact of equity on financial performance often involves time lags, which the model ignores (Simon & Sullivan, 1993).

- Category effects: Equity in a commodity category (e.g., salt) has low k (~0.5). Equity in a luxury or tech category has high k (~10). But a single brand like Virgin operates across airlines, finance, telecom – the equation cannot aggregate its portfolio without recalculating separately.
- Geographic effects: A brand may have E=0.9 in Germany but E=0.2 in Brazil. The total brand value must sum over markets, but P_0 and k differ by market due to income levels, competition, and culture.
- Time effects: Brand equity takes time to translate into value. A campaign that raises E today may only increase P_brand (profit) in year 2 or 3. The simple equation assumes instantaneous conversion, ignoring lags and hysteresis.

Example

Apple's brand equity in China is strong, but sudden geopolitical tension or local competition (Huawei) changes k overnight without any change in E. The equation would miss that the same E now yields lower V due to external headwinds.

Consequence

The equation fails when you need to value a multi-category, multi-country brand, or when forecasting under changing market conditions. You would need a system of equations with segmented P_0, k, and dynamic adjustments for time delays.

In addition, the translation of brand equity into financial outcomes is subject to temporal delays. Investments in brand-building activities may influence consumer perception immediately, but their impact on profitability often materialises over subsequent periods. This lagged effect implies that the contemporaneous application of the equation may overstate short-term value changes, further reinforcing the need for dynamic and time-adjusted modelling approaches.

8. Discussion

The analysis suggests that the equation is best understood as a heuristic device. It provides clarity and accessibility but should not be interpreted as a comprehensive valuation model. Contemporary

valuation approaches employ segmented cash flow models, incorporating non-linear effects and market-specific adjustments (Interbrand, 2023; Brand Finance, 2024).

From a theoretical perspective, the equation contributes by formalising an intuitive relationship in a mathematically explicit manner. From a managerial standpoint, it facilitates communication and preliminary analysis, particularly in contexts where data availability is limited.

Future Research

The present study adopts a conceptual approach. Empirical validation of the proposed relationship remains an important avenue for future research.

Future research may extend the model in several directions, including non-linear formulations (e.g., $V = P_0 (1 + kE^{\beta})$, $\beta < 1$), multi-market aggregation across geographies, and dynamic specifications incorporating time lags.

9. Conclusion

The equation $V = P_0 \times (1 + k \cdot E)$ offers a simple yet meaningful connection between brand equity and brand value. It highlights the central role of consumer perception in driving financial outcomes. However, its assumptions—linearity, non-negativity, and parameter stability—limit its applicability in real-world settings. The model is best interpreted as a parsimonious heuristic framework, analogous to widely used strategic tools such as Porter's Five Forces, rather than a full valuation model.

This is particularly relevant in pharmaceutical markets, where brand equity plays a central role in shaping physician behaviour, patient trust, and long-term treatment outcomes.

Accordingly, the model should be used as a conceptual starting point rather than a definitive tool. For rigorous valuation, more sophisticated methods incorporating non-linear dynamics, segmentation, and temporal adjustments are required. The equation remains valuable as a pedagogical and strategic aid, reinforcing the fundamental insight that stronger brands generate greater economic value.

References

Aaker, D. A. (1991). Managing Brand Equity. Free Press.

Aaker, D. A. (1996). Building Strong Brands. Free Press.

Brand Finance. (2024). *Global 500 Report: Methodology*. Brand Finance Institute.

Interbrand. (2023). *Best Global Brands Report 2023*. Interbrand.

Keller, K. L. (2013). Strategic Brand Management (4th ed.). Pearson.

Simon, C. J., & Sullivan, M. W. (1993). The Measurement and Determinants of Brand Equity: A Financial Approach. Marketing Science, 12(1), 28–52.