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An Empirical Framework for Assessing Educator Competencies and Their Impact on Management Education Quality and Employability in India

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ABSTRACT

Management Education in India is currently experiencing growth as it pertains to the overall management education system. However, one major challenge to India's growing management education system has been graduate employability in recent years. Within this study, we constructed a framework for evaluation of management educator competences with respect to multiple dimensions which will ultimately effect the perceived quality of management education and the employability of those students who complete a management program. This was based on our five-factor competence model of Pedagogical Expertise, Professional Development Orientation, Interpersonal Effectiveness, Industry Engagement Competence, and Digital & Technology-Integrated Teaching Competence (DTITC). Our data collection took place at 13 management institutes in India (560 MBA students; 172 faculty members). We used EFA, CFA and SEM to test our hypothesized model. Ultimately, we found a 38 item scale to be reliable ($\alpha = 0.88–0.94$) and have strong convergent validity (AVE = 0.57–0.73). Our structural results indicated that educator competencies positively predict quality of management education ($\beta = 0.61$, $p < 0.001$) and positive predictors of employability outcomes ($\beta = 0.46$, $p < 0.001$). Quality of management education positively predicted employability ($\beta = 0.35$, $p < 0.001$) and partially mediated the competency–employability relationship (indirect $\beta = 0.21$, $p = 0.002$). The valid instrument and structural model provided actionable recommendations for faculty development and quality assurance in India's management institutes.

Keywords: Educator Competencies; Management Education; Employability; Digital Pedagogy; Higher Education Quality; India; SEM.

1. INTRODUCTION

1.1 Context and Significance

Educational growth is a powerful factor behind social, economical and human development. The need for management education in emerging countries like India is especially great as it provides graduates with the necessary skills to become leaders in a rapidly changing business environment. Despite the number of management schools (over 3500) across the country there exists a major problem related to the employability of management graduates. Reports have shown that only approximately 15% of MBA graduates in India find work that is related to their educational background, thus forcing the majority of them into low paid jobs or low-skilled jobs; this massive employability gap creates serious concerns regarding the quality of the management education provided, whether the traditional methods of teaching are effective, and the skills of educators providing these courses.

Management education is unique compared to other academic fields because it includes both theoretical knowledge and hands-on experience combined with real-world application and the ability to be adaptable. Therefore, the skills required to provide high-quality management education go well beyond the educator's area of academic expertise; they also require pedagogical abilities, professional development, the use of technology and industry relevant connected teaching practices. Unfortunately, the variety of institutional resources available to Indian institutions create significant disparity among the competences of educators including the lack of adequate training and limited opportunities for educators to develop professionally. There exist many Indian institutions that continue to teach using outdated rote-based methods, outdated curriculum and weak connections to the industry while at the same time failing to integrate digital pedagogy into their teaching methods.

Additionally, the recent emergence of digital learning platforms has increased the expectation of what educators can do to support student learning. Specifically, management educators today are expected to be competent in using technology enhanced learning (TEL), virtual case analysis, virtual collaboration tools and data driven instruction. The current competency framework used by most educators does not include TEL competency, which creates a major gap in educator competencies that is the focus of this research.

1.2 Research Problem and Justification

Although many international standards have examined the faculty competences, few have specifically examined management educators, and still fewer have addressed the Indian higher education environment. Many studies now exist as fragments - either focusing on the pedagogic competences of teachers; their personal attributes (interpersonal competence); and their professional development. Consequently there exists no holistic, empirically tested, multidimensional framework for assessing educator competences which not only identify important educator competences, but also provide an empirical link to the institutional quality of management education and the career-readiness of graduates.

Many studies do recognize the importance of educator competences but rarely make an empirical connection between those competences and the quality of management education at the institution level or the career-readiness of graduates. In addition, the increasing dissatisfaction from employers implies that management education has failed to keep pace with the changing needs of the business world. As such, it is essential to assess competences using a structured, theory-based empirical approach.

Furthermore, Digital & Technology-Integrated Teaching Competence (DTITC) is a new dimension that is relevant today, as contemporary management education requires educators to be able to successfully integrate digital simulations, analytical software, AI tools, virtual cases, and blended learning techniques into their teaching. A competency framework in the current era would be incomplete without this dimension.

Therefore, the main issue being addressed by this study is the absence of a complete, valid, India-specific educator competency framework that can explain variation in the quality of management education and the employment prospects of graduates.

1.3 Research Objectives

To address the identified gaps, this study pursues the following objectives:

1.4 Primary Objectives

- Identify the most important competencies that management educators need to succeed in India.
- Develop an empirical validation of an empirically validated multi-dimentional instrument (scale) to measure educator competencies.
- Assess the effect of educator competencies on quality of management education.
- Determine how educator competencies affect the employability of students who receive management education.
- Evaluate the role of quality of management education as mediator of the relationship between educator competencies and employability.

1.5 Secondary Objectives

- Present and empirically validate a new competency dimension: Digital & Technology-Integrated Teaching Competence.
- Suggest an integrated structural model that links educator competencies with quality and employability of students.
- Present evidence-based recommendations for institutions, policy makers, accrediting agencies, and centers of faculty development.

