A Mathematical Analysis of HR Policies for An Education Organization Culture by Laplace Transform.

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Abstract:
There is major accomplishment over the research all past years. In this paper we analysis how educational organization culture effects by HR policies and get a mathematical relation by Laplace transform which described these policies.

Keywords: HR Policies, Organization Culture, Interpolation, Mathematical Models, Laplace Transform etc.

Introduction:
The higher learning educational Institute that offer technical and management courses are crucial in determining how people's lives and the industries they support will develop in the future. Students who attend these schools receive cutting-edge academic and professional training, giving them the particular knowledge and abilities needed to succeed in their chosen industries. Such institutions' success is based on both the caliber of education they provide and the organizational culture that penetrates every corner of their campuses. Research on quantitative human resource planning has received increased attention recently and has established itself as a hotbed [1]. The distribution of human resources is crucial in state-owned businesses. State-owned enterprises include fully owned businesses, fully owned corporations, and state-owned capital holding firms that act as investors on behalf of the federal, state, and local governments. Its resources, including its employees and capital, are under governmental control. A state-owned company's desire to grow is intimately tied to its technology as well as to how it distributes its workforce and how it controls costs. Saving money is an essential component of business' continuous growth. As a result, we should cut back on spending and carefully regulate both production and distribution. The removal of restrictions on entrepreneurship and economic expansion is the primary characteristic of the new economic environment.
A "market system" has largely taken the place of the "license system."
Developing a resilient workplace that can successfully accommodate and assimilate changes in systems, structures, technologies, methodologies, etc. is a challenge for human resource management (HRM) prac tices.
The highly educated people, a well-developed education system, judicature, democratic governance, an established an education institute, and fairly sophisticated and inter-linked financial markets. Knowledge industries will be at the vanguard of economic opportunity, and India will be poised to take advantage of

this trend with its corpus of highly skilled people. The changes on the market scene have necessitated the Indian industry to look inward for the development of human resources (HR). People change and grow in a globalized environment where there are new challenges and issues that must be addressed in order to satisfy the shifting needs, goals, and issues. However, there are some universal goals that should guide all human resource management initiatives. The concept of culture has been greatly influenced by the development of Japanese human resource management.

The effectiveness growth of the educational institute at the organizational level, the goal of HRM is normally motivated employees to ensure administrator. Where we can say organizations normally direct their HRM efforts towards the development of competencies and organizational culture. Organizations use mechanisms to achieve HRM goals with competent and committed employees. Organizations can achieve very little even if they have excellent technological and other resources at their command. Such an assertion gains better credibility in the context of developing countries like India, that is, typically in early growth stages in terms of economic and education development, and growing more rapidly than the ‚traditional‘ developed economies of India. Organizational culture in higher education refers to the shared values, beliefs, norms, and practices that shape the environment within these institutions. It influences how students, faculty, staff, and administrators interact with each other and their overall experience within the academic community. A positive and supportive organizational culture will be impact the success, satisfaction, and well-being of all stakeholders involved. The organizational culture of an education institute can be influenced by various factors, including its history, leadership style, vision and mission, geographical location, student body, faculty composition, and external influences such as societal norms and government policies. Each institute's culture is unique and shapes its identity and reputation.

In this exploration of education institute organizational culture, we will delve into the key components that define a culture, such as leadership practices, communication patterns, decision-making processes, and the emphasis on student-centric approaches. Additionally, we will discuss the significance of inclusivity, diversity, and the promotion of ethical values in fostering a healthy and enriching academic environment. Understanding an education institute's organizational culture is essential for administrators, educators, and students alike. It helps create a harmonious and supportive ecosystem that nurtures intellectual growth, enhances the learning experience, and empowers students to become responsible and engaged citizens. We will acquire insights into the tactics for creating a positive culture, adapting to changing dynamics, and leveraging the culture to achieve educational excellence as we delve into the complex web of organizational cultures within education institutes. Understanding organizational culture in the context of education can enlighten the key pillars that build the foundation for a healthy academic community, regardless of whether you are a teacher, student, parent, or a curious observer.

3.1 Modeling and Policies for Human Resource and Organization Culture of a Higher Educational Institute: Developing effective modeling and policies for human resources and organizational culture is crucial for the success and growth of a higher educational institute. These elements play a significant role in attracting and retaining talented faculty and staff, fostering a positive work environment, and enhancing the overall educational experience for students. Here are some key steps to consider:

3.2 Assess the Current State: Before implementing any changes, conduct a comprehensive assessment of the current human resource practices and organizational culture. This assessment should include analyzing the existing policies, employee feedback, turnover rates, faculty and staff satisfaction surveys, and objects.

3.3 Define the Vision and Mission: Clearly define the institute's vision and mission and align the HR policies and culture with these overarching goals. The HR policies and culture should reflect the values and principles that the institute aims to promote among its faculty, staff, and students.

