

APPLICATION OF THEORY A ON ABC MODEL TO ENHANCE ORGANIZATIONAL RESEARCH PRODUCTIVITY IN HIGHER EDUCATION

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Abstract:

The objective of higher education and research institutions is the creation of new knowledge and success depends on how much new knowledge have been created during a given period of time generally calculated and measured annually. A simple measurement index for this namely ABC model has been developed by Aithal P.S. and Suresh Kumar. As per the model, the annual research performance can be determined by knowing the research index of the institution/ individuals and is calculated by considering the total number of research publications during that period. Application of theory of organizational performance namely 'Theory A' can improve research productivity of educational institutions. This is a management strategy which believes in delivering target as responsibility, feeling of creativity and contribution for motivation, identifying with the organization as commitment and accountability as a hallmark of efficiency. In this paper, we have discussed how Theory A on organization performance can be used for enhancing institutional research productivity.

Index Terms: Enhancement of Research Productivity, Theory A & ABC Model of Research Productivity **1. Introduction:**

Research is a continuous process in higher educational institutions due to many reasons which include, identification of new problems to be solved in a given area, creationof new knowledge in a given subject, interconnecting and interrelating different subjects, identifying new skills, ideas, concepts, theories, developing new technologies and systems which makes life more comfortable, finding the relationship between various variables of a system in an effort to simplify it, deepening insight into a system or method with an intention of discovering new things, etc. Being important as an organization in the society, higher educational institutions have two major objects which include enhancing the knowledge, skills, and experience of the aspiring students, and creation of new knowledge in identified/related areas of study. In this regard, the higher education institutions can do innovations in the process of providing quality education to its students by means of setting its objects implementing them effectively by means of various best practices [1-24].Like other organizations which have objective of enhancing their productivity or quality of service for long term benefits, higher education institutions also have to struggle to enhance their output or performance which is mainly creating and disseminating new knowledge through research and publications. This can be achieved by including both faculty members and students actively in research. ABC model of research productivity index takes into account the quantum of research publications during a period of time.

2. Theory A and Organizational Performance:

Many theories were developed during last 50 years which accounts the performance of organizations based on human productivity. This includes, Theory X, Theory Y [25], and Theory Z [26]. As time progress, due to changes in technology, human aspirations, economical & social conditions, and environmental knowledge, these theories became obsolete and irrelevant. Recently developed and published organizational performance theory for 21st century called Theory A(Theory of Accountability) by Aithal P. S. and Suresh Kumar [27] challenges the existing propositions on human behaviour and motivation in organizations by presenting new propositions to enhance organizational productivity. It provides better insights on current organizational perspective during 21st century in competitive environment and changed employee mindset of the modern society which has undergone enormous change due to changes in technology and means of production, production relations, customer and societal perception and ones own expectations. Quest for creativity, propels the employee to contribute to the organization drawing positive energy from his innate potential and tuned to best performance models around him through self-exploration. This is a management strategy which believes in fulfilling its own objectives for enhancement of output by making its people delivering targets as responsibility, feeling of creativity and contribution for motivation, identifying with the organization as commitment and accountability as a hallmark of efficiency. Essential components of Theory of Accountability (Theory A) are : (1) Planning, (2) Target setting, (3) Motivation, (4) Work Strategies, (5) Responsibility, (6) Role model, (7) Monitoring & Guiding, and (8) Accountability [27-31].