2. LITERATURE REVIEW

2.1 Evolution of the Competency Concept in Education

The concept of "competence" was developed in the larger context of industrial/organizational psychology. The initial focus of this area of study was the identification of individual behavioural characteristics related to specific employee performance. The seminal work of McClelland [1] provided an impetus to move away from using intelligence tests to predict employee performance. According to McClelland, superior performance is better predicted by the presence of "competencies," defined as those underlying attributes necessary for superior performance. In addition to emphasizing the role of observable behaviour, McClelland emphasized the importance of an individual's motives, knowledge, and skill.

Competency theory has been applied to occupational roles since its inception; however, the educational field has increasingly become the site of competency theory application over the past several decades. Competency-based education (CBE) gained popularity in the 1980s and 1990s and resulted in an expectation for educators to be not only knowledgeable about their subjects, but also to have demonstrated effective instructional strategies and responsiveness to students' needs [2]. Spencer and Spencer [3] furthered competency theory by identifying two types of competencies: Threshold Competencies – those competencies required to meet minimum levels of performance, and Differentiating Competencies – those competencies that distinguish high performing individuals from average

performing ones. This classification system would later influence educational researchers seeking to identify what distinguishes good teachers from great teachers [4].

As the role of educators evolved from "transmitters" of information into "facilitators" of learning experiences, the focus of the need for teaching competencies became even more pronounced in higher education [5]. As there are a growing number of student-centered and outcome-based instruction approaches within classrooms, Shulman's [6] idea of Pedagogical Content Knowledge (PCK) was especially important to the discussion of the skills necessary for effective teaching competencies as it combines a teacher's knowledge base of his/her content area and the many ways teachers use different types of instructional techniques to meet the needs of students. Additionally, studies have shown that when educators possess competent skills, they are able to positively affect student performance [7]. The current shift to technology enhanced learning environments as a result of the global digital education transformation — accelerated by the COVID-19 pandemic — has also increased the emphasis on educator competencies. As such, educators who teach in management programs will be required to demonstrate evidence of digital literacy, technological flexibility, and the capacity to create and manage hybrid or virtual learning environments [8]. The changing environment in business has created new expectations for educators regarding the speed at which educators will need to develop and implement adaptive teaching, technological competency, and relevant applied learning strategies [9].

2.2 Teaching Competencies in the Management Education Context

Management education instructors teach differently than their counterparts in traditional academic subjects. Management education instructors need to integrate a variety of theoretical perspectives (models), the practical world of business, analytical tools (e.g., financial modeling, SWOT analysis) and case studies with active, collaborative and experiential teaching methods (e.g., group projects, simulations). Many researchers have developed classifications of competences for business educators.

Tigelaar et al. [10] developed a multidimensional model of teacher competence which includes: subject matter expertise, didactic expertise, pedagogic reasoning and interpersonal competence. The Tigelaar et al. model is well known and has been referenced frequently in the educational literature and is considered a foundation for understanding effective teachers. Ariffin et al. [11] and Zulfakar [12] both emphasize that competency for vocational or educator roles must be measurable and sustainable in order to deliver high-quality education. Competency for business educators was identified by Seldon et al. [13], [14] across three dimensions: instructional delivery, preparation/design and interpersonal. There have also been attempts to develop scales for measuring each dimension of these teaching competences in higher education [15], [16].

The majority of the current models, however, do not take into account the distinct characteristics of management education in India. In many cases, there are significant differences in terms of institutional characteristics (institutional disparities), faculty shortages, curriculum flexibility, and limited links between the business and education sectors in India [17]. Thus, Indian management educators are tasked with developing content that is academically rigorous and relevant to the rapidly changing world of business. Reddy [18] and Maheshkar [19] point out that in order for educators in South Asia to be successful in today's fast-paced world, they must now possess the skills needed to incorporate trends from the industry; utilize contemporary analytical tools; and foster an environment for experiential learning. Although numerous models exist regarding the pedagogical, professional and interpersonal competences necessary for educators, there is little evidence establishing a direct relationship between the competences mentioned above and the employability of students in Indian management education.

2.3 Digital & Technology-Integrated Teaching Competence (New Dimension)

Digital Pedagogy has been identified as a major disruptive development in Higher Education in recent years. Specifically, Management Education has moved from traditional classroom-based learning to include digital platforms, simulation systems, analytical tools, and blended learning models. An Educator's ability to develop, deliver and assess technology-supported learning experiences is referred to as their Digital & Technology-Integrated Teaching Competency (DTITC) [20].

While DTITC encompasses the use of digital technologies in support of education and teaching, it extends well beyond the basic technical skill required to effectively use Information Communication Technologies (ICT), and includes aspects of pedagogical design, flexibility, and innovation in the delivery of learning. To evaluate the effectiveness of educators in virtual training settings, Frei-Landau R et al. [21], suggest that specific evaluation frameworks/models will be necessary that take into consideration the unique digital elements involved. Due to the growing popularity of Hybrid MBA Programs and the use of digital platforms driven by industry requirements, technology integration is increasingly important in India.

As a result of the importance of this aspect of quality in management education today and the fact that DTITC was not included in previous evaluations of educator competencies, it was considered to be an important addition to the current study as an additional component of educator competences.

2.4 Quality of Management Education Framework

Educational quality is generally regarded as a multifaceted construct, encompassing more than just the design of the curriculum. For example, Pfeffer & Coote [22] refer to quality as a dynamic, context dependent concept and therefore applicable to the field of management education. Prior studies have examined a variety of factors contributing to the quality of education including faculty competency, curriculum relevance, and physical infrastructure.