3.4 Develop a Strategic Plan: Create a strategic plan that outlines the specific goals and objectives for HR and organizational culture development. This plan should include actionable steps, timelines, and performance indicators to track progress.

3.5 Recruitment and Selection Policies: Establish comprehensive recruitment and selection policies to attract and hire the best talent. Ensure that the policies prioritize diversity and inclusion and focus on hiring individuals who align with the institute's values and educational mission.

3.6 Training and Development: Implement a robust training and development program to enhance the skills and capabilities of faculty and staff. Provide opportunities for professional growth, continuous learning, and leadership development.

3.7 Performance Management and Evaluation: Design an effective performance management system that includes regular evaluations, feedback mechanisms, and recognition for exceptional performance. Address performance issues constructively to foster a culture of continuous improvement.

3.8 Compensation and Benefits: Develop competitive and rewards and benefits packages to attract and retain top talent. Consider benchmarking against other educational institutions and relevant industries.

4. Mathematical Model: It is well known that the culture is very important part of life which is also a need of any organization, Organization culture always effective by HR policies especially in education institute.

In mathematics a dependent variable say "y" is always function of Independent variable " x ".
That is $f: HR\ policies(X) \rightarrow Organization\ culture(Y)$, here we can say Organization culture always effective by HR Policies so Organization culture (y) is the function of HR Policies(x)
Therefore $y = f(x)$
We have some manual data from survey on distinct education institute HR policy defined by grads and for Organization culture use numerical data in percentage.
Grade parameters: D-Below 30 %, C-30-39 %, B-40-49 %, A-above 50%

The below table is based on some numerical data regarding HR policies and Organization Culture.

Institute Name	Salary	Behavior	Benefits	Growth	Total
KCMT	B	A	A	B	
KCMT CAMPUS 2	B	B	C	C	
FUTURE INSTITUTE	B	C	B	A	
LOTUS INSTITITUTE OF MANAGEMENT	C	B	B	B	
SHRI RAM MURTI SMARAK	A	C	B	A	
SHRI SIDDHIi VINAYAK GROUP OF INSTITUTIONS	A	B	B	A	
LAL BAHADUR SHASTRI NARAYAN COLLEGE	B	C	B	B	
MASCOT GROUP OF INSTITUTIONS	C	B	C	C	
JYOTI COLLEGE	C	B	C	B	
RBMI	A	C	B	B	

Grade parameters are above for salary. Behavior in percentage by grade.

	Salary(i)	Behavior(ii)	Benefits(iii)	Growth(iv)	Total
Average .X (HR Policies)	B	C	C	B	
Y(Organization culture)100%	40	30	10	20	100

All data is based on some questionnaire about some education institute of Bareilly-243001, Uttar Pradesh in India. During this research some college's growths are exemplary and some colleges are in very poor conditions regarding students and their education.

From above table:
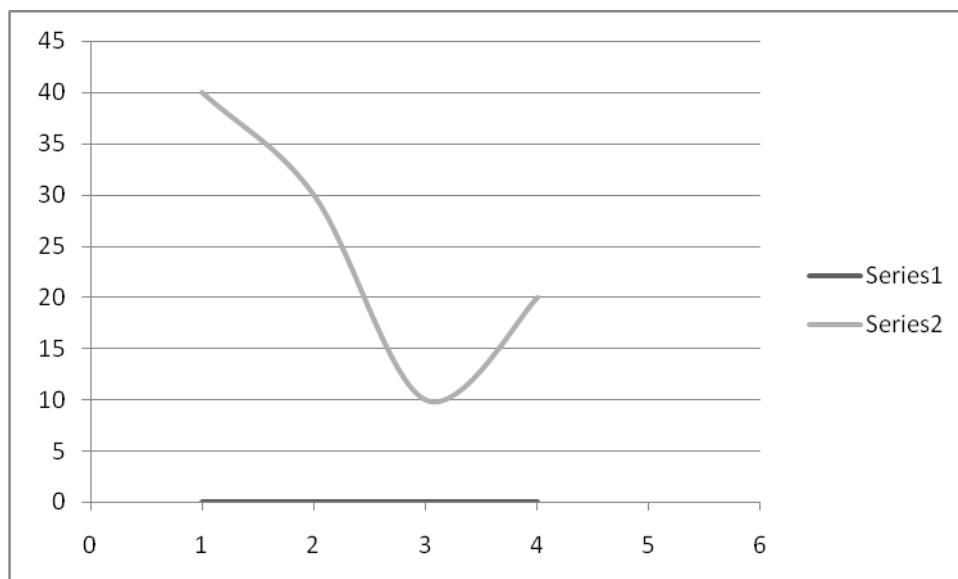
Now we generate a mathematical function

$$f(x) = \begin{cases} e^{-ax} \ for \ 0 \le x < 2 \\ 10 + A(x-3)^2 \quad for \ 2 \le x < 4 \\ 0 \ for \ x > 4 \end{cases}$$