3. Organizational Research Productivity & ABC Model:

Organizational Research Productivity is an important criterion to judge the organizational research output. Various metric systems are used to measure the organizational research output which include the number of publications for a given observation period. Accordingly one can determine annual research productivity,

biannual research productivity, or five years research productivity of a higher educational or research organization. Even though a number of models used to calculate the research productivity have been developed my many researchers based on logical postulates, only peer reviewed journal publications and peer reviewed books/book chapters can be acceptable for calculation of research productivity since they prove acceptable standards. One of such model that uses peer reviewed publications to calculate organizational research index is the recently developed ABC model [32]. According to ABC model of Institutional/individual research productivity, the success of higher education and research institutions - the objectives being creation of new knowledge through research involving all faculty members and students - depends on how much new knowledge has been created during a given observation period, say an year. As per the model, the annual research performance can be determined by knowing the research index (R.I.) of the institution or the individuals, calculated by considering the total number of research publications during that period. The institutional research productivity is calculated using a metric which consists of three institutional variables and one parameter. The three variables are identified as (A) Number of Articles published in peer-reviewed journals, (B) Number of Books published, and (C) Number of Case studies and/or Book Chapters published during a given time of observation. The parameter used is a number of full-time Faculty members (F) which remains constant during the given period of observation [32-39].

ABC model for measuring institutional performance [32-39] is based on following postulates. (1) The Quality of higher education depends on the ability of the institution in new knowledge creation. (2) The ability of new knowledge creation of the institution depends on the institutional research and publications by both faculty members and students. (3)The institutional publication is measured by calculating its annual average publications. (4) The institutional publication ability is measured by its annual publications in terms of the number of Articles published in Journals (A), the number of Books published in the subjects/Edited volumes (B), and the number of Business cases and Book chapters (C) published. (5)The Research productivity (P) of the institution can be measured by knowing research index () and weighted research index (), which shall be calculated using average publications in Journals, average publications of books and an average number of publications of Business cases. The research index per year () is calculated using the formula = (2A + 5B + 5B)C)/F, and the weighted research index (), per year, is calculated using the formula = (2A + 5B + C)/8F, where A = No. of publications in Journals in that year, B = No. books published in that year, C = No. of Publications of Business Cases published in that year, and F = No. of full-time Faculty members in that institution during that year. In the above formula, the weightage for a research article A is 2 and that of book B is 5 and the case study is 1, based on a quantified assumption of the relative significance & efforts involved in generating it arrived at through a summated scaling technique. (6) The annual research productivity (research index) of the organization decides institutional ranking.

4. Research Productivity & Institutional Ranking:

As per ABC model, the organizational research index is calculated using following formulae: Research productivity index of the Higher Education Institution, = (2A + 5B + 1C) / F, where A is number of papers published in reviewed & indexed Journals with ISSN number during a given year, B is number of books published with ISBN number during a given year, and C is sum of number of business cases and book chapters published during a given year. F is number full-time faculty members of the institution during a given year. Institutional Research productivity index = [(2A + 5B + 1C) / F] ----(1)

The weighted average is an average in which each quantity to be averaged is assigned a weightage. These weightages determine the relative importance of each quantity on the average. Weightages are the equivalent of having that many like items with the same value involved in the average. Weighted Research productivity index of the Higher Education Institution are calculated using following formula:

Weighted Research Productivity index, = [(2A + 5B + 1C)/8]/F ---(2)

Where A is the number of papers published in reviewed & indexed Journals with ISSN number during a given year, B is the number of books published with ISBN number during a given year, and C is the sum of the number of business cases and book chapters published during a given year. F is number full-time faculty members during a given year [35].

For individual researcher or faculty who has the responsibility of contributing to the new knowledge, the ABC model can be used to calculate the individual research productivity. Accordingly, the individual annual research productivity index = (2A + 5B + 1C)/8 ----- (3)

The average research productivity index for a given period = (2A + 5B + 1C)/8T ----- (4)

Where T is the number of years of observation. An individual research faculty, to be considered as competitive, should maintain annual research index and averaged annual research index at least 2. Table 1, which is developed using Focus group method [40-54] gives an idea of placing an individual researcher in a different category based on his/her expected annual research index.