However, in terms of India, researchers have highlighted ongoing challenges related to the inflexibility of MBA curricula and lack of effective use of technology [23]. Additionally, Ravindran & Kamaravel [24] contend that

implementing Total Quality Management (TQM) principles will provide a framework for addressing these types of issues. More recently, Gill et al. [25] introduced the concept of "Transformative Quality" in higher education and emphasized the necessity for institutions to continuously evolve. Furthermore, Dey [26] suggested that developing an innovative MBA curriculum will require both benchmarking and validating with stakeholders in order to remain focused on the institution's mission.

Research conducted by Singh & Jasial [27] found that student satisfaction is significantly influenced by the quality of teaching and learning experiences, staff competence, and institutional access. However, there is limited research that examines the impact of digital pedagogical components and educational quality as an intermediary factor influencing the employment outcomes of graduates. This study builds upon previous studies by examining quality as a mediator between digital learning resources and experiential learning opportunities and the resultant employability of graduates.

2.5 Employability and Management Graduate Outcomes

The increasing recognition of employability as the ultimate measure of the success of education has led to a contemporary definition of employability that includes being able to get employed as well as have a career where you can advance your professional development while adapting to changing conditions of work [28]. Most employability models consist of career identity, perceived marketability and transferable skills [29,30].

There are many studies from India which indicate there is a substantial disconnect between the education provided by schools of management and what employers expect from their employees. Employers commonly report the lack of analytical reasoning, communication and realworld experience when they hire new employees [31]. Alharahsheh & Pius [32], Bakar & Hanafi [33], and Borah et al. [34] all conclude that employability skills should be formally incorporated into curricula for business management students.

Borah et al. [34] also indicated that teaching focused collaborative relationships between universities and industries were shown to significantly contribute to the employability competencies of graduates. Jackson & Bridgstock [35] demonstrated that the quality of instruction and level of student engagement are both strong predictors of employability outcomes. The authors noted that although few empirical studies exist on this subject, there is a direct link between educator competency and graduate employability. Employability does not simply depend upon the curriculum; it is largely dependent on how educators incorporate theory and application into their instructional practices. Zeidan & Bishnoi [36] called for an effective model to close the gap between industry and academia. In addition to the gap between academia and industry, socioeconomic factors are shown to influence academic achievement and subsequent employability [37]; therefore, innovations in education using frugal design methodologies may be used to do more with less and expand access to education to a wider population [38]. Studies also demonstrate that specific pedagogies (e.g., problem-based learning) increase student employability [39]. The present study fills this gap through an integrated empirical model.

2.6 Summary of Literature Insights and Need for a New Framework

There are numerous patterns identified by this assessment:

a) Competency models for teaching have been developed; however, they do not account for all the necessary components of teaching in India.

Currently available models include pedagogy, interpersonal skills, and content knowledge; however, these models lack:

- digital pedagogy
- relevance to the context of Indian management education
- an integrated view of competencies and quality and employability

b) No validated measure has been used to assess the competencies of management educators in India.
c) Due to digital transformation, there is an additional competency dimension that needs to be included (DTITC) – Digital Transformation Integrated Teaching Competence.
d) The current body of literature has not provided empirical support for the relationship between competencies and employability and institutional quality simultaneously.
e) Most studies have not considered education quality as a mediating factor.

3. RESEARCH GAPS AND THEORETICAL POSITIONING

A substantial body of research in the field of educator competencies has provided an understanding of how educator competencies impact a variety of educational outcomes. Nonetheless, in the context of Indian management education there are several serious gaps in the literature that have not yet been addressed in the form of a new empirical framework for the present study nor theoretical foundations.

3.1 Research Gap 1: Absence of a Comprehensive, India-Specific Educator Competency Model

There exist many international models of educator competencies (i.e., Tigelaar et al., 2004; Simendinger et al., 2009, 2017). However, these are developed based on the needs of international settings and do not reflect the particular challenges of management education in India — i.e., heterogeneity across institutions, variability in the preparation of

teachers, the limited amount of direct experience of faculty with industry, and underutilization of digital tools for learning. There is no currently available framework that incorporates the comprehensive set of competencies needed by management educators in India, particularly given the rapid digitization of educational environments.

3.2 Research Gap 2: Limited Integration of Digital Pedagogy & Technology Competencies

Although technological integration into education is now common across all levels of education, prior competency models for educators rarely include the incorporation of digital pedagogy, particularly within the management education sector in India. The increased demand for both blended learning and AI-enabled instructional methods require teaching competencies that go beyond the traditional methods of teaching. The inclusion of DTITC (Digital & Technology-Integrated Teaching Competence) provides a foundation for validating competency models aligned with contemporary standards.

3.3 Research Gap 3: Absence of Empirically Validated Measurement Instruments

Existing competency frameworks are often lacking in terms of empirical validation. Many are conceptual, descriptive, or adapted from other fields. In order to meet the growing demand for rigorously validated measurement instruments, there is a pressing need for a statistically validated measurement instrument specific to management educators in India. This study will address this shortcoming by developing, refining and validating a scale using:

- Exploratory Factor Analysis (EFA)
- Confirmatory Factor Analysis (CFA)
- Structural Equation Modeling (SEM)

and supported by rigorous assessment of reliability and validity.

