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Diminishing Marginal Utility of Motivation (DMUM) Model (Application of the Law of Diminishing Marginal Utility to Employee Retention: An Economic Perspective on Organizational Attrition)

Chiranjeevi Pavan Kiran
Independent Researcher

Abstract
The Law of Diminishing Marginal Utility (DMU), a foundational concept in microeconomics, explains how satisfaction derived from consecutive consumption of a good declines with each additional unit. This research applies the DMU principle to organizational behaviour, particularly employee motivation and attrition. The study introduces the ***Diminishing Marginal Utility of Motivation (DMUM) Model,*** *a new conceptual framework linking employee satisfaction, compensation equity, and retention. Across industries, organizations often pay higher salaries to new hires while stagnating the pay of existing employees. This gap leads to declining motivation, discouragement, and eventually attrition. The paper integrates economic utility theory with motivation and equity theories from HR literature to explain this phenomenon.*
The DMUM model suggests that employee motivation follows an economic utility curve rising initially with reward increments but flattening when compensation or recognition stops growing. Findings from simulated data illustrate that as marginal satisfaction declines, attrition probability increases, leading to reduced organizational profitability. The study concludes with strategic recommendations for utility-balanced compensation policies to sustain motivation and minimize attrition.
Keywords: *Employee Motivation, Marginal Utility, Attrition, Compensation Strategy, HR Economics, DMUM Model*

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I. Introduction

Employee retention remains one of the most persistent challenges in modern organizations. Despite competitive recruitment efforts, firms continue to experience increasing attrition rates, especially among mid-tenure employees. This paradox raises a key question: why do employees who were once motivated and satisfied eventually lose enthusiasm and exit their organizations?

The Law of Diminishing Marginal Utility (DMU) provides an economic explanation. Just as consumers derive decreasing satisfaction from each additional unit of consumption, employees experience decreasing motivation when their compensation and recognition fail to grow proportionally with their tenure and contribution. This paper explores how the economic law of utility can be extended to organizational behaviour and proposes the *Diminishing Marginal Utility of Motivation (DMUM) Model* as a new theoretical framework explaining employee satisfaction and attrition cycles.

II. Problem Statement

Many organizations offer well-paid packages to attract new employees but provide minimal salary increments to existing ones. This creates an internal inequity, where loyal employees feel undervalued compared to new hires performing similar tasks for higher pay. Over time, this imbalance diminishes motivation and drives attrition. Meanwhile, continuous hiring of new employees at premium pay increases organizational cost and reduces profit margins.

The research seeks to answer:

- How does diminishing marginal utility apply to employee motivation and retention?
- How can organizations design compensation systems that maintain consistent motivational utility over time?
- The cost of upgrading skills is increasing, but the job market’s willingness to pay for those upgraded skills is decreasing or inconsistent.

III. Literature Review

3.1. Law of Diminishing Marginal Utility

The DMU law, proposed by Alfred Marshall, states that as a consumer consumes more units of a good, the additional satisfaction (marginal utility) from each unit decreases. In HR context, the "good" can be seen as rewards or compensation, and "utility" as employee satisfaction.

3.2. Herzberg's Two-Factor Theory

Frederick Herzberg's theory differentiates between motivators (recognition, growth, achievement) and hygiene factors (salary, work conditions). While pay is a hygiene factor, its stagnation over time contributes to demotivation and attrition.

3.3. Equity Theory (Adams, 1965)

Equity theory asserts that employees compare their input–output ratios with peers. When they perceive inequity (e.g., new hires earning more), their motivation declines—aligning with the concept of diminishing marginal utility.

3.4. Human Capital Theory

Human Capital Theory emphasizes that employees are investments contributing to productivity. Ignoring their economic value through stagnant compensation reduces returns on this investment, manifesting as higher turnover.

3.5. Research Gap

Existing literature examines motivation and compensation independently but rarely integrates economic principles like DMU to explain long-term employee satisfaction decline. The proposed DMUM Model addresses this gap.
In this interpretation:

- Equity theory → explains **why dissatisfaction begins** (perceived unfairness).
- Diminishing marginal utility → explains **how satisfaction decreases over time** (declining incremental motivation).

Although the two theories are distinct, this does not suggest they are identical; rather, one framework is employed to reinforce and extend the explanatory dynamics of the other.