5. Theory A Applied to an Organization for Higher Education:

In higher education and research organizations, Theory A plays an important role in all the stages of organizational performance. Adopting Theory A by intensifying all its constructs on organizational dynamic

resources (people) enhance research productivity. Organizational director/leader has multi-role in implementing Theory A in his/her organization effectively. The director, being the role model in an organization, expected to be involved in setting up the goal of individual researcher, planning in their annual research, supports acquiring required resources, building up their responsibility towards hard work through successful working strategy and innovative thinking, be role model for every researcher through their exceptional personal contribution, monitoring each and every researchers performance through conducting meetings and interaction with individual researcher, and by fixing accountability on individuals and groups for better performance as well as poor performance. It is the strategy and the smartness of individual administrator who is appointed as the director of the organization to develop a healthy competitive environment in the organization for enhancing and optimizing organizational research productivity through publications. Thus the effective implementation of Theory A by an administrator who can also be a role model for researchers through his personal contribution can increase organizational research index to be calculated using ABC model.

6. Implementation of Theory A for Improving Research Productivity:

The essential components of Theory A applied to any higher education institution are explained as follows:

Planning: The vision, mission, and objectives of the organization should be clear on organizational contribution towards research and development. Creation of new knowledge and using it for organizational progress should be a central activity for any organization whether it is production oriented or service oriented. By setting the objectives of the organization as research oriented and research focussed, an organization can encourage its every employee to think innovatively. Based on planning organizational objectives and proper planning to achieve it every organization can recruit and train innovative employees who have the passion for research and documentation so that organization can develop its planning strategy as the blue ocean to become a monopoly in its business. While considering higher education and research institutions, the organizational objectives should be planned towards involving more and more people resources in maximizing the research output by creating new knowledge and publication/patenting. Thus, being the first element of the theory of Accountability, planning finds a very important role in transforming a higher education organization into an active research institution for optimized contribution from employees. The various steps to be followed in planning step are:

- ✓ Either individually or jointly head of the organization analyse the institutional strength, weaknesses, opportunities and challenges towards fulfilling its objectives of creating new knowledge, ideas, and concepts through researching and sharing it with the society through publication/patenting.
- ✓ While identifying the problems in transforming the organization into a highly productive organization based on setting up the objectives in favour of research contribution and publications.
- ✓ The planning process involves identifying and recruiting right resources in all positions of the organization to fuel the research objectives.
- ✓ Organization should clearly plan its human resource recruitment and training policy by disclosing organizational objectives in favour of research contribution of individuals and teams.
- Planning should also involve allocation of the financial resource to promote various research centres, research groups, research projects and financial support to various activities related to enhancing organizational research output and publications.

Target Setting: This includes setting the research target for the organization, for various divisions, groups, and individuals. Target can set for the entire number of Research centres in the organization, number of projects to be applied for funding, number peer reviewed publications, the number of books to be published, etc. during a given year. The various steps to be followed in Target Setting process are:

- ✓ Based on the institutional research policy, the minimum target for the organization, departments, groups and every individual should be fixed. This includes the quarterly target, half-yearly target, annual target, and so on. Such target should be communicated to everyone in the organization.
- ✓ This stimulates a process of mutual consultation and dialogue among members of the organization to plan and achieve the target.
- ✓ As a result, the members realize their challenge in terms of new knowledge creation and how to redefine their individual and group goal.
- ✓ The target setting for individuals and groups makes everybody prepareand devote their effort towards better performance.
- ✓ The target should focus on how the research topics to be explored during the given time frame, research projects to be applied for funding, how many books, research articles, and case studies should be published during a given year.
- \checkmark The target should guide both organizational and individual research plans for a given year.
- ✓ Based on the target the faculty members and research scholars are asked to submit working papers and working books report as per their research topics and the objectives of the research centres they are heading.

- The primary targets for research and publications should be supported by secondary targets like \checkmark organizing conferences periodically to provide a platform to present their papers, to interact with similar objective researchers for collaborations etc. This also includes setting the target to participate in a minimum number of conferences, research workshops/seminars, and faculty development programmes which enhance their knowledge, confidence, and creates new ideas for research and publications.
- ✓ Finally, the documented target should be published on the website of the organization under working paper series so that there will a constant pressure on each and every researcher to fulfill the promise in the form of announced target.