Now we have Laplace

$$L\{f(x)\} = \int_0^\infty e^{-px} . f(x) dx$$

Taking Laplace both side of above function

$$L\{f(x)\} = \int_0^2 e^{-px} e^{-ax} dx + \int_2^4 e^{-px}\{10 + A(x-3)^2\}dx + \int_4^\infty 0.e^{-px} dx$$

$$L\{f(x)\} = \int_0^2 e^{-(p+a)x} dx + 10\int_2^4 e^{-px} dx + A\int_2^4 e^{-px}(x-3)^2 dx + 0$$

$$= -\left\{\frac{1}{P+a} e^{-(P+a)x}\right\}_{x=0}^{x=2} + 10\{\frac{e^{-px}}{-p}\}_{x=2}^{x=4}$$

$$+ A\left[(x-3)^2\left(\frac{e^{-px}}{-p}\right) - \left\{2(x-3)\frac{e^{-px}}{p^2}\right\} + \{2.\frac{e^{-px}}{-p^3}\}\right]_{x=2}^{x=4}$$

$$= -\frac{1}{P+a}\{e^{-2((P+a)} - 1\} - \frac{10}{p}\{e^{-4p} - e^{-2p}\}$$

$$+ A\left[-\frac{1}{p}\{e^{-4p} - e^{-2p}\} - \frac{2}{p^2}\{e^{-4p} + e^{-2p}\} - \frac{2}{p^3}\{e^{-4p} + e^{-2p}\}\right]$$

$$L\{f(x)\} = \frac{1}{P+a} - \frac{e^{-2p}}{p+a} - \frac{e^{-2a}}{p+a} - \frac{10 \, e^{-4p}}{p} + \frac{10 \, e^{-2p}}{p} - \frac{A \, e^{-4p}}{p} + \frac{A \, e^{-2p}}{p} - \frac{2Ae^{-2p}}{p^2}$$

$$- \frac{2Ae^{-2p}}{p^2} - \frac{2Ae^{-4p}}{p^2} - \frac{2Ae^{-4p}}{p^3} + \frac{2Ae^{-2p}}{p^3}$$

$$L\{f(x)\} = \frac{1}{P+a} + \left\{-\frac{1}{P+a} + \frac{10}{p} + \frac{A}{p} - \frac{2A}{p^2} + \frac{2A}{p^3}\right\}e^{-2p} + \left\{-\frac{10}{p} - \frac{A}{p} - \frac{2A}{p^2} - \frac{2A}{p^3}\right\}e^{-4p} - \frac{e^{-2a}}{p+a} \ \dots (1)$$

$$as \ p \to \infty, L\{f(x)\} \to 0$$

This expression also supports the final value theorem of Laplace transform. Hence the above function supports HR policies & Organization culture.

5. Result and Discussion: The above expression given in equation (1) represents that if parameter p tends to infinity then Laplace of Organization culture is zero that is we can say Organization culture is depend on HR Policies because if salary, benefits, retain, compensation of employees in organization are good then Organization culture must be favorable environment to run the institute we see it in our questionnaire data the education institute doing well there's faculty and other employee are self satisfied with the HR policies and governing bodies.

6. Conclusion: In conclusion, the impact of well-structured HR policies, particularly those relating to salary, compensation, and benefits, on the overall organizational culture of an educational institution cannot be understated. When these policies are thoughtfully designed, consistently implemented, and

aligned with the institution's values and objectives, they have the potential to significantly contribute to a thriving and positive organizational culture. Effective salary and compensation structures ensure that employees are fairly rewarded for their contributions and feel valued for their efforts. This, in turn, enhances their job satisfaction, motivation, and commitment to the organization. When employees believe that their hard work is recognized and appropriately compensated, they are more likely to be engaged and dedicated to their roles, resulting in increased productivity and improved student outcomes. Comprehensive benefits packages, including healthcare, professional development opportunities, and work-life balance initiatives, can further demonstrate an institution's commitment to the well-being of its employees. Such benefits not only attract top talent to the organization but also promote a sense of loyalty and a long-term perspective among staff members. As employees experience a higher quality of life and feel supported in both their personal and professional pursuits, they are more likely to contribute positively to the educational institution's culture.

In this symbiotic relationship, a positive organizational culture also contributes to the success of HR policies. When an educational institution fosters an environment of open communication, collaboration, and continuous learning, it reinforces the effectiveness of HR policies by creating a receptive and adaptable workforce. Employees are more likely to embrace changes, provide constructive feedback, and work together towards common goals, ultimately driving the institution's growth and success. In essence, a harmonious interplay between well-structured HR policies and a thriving organizational culture is a key driver of success for educational institutions. As these policies address employees' fundamental needs, motivations, and aspirations, they pave the way for a positive and productive work environment. When combined with a culture that nurtures innovation, inclusivity, and shared values, the educational institution can reach new heights of excellence, benefitting its employees, students, and stakeholders alike.

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