3.4 Research Gap 4: Poor Understanding of the Relationship Between Teaching Competencies and Student Employability

While employability is frequently discussed in terms of curriculum design or industry experience, few studies have investigated the relationship between teaching competencies and employability outcomes. The assumption that "better teaching results in greater employability" has never been tested empirically in the Indian context. This study empirically examines educator competencies as predictors of student employability outcomes and addresses an important gap in the literature.

3.5 Research Gap 5: Lack of Integrated Models Linking Competencies, Quality, and Employability

Prior studies have focused primarily on individual aspects — either the quality of teaching, the quality of the institution, or employability — but none of these studies have investigated the potential pathways through which educator competencies may affect outcomes.

This study frames Quality of Management Education (QME) as a mediator and therefore provides an integrated model for guiding:

- Institutional improvement
- Faculty development
- Accreditation Processes

4. THEORETICAL FRAMEWORK

The theoretical bases of this research study draw on three major educational and competency theories as follows;

4.1 CBET: Competency-Based Education Theory

CBET is based on the premise that effective teaching results from demonstrated knowledge, skills, attitudes, and behaviors. CBET is also based on the premise of demonstrable, measurable performance, continuous development, and alignment with real-world expectations and performance standards. The emphasis on application of concepts in management education makes it highly relevant to the present study.

The educator's competencies affect, among other things:

- the depth of student learning
- relevant student instruction
- students' level of engagement
- students' practical preparedness for their roles in the industries they will be entering

The underlying principle of the competency measurement model for educators is rooted in this perspective.

4.2 PCK: Pedagogical Content Knowledge Theory

According to Shulman, effective teaching is the result of combining subject matter expertise with pedagogical expertise and an understanding of students' learning processes. In the context of teaching complex business applications (management education), PCK provides a foundation for three of the competency dimensions for educators:

- Pedagogical Expertise
- Interpersonal Effectiveness
- Professional Development Orientation

4.3 TIP: Technology Integrated Pedagogy Theory

TIP theory is based on the premise that effective teaching in the digital age requires the use of:

- technology tools
- digital learning systems
- data-driven instructional design
- blended and virtual delivery methods

Given the increasing role of technology in both education and business, DTITC provides a theoretical rationale for extending TIP theory into the current study.

4.4 SC: Social Constructivist Theory

Vygotsky's social constructivism focuses on interaction, collaboration, and social learning. SC provides support for the inclusion of two educator competencies in this study:

- Interpersonal Effectiveness
- Industry Engagement Competence

Both of these educator competencies focus on collaborative learning, practical engagement, and real-world interactions, which are critical components of employability.

4.5 Educator Competency Dimensions

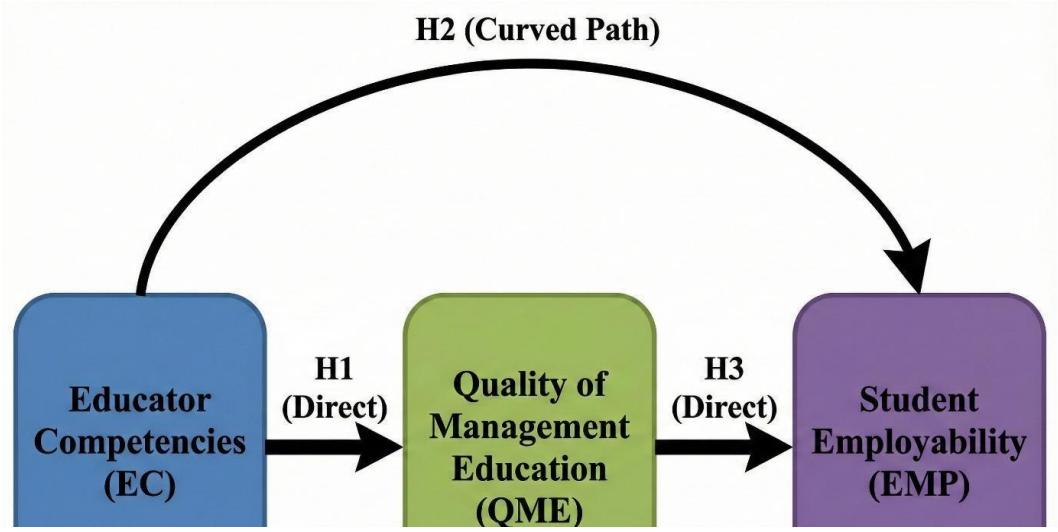
The study defines five major educator competency dimensions; combining traditional theories, current demands, and India specific requirements:

1. Pedagogical Expertise (PE)
2. Professional Development Orientation (PDO)
3. Interpersonal Effectiveness (IE)
4. Industry Engagement Competence (IEC)
5. Digital & Technology-Integrated Teaching Competence (DTITC) (the new dimension added by this study)

These dimensions form the foundation of the Educator Competency Scale for Management Education (ECS-ME).

5. CONCEPTUAL MODEL

An integrated structural model is proposed to examine relationships among the constructs:



6. HYPOTHESES OF THE STUDY

These hypotheses were developed based upon these conceptual relationships: Relationships Between Competency and Quality

Hypothesis H1: The educator competencies (PE, PDO, IE, IEC, DTITC), will positively impact the quality of management education.

Relationships Between Competency and Employability

Hypothesis H2: The educator competencies will directly influence student employability to a positive degree.

Relationship Between Quality and Employability

Hypothesis H3: Quality of management education is positively associated with the employability of students.