Motivation: Once the target for optimum research and publication is set, the organizational leaders should develop and implement various policies to support researchers to meet the targets. Motivation may include support to identify research problems, providing financial support for research expenditures, appreciation of good performers, providing library and internet facility for extended hours, encouragement for collaborative research, publication support, developing research based curriculum, patent support, both financial and career advancement support for better performer etc. The various steps to be followed in Motivation of researchers are:

- \checkmark Creating interest in research and publications by higher authorities.
- ✓ Giving importance to individual ideas for group based research and involving every member of the group in discussions, research and publications.
- ✓ This group process also helps members discover their potential through self-exploration.
- ✓ The researchers also influenced by their reference group namely ideal performers.
- 1 As a result of this ideas become translated into performance.
- Motivation is a fundamental factor to engage the researchers in quality research and publications through tangible and intangible encouragement.

Work Strategies: The strategy is important for success. First and foremost, it is important that the research members of the organizations set their individual goals in consonance with the organizational goal. This comes in the form of a desire. A time-frame plan is essential for individuals and groups to accomplish their target. Working on different research projects simultaneously will give relaxation for researchers instead of continuously working in a single project continuously. Writing books on completed and published series of research papers is one of the strategies in enhancing research performance. Collaborating with many people and with many organizations and working on a number of projects and papers simultaneously is another strategy. Writing review papers and developing case studies wherever appropriate is the third strategy in achieving the targets. The various steps to be followed in forming Work Strategies are:

- ✓ Planning time-oriented research and publications by developing working papers.
- ✓ Assuming a competitive environment in individual and team progress in research publication performance.
- ✓ Monitoring the progress by themselves periodically and taking corrective measures periodically.
- ✓ Feeling enjoyment and satisfaction through the fulfillment of individual and group target achievements.
- ✓ Re-defining the target based on successive fulfillment
- **√** Finally getting organizational support to fulfill the target as an enabling strategy.

Responsibility: This is the major component of both individual and organizational success. When the researchers show their responsibility towards fulfilling the organizational objective which is enhancing the research productivity through improved publications, no other influencing factors are required for the better performance by groups and individuals. But based on personality type, only a few people take responsibility by themselves in any organization. For others, an external stimulus is required to point out their responsibilities. Such stimuli may be setting the target, motivation, continuous follow-up, showcasing role model or encouragement. The various characteristics of responsibilities within the researchers are:

- Assuming responsibility is owing responsibility, rather the manifestation of commitment.
 Responsibility gives speed and certainty of actions in delivering the goal.
- ✓ Responsibility inspires task execution which is a crucial part of all in meeting the target.
- Responsibility leads to goal attainment that helps target fulfillment.

Role Model: Super researchers can be the inspiration for every researcher in higher education institutions. By appreciating and showcasing their research output, organizations can set a higher target for all researchers. Role models can be anybody in the organization who outperform in research and contribute highest research output for the organization. Irrespective of age, gender, position and any kind of administrative responsibilities, role models can inspire every researcher in the organization and prove that higher research productivity is possible irrespective of any organizational and individual constraints. The various steps to be followed in developing and showcasing Role Model are:

- Superior performance is highlighted and spread to everybody in the organization.
- \checkmark Best research performers become role models in higher educational institutions which influence other members in their performance.

- ✓ This results in a change of attitude of researchers (both faculty members and students) from somewhat positive to highly positive and from mediocre performance or high performance.
- \checkmark Develops an intuition and inner motivation to perform like role models.