IV. Theoretical Framework: Diminishing Marginal Utility of Motivation (DMUM) Model

The DMUM Model adapts the DMU principle to human motivation. It postulates that:
Employee motivation derived from compensation and recognition increases initially but decreases after a threshold point when incremental rewards stagnate or become unequal.
Mathematically:

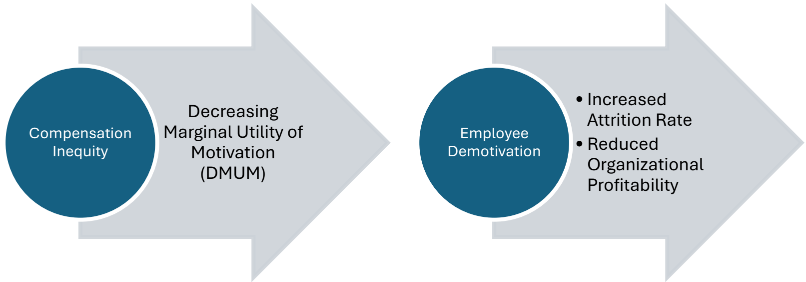
$$MU = \frac{\Delta S}{\Delta t}$$

Where:

- **MU** = Marginal Utility of Motivation
- **S** = Employee satisfaction or motivation score
- **t** = Time (tenure or service period)

As time increases without proportional increase in rewards or recognition,
ΔS(change in satisfaction) approaches zero, meaning motivation flattens or declines.

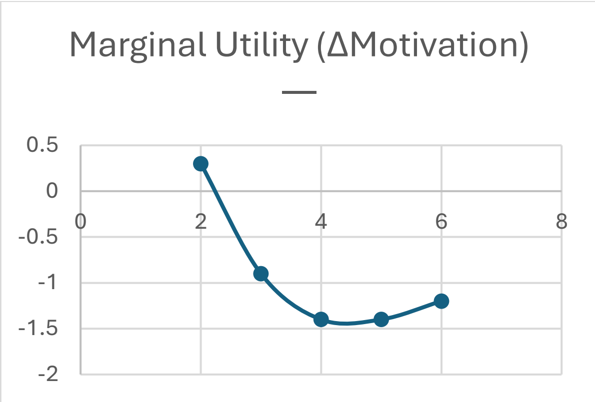
V. Conceptual Model Diagram



This model shows a sequential link where inequitable compensation triggers diminishing motivational utility, leading to attrition and ultimately impacting profit.

VI. Data Illustration

Tenure (Years)	Avg. Salary Growth (%)	Motivation Score (1–10)	Marginal Utility (Δ Motivation)
1	20%	9.2	—
2	10%	9.5	0.3
3	7%	8.6	-0.9
4	4%	7.2	-1.4
5	3%	5.8	-1.4
6	2%	4.6	-1.2



Note:
Negative Δ Motivation = Decline in utility
Positive Δ Motivation = Increase in utility
The table demonstrates that as salary growth decreases, the marginal utility of motivation declines at an accelerating rate, indicating demotivation and potential attrition triggers.

VII. Discussion and Managerial Implications

The DMUM model highlights that retaining employees requires maintaining a positive marginal utility of motivation. Pay stagnation, even if salaries remain competitive, diminishes perceived fairness and satisfaction.

Implications for HR Managers:

- Design *Utility-Balanced Compensation Plans* where reward increments are proportional to contribution and tenure.
- Conduct *motivation audits* annually to identify declining satisfaction trends.
- Introduce *non-monetary utilities* (learning, recognition, leadership opportunities) to restore marginal utility without excessive pay escalation.
- Maintain internal pay equity between tenured and newly hired employees.

By treating motivation as a measurable economic utility, organizations can forecast attrition risks and prevent productivity loss.

VIII. Conclusion and Future Scope

This paper introduces the *Diminishing Marginal Utility of Motivation (DMUM) Model* as an interdisciplinary framework connecting economics and HR management. It establishes that employee motivation behaves in a similar way to economic utility rising initially with rewards but eventually levels off or declining when compensation growth stagnates.

Future studies may empirically validate this model across sectors using real organizational data, psychological surveys, and regression analysis. Expanding the model to incorporate emotional and cultural factors could further refine understanding of motivation economics.

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Author's Note

The author, **Chiranjeevi Pavan Kiran**, is an independent researcher exploring interdisciplinary applications of economic theory in human resource management.

This frame work of theory was initially developed on my own during my post-graduation in Masters in Business Management and eventually working in industry. Later understanding the dynamics of job market and attrition felt this theory will mark revolutionary change in perspective.

It's new theoretical bridge between economics and HR. The reason for developing interdisciplinary theory with the question of **"Why can't Equity Theory and DMU match?"**

Another way of questioning in my thought process is why the cost of upgrading skills is increasing, but the job market's willingness to pay for those upgraded skills is decreasing or inconsistent.

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