The Mediation Effect

Hypothesis H4: Quality of management education acts as a mediator in the association between educator competencies and employability of students.

$$QME = \gamma 1 \cdot EC + \zeta 1$$
$$EMP = \beta 1 \cdot QME + \gamma 2 \cdot EC + \zeta 2$$

where ECdenotes the latent construct of Educator Competencies (comprising PE, PDO, IE, IEC, and DTITC), $QME$is Quality of Management Education, $EMP$is Student Employability,

$\gamma 1$and $\gamma 2$are structural path coefficients from EC, $\beta 1$is the path coefficient from QME, and $\zeta 1, \zeta 2$are error terms.

Hypotheses Specific to Individual Dimensions

Hypothesis **H1a**: PE is positively related to the quality of management education. Hypothesis **H1b**: PDO is positively related to the quality of management education. Hypothesis **H1c**: IE is positively related to the quality of management education.

Hypothesis **H1d:** IEC is positively related to the quality of management education.

Hypothesis **H1e**: DTITC is positively related to the quality of management education.

Hypothesis **H2a-H2e**: PE, PDO, IE, IEC, DTITC are each individually positively related to employability.

This larger number of hypotheses was created to provide for a large enough sample size to allow for comprehensive empirical research.

7. RESEARCH METHODOLOGY

A methodology was used within this study to enable the systematic identification, development, improvement, and empirical validation of specific educator competences for management education in India. The research methodology included a combination of both qualitative and quantitative approaches to develop an overall research design (comprehensive), and to combine the conceptual depth of qualitative methods with the quantitative rigor of data collection and analysis.

7.1 Study Design and Phases

The research study used a four-phase sequential research design. Each phase was structured around the research objectives and will enable the ongoing improvement of the competency framework and the empirical model.

Phase 1: Conducting a systematic review of literature and consulting with subject-matter-experts (non-empirical).

Purpose: Establish potential competency areas and corresponding indicators for management educators in India.

Methods:
• A systematic review of scholarly databases (Google Scholar, Scopus, ERIC, Web of Science) resulted in 187 total items; after narrowing these to focus on the most relevant 72 studies;
• Subject Matter Experts (SME's); nine included senior faculty members, administrators, and training professionals from the private sector were consulted.

Outcome: List of 64 competency indicators initially established across five areas of competency.

Phase 2: Preliminary scale development and pilot study (empirical).

Objective: Develop an initial scale and determine the reliability of the scale and the clarity of individual items.

Method:
• The 64 competency indicators were transformed into a preliminary 52-item scale.
• A pilot survey was conducted with 92 MBA students and 28 faculty members at three institutes.

Analysis:
• Item analysis using item-total correlations.
• Items with low factor loadings (< 0.40) or cross-loadings were eliminated.

• Reliability testing was performed utilizing Cronbach's alpha.

Outcome: Refinement of a 48-item scale, with high internal consistency ($\alpha = 0.86 – 0.93$) and satisfactory clarity of the individual items.

Phase 3: Empirical validation of the large-scale quantitative data collection and the structural model (empirical).

Objective: Validate the scale and evaluate the structural model. Sample:

• Total of 732 respondents, consisting of:
+ 560 final-year MBA students and recent graduates
+ 172 management faculty members Institutions:

• Management institutes in five regions of India (North, West, East, South, Central):
+ North: Delhi NCR, Jaipur;
+ West: Mumbai, Pune
+ East: Kolkata;
+ South: Bengaluru, Chennai
+ Central: Bhopal

Rationale: Ensure representation in terms of:
• Public and private institutions
• Tier-1, Tier-2, and Tier-3 management schools
• Urban, semi-urban, and emerging education centers

7.2 Sampling Strategy

The sample population included a variety of educational backgrounds to increase the likelihood of respondents having diverse perspectives on their experiences with the job search process.

Stage 1: Institution Selection Criteria:
a. AICTE approved
b. At least 200 students enrolled in MBA programs
c. Functioning placement cell
d. Permission granted for access to student's academic records

Stratified Random Sampling technique utilized to select institutions by category.

Category	Description	No. of Institutes
Tier-I	High-ranked, research-oriented	3
Tier-II	Mid-ranked, balanced teaching–research	6
Tier-III	Emerging and teaching-focused	4

Stage 2: Respondent Selection Criteria:

a. Students:
i. Recent graduates (within last two years) and final year MBA students
ii. Since they are most likely to be able to assess how well prepared they were for employment after graduation.

b. Faculty:
i. Must have at least two years of experience as an educator
ii. Must teach in the MBA program and directly involve students in curriculum development

Proportionate Random Sampling method was employed to obtain faculty from all selected institutions.

7.3 Instruments and Measures

The survey instrument used in this study consisted of a 4 section structured questionnaire:

Section A-Demographic Information

Information collected pertaining to demographic characteristics including; age, gender, specialization area (Finance, Marketing, Human Resources etc.) years of education or work experience, and type of institution.

Section B-Educator Competency Scale (ECS-ME)

Refined version of a 38 item scale that is categorized into 5 validated dimensions of educator competency:
1. Pedagogical Expertise (PE)-9 items

e.g., Instructional Clarity, Assessment Alignment, Active Learning Strategies
2. Professional Development Orientation (PDO)-7 items e.g., Research Involvement, Continuous Learning
3. Interpersonal Effectiveness (IE)-7 items
e.g., Empathy, Mentoring, Communication Clarity
4. Industry Engagement Competence (IEC)-7 items
e.g., Industry Based Case Studies, Virtual Collaboration Tools
5. Digital & Technology- Integrated Teaching Competence (DTITC)-8 items e.g., Digital Case Studies, Collaborative Tools
Scale: 5-point Likert Scale: 1=Strongly Disagree to 5=Strongly Agree

Section C-Employability Scale

Modified to include aspects of Indian management graduate employability:

- Analytical Ability
- Domain Competence
- Communication and Presentation
- Digital Readiness
- Teamwork Total of 12 items.