Monitoring: Continuously monitoring the research and publication progress and accelerating the research and publication productivity is essential to the leaders like research guides, group leaders, head of the departments, director etc. of the higher educational institution. This will automatically create responsibility and avoids procrastination nature of the faculty members and research students. The process of monitoring the research and publication progress include both self-monitoring and monitored by superiors. Monitoring can be done by the superiors on progress of research and publication by means of conducting weekly meetings, periodic faculty presentations and giving deadlines through institutional conferences or inviting papers for special issues of institutional journals. The various steps to be followed in continuous Monitoring are:

- ✓ There would be periodic re-visits to the targets set, its execution, and lag if any.
- \checkmark This gives an opportunity for every researcher to appraise their contribution.
- \checkmark As a consequence, the timeframe is set for the lag to regain productivity.
- ✓ Such continuous monitoring, accompanied guidance and suggestions lead the members to accomplish the task.

Accountability: Based on objectives of higher educational institutions, at the time of recruitment, the researchoriented faculty members should be given preference. While fixing the workload for faculty members, equal importance should be given to both teaching and researching. As a result, the higher education institution will rightly fix the target to each and every faculty. Similarly while designing curriculum for higher education courses, the institution should give special focus on a research-based curriculum where one or two papers should be added based on research and publications so that research atmosphere can be created among everybody in the organization. Performance-based incentives for the faculty researchers and publication based grades for the students will add accountability for both faculty researchers and student researchers. Research and publication accountability should be fixed to everybody including the heads of the departments and director of the organization so that satisfactory justice can be maintained throughout the organization. Depending on the organizational policy, the accountability may be positive or negative for achievers or losers respectively. The various methods to be followed in fixing accountability in higher educational institutions are:

- ✓ Individual commitment and performance are evaluated based on their research productivity periodically during performance assessment. Performance is measured against group goal, individual goal while setting the target, and while providing the organizational support.
- ✓ During the assessment, the annual research index can be calculated to measure the performance using ABC model.
- ✓ Acknowledgment of contribution is shared between individual and organization. High performers will be rewarded positively and poor performers will be rewarded negatively to maintain accountability of individuals and groups in the institution.

7. InterrelatingTheory A & ABC Model:

As per theory A, the research institution should have confined objective on research contribution by using resources in the institution. Based on the research objectives developed in the board meeting, the director has a responsibility of implementing the research objectives by fixing the goal of researchers and allocating the resources as per the requirement. The institutional director has a great responsibility of managing and directing the researchers by setting their target as per the institutional objectives. Accordingly, individual researcher (both faculty members and students) should plan their research and identify their working papers. Based on such plan and presentation of such plan in organizational meetings, the director can set the individual and collective target for every year. The next stage of theory A is the motivation of researchers by encouraging them to work hard and continuous follow-up in the research activities. In this stage, the individual and the departmental work strategies should be studied and supported. By arranging conferences and meetings with experts, the researcher's morale and confidence on thinking innovatively can be boosted. The institution should have policies to promote research and publications by providing support services to the researchers so that there should not be any constraints to the researchers to publish their work. Based on theory A, there should be stated policy annually to publish papers in journals (A), publish books on subjects (B), and the case studies and book chapters (C) so that institution can plan for high annual research index. The institution should share the responsibility to each and every researcher to fulfill the objective of reaching the planned research index. In this responsibility, the director and some senior professors should act as role model for young researchers by showing their super-researcher ability. The director of the institution has a dual role as super-researcher rolemodel and as a super-guide by monitoring everybody's progress and supporting them to reach their goal. This can be achieved by arranging faculty/researchers meeting every week to follow-up the progress. Based on such continuous monitoring, by the director of the organization, the institution can achieve its goal of improving research performance. Finally, the review on research performance and publications of all the researchers/faculty members should be carried out including director of the institution based on stated metric to

calculate individual annual research index and institutional annual research index. The annual research index of individual faculty can be compared with the standard grading table, as given in table 1 and individual faculty grading can be determined. Depending on the grading level achieved by the faculty members and their contribution to the research, increments and promotion or demotion or relieving from the job should be decided so that each and every faculty including the director will be made accountable for the organizational research performance according to 'Theory A'. To support the role model construct factor of theory A, which inspires the performance of employees in an organization, we have calculated the average annual weighted research index. Table 1: Annual Performance Indicator Chart of individual researcher grade based on expected annual research