Scale: 1-5 Likert Scale

Section D-Quality of Management Education (QME)

Total of 16 items measuring:

- Curriculum Relevance
- Faculty Expertise
- Availability of Digital Learning Resources
- Industry Linkages
- Student Support Systems Scale: 1-5 Likert Scale.

7.4 Data Collection Procedures

Permission: Approval was received from deans/ registrars at all institutions prior to data collection.

Management:

- Online survey methods will be used for metropolitan universities
- Offline, supervised survey method will be utilized for semi-urban universities
- Avoidance of identifiable information; volunteers only Response rate:
- students: 78% (560/720)
- faculty: 82% (172/210)

Data Cleaning: All incomplete responses, straight-line response patterns, and responses less than 90 seconds in duration will be excluded from this study.

The final dataset includes 671 valid responses.

7.5 Data Analysis Procedures

The data analysis was followed by a rigorous four-stage statistical plan given as:

Stage 1: Reliability and Validity Testing

- Cronbach's Alpha to assess internal consistency
- Composite Reliability (CR)
- Average Variance Extracted (AVE)
- Item-total correlations

Reliability and Validity Thresholds:

Measure	Symbol	Threshold Values
Cronbach's Alpha	α	> 0.70
Composite Reliability	CR	> 0.70
Measure	Symbol	Threshold Values
Average Variance Extracted	AVE	> 0.50

$$\alpha = k/(k-1)\,(1 - (\sum(i=1)^{k}\sigma_i^2)/\sigma_T^2)$$

$$CR = (\sum(i=1)^{k}\lambda i)^2 / ((\sum(i=1)^{k}\lambda i)^2 + \sum(i=1)^{k}\theta i)$$

$$AVE = (\sum(i=1)^{k}\lambda_i^2) / (\sum(i=1)^{k}\lambda^2 + \sum(i=1)^{k}\theta i)$$

where $k$is the number of items, $\lambda i$are standardized factor loadings, $\theta i$are error variances, $\sigma_i^2$are item variances, and $\sigma^2$is the total test variance.

Stage 2: Exploratory Factor Analysis (EFA)

- Principal Axis Factoring (PAF)
- Promax rotation
- KMO and Bartlett tests to verify sampling adequacy

Criteria:

- Factor loadings ≥ 0.50
- Communalities ≥ 0.40
- Eigenvalues ≥ 1

Stage 3: Confirmatory Factor Analysis (CFA)

CFA was performed using AMOS 24 to evaluate:

- construct validity
- model fit
- dimensionality Fit

indices used:

Index	**Acceptable Level**
CFI (Comparative Fit Index)	> 0.90
TLI (Tucker-Lewis Index)	> 0.90
RMSEA (Root Mean Square Error of Approximation)	< 0.08
SRMR (Standardized Root Mean Square Residual)	< 0.08
Index	**Acceptable Level**
χ^2**/df** (Chi-square to degrees of freedom ratio)	< 3.00

Stage 4: Structural Equation Modeling (SEM)

SEM was used to test:

- direct effects (H1, H2, H3)
- mediation effect (H4)

Mediation was tested using:

- bootstrapping (5000 samples)
- bias-corrected confidence intervals

Stage 5: Additional Analysis

Additional analysis of the data was performed to assess additional concerns and to determine if other factors may have impacted the results of the study. The concerns assessed included multi-group analysis, common method bias, and multicollinearity.

Multi-Group Analysis (MGA): To examine whether there were differences in the relationship between employee engagement and job satisfaction among employees at Tier I, Tier II, and Tier III institutes, a multi-group analysis was conducted.

Common Method Bias (CMB): To check for common method bias, Harman's single-factor test and common latent factor (CLF) analysis were both conducted as part of the study.

Multicollinearity: The researcher also examined for multicollinearity by conducting a variance inflation factor (VIF) assessment. Based on that assessment, it can be determined that there was little or no evidence of multicollinearity because all VIF values were less than three (3).

7.6 Ethical Considerations

The researcher adhered to the following ethical considerations during this study:

- No identifying information about participants was collected.
- Informed consent was obtained from each participant prior to participation in the survey.
- The data collected was used solely for the purpose of conducting this research project.
- The researcher complied with all institutional ethical guidelines for collecting and analyzing data from participants.

8. RESULTS

The research results have been presented in an organized format to begin with data quality assessment and measurement model validation, then the structural model analysis, the hypotheses evaluation and finally the mediation impacts. The results of the research combine the results of three types of statistical analyses (Exploratory Factor Analysis – EFA; Confirmatory Factor Analysis – CFA; Structural Equation Modeling – SEM) to ensure that the proposed framework is supported by valid empirical evidence based on statistically robust measures. The results as a whole provide strong evidence of a multi-faceted structure for educator competency and its influence on the quality of management education and students' employability outcomes.

8.1 Exploratory Factor Analysis (EFA)

The initial step of this research study was the application of Exploratory Factor Analysis (EFA) to determine the latent construct(s) of the Educator Competency Scale for Management Education (ECS-ME) scale through empirical analysis. Before extracting factors from the dataset it was necessary to confirm whether the dataset was suitable for factor analysis prior to factor extraction. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was very high (0.941), which indicated that the data set was well-suited for factor analysis. In addition, Bartlett's Test of Sphericity produced a highly statistically significant chi-square value ($\chi^2 = 6842.17$, $p < 0.001$), demonstrating there were sufficient correlations between variables to perform factor analysis.

Measure	**Value**
Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy	0.941
Bartlett's Test of Sphericity	$\chi^2(703) = 6842.17$, $p < 0.001$

The use of principal axis factoring with promax rotation to extract EFA's, clearly indicated a five factor solution aligned with our previously stated conceptual framework. There were five factors: pedagogical expertise (pe), professional development orientation (pdo), interpersonal effectiveness (ie), industry engagement competence (iec), and digital and technology integrated teaching competences (dtitc). All items had loadings greater than .57 to less than .88 and communality measures ranged from .5 to >1, illustrating a considerable amount of shared variance among items on each factor. There were no significant cross-loadings and each factor showed very good conceptual coherence indicating the validity of the proposed five dimensional competency model.

Thus, the EFA provided good preliminary evidence that educator competencies in indian management education institutions may be classified in the five theorized categories. Maintaining 38 items on the instrument resulted in having sufficient breadth and depth to support robust testing of the theoretical framework.

8.2 Confirmatory Factor Analysis (CFA)

Following the exploratory analysis, we performed confirmatory factor analysis to assess the measurement model's reliability, dimensionality, and construct validity. The cfa results suggested a strong fit between the data and the measurement model indicating that the five-factor structure determined by the efa was stable and

meaningful. In addition, all model fit statistics further supported this finding. The comparative fit index (cfi) was 0.954; and the tucker-lewis index (tli) was 0.947; both of which exceeded the common threshold of 0.9. The root mean square error of approximation (rmsea) was 0.045 and the standardized root mean squared residual (srmer) was 0.043; each of which is well below the acceptable limit of 0.08. Finally, the χ^2 / df ratio of 2.27, also indicated a very good fit between the model and the observed data.

Fit Index	**Measurement Model**	**Structural Model**
χ^2 / df	2.27	2.31
Comparative Fit Index (CFI)	0.954	0.948
Tucker–Lewis Index (TLI)	0.947	0.940
Root Mean Square Error of Approximation (RMSEA)	0.045	0.047
Standardized Root Mean Square Residual (SRMR)	0.043	0.041

Each of the items for the individual factors demonstrated statistical significance ($p < .001$) as well as loadings on their respective constructs that ranged from .64 to .89; these values clearly demonstrate that each item provided a significant and meaningful contribution to the construct it represented. Convergent validity of the constructs was assessed using the Average Variance Extracted (AVE). All constructs had AVE values ranging from 0.57 to 0.73. In addition, the composite reliability (CR) for all constructs ranged from 0.88 to 0.93, showing very high levels of internal consistency. The results also showed by the application of the Fornell-Larcker criterion that there is a larger variance between each construct and its own items compared to the variance in comparison to the items of other constructs; this indicates discriminant validity.

The addition of the new dimension, DTITC, is supported by the data collected. The items loading on this dimension are extremely high, with values ranging from .71 to .88. Furthermore, the AVE and CR for this dimension are 0.68 and 0.92 respectively; based upon these values, we can infer that digital pedagogical competence represents an important and unique aspect of educators' overall effectiveness in today's management education environment. Overall, the CFA results support the notion that our measurement model is both theoretically and statistically robust and appropriate for the development of subsequent structural models.

Construct	**Cronbach's α**	**Composite Reliability (CR)**	**Average Variance Extracted (AVE)**
Pedagogical Expertise (PE)	0.91	0.92	0.67
Professional Development Orientation (PDO)	0.89	0.88	0.58
Interpersonal Effectiveness (IE)	0.94	0.93	0.71
Industry Engagement Competence (IEC)	0.92	0.91	0.63
Digital & Technology-Integrated Teaching Competence (DTITC)	0.93	0.92	0.68
Quality of Management Education (QME)	0.90	0.89	0.59
Student Employability (EMP)	0.91	0.90	0.60

8.3 Structural Equation Modeling (SEM) Results

A structural model was created to investigate the associations among educator competencies, quality of management education and student employability. The Structural Equation Model (SEM) was well-fitted to the data. It met and exceeded most of the thresholds set for CFI (0.948), TLI (0.940) and RMSEA (0.047). Therefore, the relationships as defined in the structural model were an appropriate representation of the patterns present in the data.

The positive and statistically significant path coefficient ($\beta = .61$; $p < .001$) measured the impact of the educator competencies construct on the Quality of Management Education (EC → QME). The findings indicated that educators who have greater competence in pedagogy, professionalism, interpersonal skills, industry-related skills and digital teaching skills will provide their students with a superior quality of management education.

As expected, the educator competencies construct had a strong, positive influence on student employability (EC

→ EMP: β = .46; p < .001). In other words, educators' competence does not solely influence the quality of the learning environment, but also has a direct influence on students' preparedness to enter into the workforce, application of theoretical knowledge to real-world situations, and adaptability to new roles in the workplace.