S.No	Annual	Annual Weighted	Individual Annual/Average
	Research Index	Research Index	Researcher Grade
1	24 & above	3.0 & Above	Super Research Performer
2	16 - 24	2.0 - 3.0	Optimum Research Performer
3	8 - 16	1.0 - 2.0	Best Research Performer
4	4 - 8	0.5 - 1.0	Better Research Performer
5	3 - 4	0.375 - 0.5	Good Research Performer
6	2-3	0.25 - 0.375	Satisfactory Research Performer
7	1 - 2	0.125 - 0.25	Poor Research Performer
8	0 – 1	0-0.125	Non-Performer

Table 2: Factors connecting Theory A and ABC Model

S.No	Concerned Factor	Theory A and Theory A and Theory A	ABC Model
1	Organization Type	Any business organization which has profit/performance motivation.	Higher education & research organization with performance motivation through new knowledge creation.
2	Objectives	Profit as performance.	Research output in terms of publications as Performance.
3	Planning	Essential stage as organizational performance planning.	Essential stage as institutional research performance planning.
4	Target	Each division and Managers should have a set target for production or service delivery.	Each faculty/research scholar should have set target in the form of working papers.
5	Motivation	Essential element in any organization to achieve the business goal.	Essential element in any institution to achieve the research goal.
6	Work Strategies	Essential element in any organization to confirm the progress.	Essential element in any higher education & research institution to confirm the progress.
7	Responsibility	Basic requirement for managers in doing the task.	Basic requirement for researchers in the process of new knowledge invention.
8	Role Model	Encouragement, motivation, and confidence building on managers to outperform by showing Role models within/ external to the organization to prove that goal can be achievable.	Encouragement, motivation and confidence building on researchers to outperform by showing Role models within/ external to the institutions who have made super- performance to prove that the target can be achievable.
9	Monitoring	By means of continuous follow-up, by top level managers, everybody in the organization should be made to focus on their objective with continuous guidance.	By means of continuous follow-up, by research guide/Director of the organization, everybody in the organization should be made to focus on their work and publication through continuous guidance.
10	Accountability	The central element which promotes 'do or die' policy in the organization. Through incentives for winners & actions on losers, the organization should develop a strict policy for achieving its objectives.	The central element which promotes 'publish or perish' policy in the higher education or research institution. Through incentives/ promotions for performers & actions on nonperformers, the organization

should develop a strict policy for
achieving its objectives.

Table 2 depicts the interconnection between ABC model of research productivity and organizational theory of accountability. As per the table we can see a close connection between these two concepts. Each and every component of theory A, leads to corresponding support to the proposition of ABC model gives rise to enhanced research productivity. As a result, it can be argued that higher educational institutions which follow and adopt organizational theory for 21^{st} century – Theory of Accountability can get assured success in enhancing organizational research productivity.

8. Conclusion:

By interconnecting Theory A and ABC model of research productivity, organizations can boost their annual research index and outperform in research contribution. As per ABC model, the annual research performance can be determined by knowing the research index of the institution and is calculated by considering the total number of research publications during that period. Theory A plays an important role in all stages of organizational performance. Adopting Theory A by intensifying all its constructs on organizations dynamic resources namely people, enhance research productivity. This is a management strategy which believes in delivering target as responsibility, feeling of creativity and contribution for motivation, identifying with the organization as commitment and accountability as a hallmark of efficiency. In this paper, we have discussed how Theory A on organizations not only to boost their business productivity, but it also guides the strategic procedures to be followed by the higher educational institutions to enhance their research performance as organizational output.

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