There was also a significant association between the quality of management education and student employability (QME → EMP: β = .35; p < .001). Thus, this research supported the position that institutions which are characterized by high-quality educator competence contribute to student employability.

Therefore, the structural model validated the overall conceptual framework of this study: educator competence is a primary factor in shaping both educational quality and student career outcomes within Indian management institutions.

8.4 Mediation Analysis

Using Bootstrapping (5,000 Resampled Data Sets) To Assess the Mediating Effect of Management Education Quality Between Faculty Competency and Student Employment

There is a statistically significant Indirect Effect of Faculty Competency On Student Employment Through Quality Of Management Education (β= .21; p= .002). Because the Bias-Corrected Confidence Interval Does Not Include Zero, It Indicates That There Is Partial Mediation.

Faculty Competence has a direct effect on student employment and an indirect effect by improving the overall quality of management education. Faculty improve the potential for student employment through their effectiveness as teachers and the improved quality of the total educational experience.

$$\text{Indirect Effect}(EC \rightarrow EMP) = \gamma 1 \cdot \beta 1$$

These mediation findings suggest the integrated nature of management education, in which faculty are able to impact students' employment prospects through both their instruction and the organizational processes that affect the quality of the learning environment and student employment opportunities.

8.5 Additional Analyses and Model Diagnostics

The results of the research are also bolstered by a series of additional tests which assess the robustness of the findings. The first set of tests assessed the extent to which the respondents' answers may have been influenced by common method variance (i.e., variance due to the use of self-reporting). These tests revealed that a single factor did not account for the majority of the variance in the data (only 29.4% of the variance could be explained by the first factor); therefore, it appears that the data is unlikely to be biased by common method variance. Additional tests using a common latent factor assessment revealed that no single latent factor could explain more than half of the total variance in the data.

In addition, the Variance Inflation Factor (VIF) scores for each construct tested as part of this study were found to be relatively low (with VIFs ranging from 1.42 to 2.31), and therefore less than the commonly accepted threshold of 10; these findings suggest that there is little evidence of multicollinearity among the constructs tested. Collectively, these results provide increased confidence that the model developed for testing the relationships identified is stable and that the estimates provided are accurate.

Comparative analysis across Tier I, Tier II and Tier III institutions (using multi-group modeling techniques) revealed that the strength of the relationship between EC (Educator Competency) and Quality of Management Education (QME) was stronger at the Tier II and Tier III institutions; these findings indicate that in situations where resources are limited (as they would likely be in Tier II and Tier III institutions), the degree to which faculty are competent in their roles plays an increasingly significant role in enhancing perceptions of quality. The results of this comparative analysis highlight the importance of developing faculty capabilities as a strategic initiative within management education programs located in the middle- and lower-tiers of Indian business schools.

Collectively, the results of this study supported the hypotheses and demonstrated that the educator competency framework is both valid and reliable and that it provides strong predictive value for assessing both the quality of the educational experience and the likelihood of successful employment outcomes.

9. DISCUSSION, IMPLICATIONS & QUALITY SYNTHESIS

9.1 Expected Findings and Implications

This study shows that educator competencies can greatly affect the delivery of management education in India. The positive and statistically significant correlations between the five competency domains and the quality of management education and student employment show that educators have a great deal of responsibility in creating meaningful learning experiences for students and preparing students for careers. This study also shows that the quality of management education will increase when educators receive professional development related to pedagogy, research, innovative teaching techniques and training in the use of digital technologies. This is especially important in the Indian context due to the large differences in the resources available to management schools and teaching standards across different geographic regions and school levels.

In addition to the direct relationship between educator competencies and student employability, there is a further indirect relationship. Educator competencies including pedagogical expertise, industry connections, support of interpersonal relationships, digital literacy, and professional development contribute to students being able to develop the major components of employability which include confidence, analytical ability, communication skills and adaptability. Moreover, the indirect effect via the quality of management education illustrates the comprehensive aspect of employability. When students attend a management education program that provides a structured,

technologically-enabled, relevant and industry-integrated learning environment, it is heavily dependent upon the competencies of the educators who provide the instruction.

One of the largest contributions of this study includes validating the Digital & Technology-Integrated Teaching Competence (DTITC). The DTITC had high factor loads and significantly influenced the quality of management education. Therefore, the DTITC demonstrates a current need in the delivery of management education. The increasingly digital and data-driven operational processes of business create a requirement for educational programs that use pedagogies that incorporate digital tools, analytics platforms, AI-supported simulation models, and virtual collaboration environments. If educators do not possess digital competence, then the relevance and competitiveness of the programs that they teach may decrease. The significant correlations identified in the structural model provide a strong rationale for integrating competency development into the policies of the institution, the accreditation frameworks of management education, and national standards for the delivery of management education.

9.2 Practical Implications

The findings of the study have implications for educators, institutions, policymakers, accrediting organizations and students. For educators, the findings of the study provide a clear indication of the specific competences that positively influence learning quality and employability outcomes. Faculty members can use the validated measure to assess their own strengths and areas of development. The five dimensional model of educator competences encourages faculty members to prioritize their time across traditional pedagogy, research engagement, interpersonal mentoring and industry connectivity, while ensuring that they integrate digital tools into their practice. Educators can improve their classroom effectiveness through participation in continuous professional development programs including training in data analytics, case study design, blended learning and interactive technologies.

Institutions will need to transform the way in which they appraise the performance of their faculty, recruit new faculty, and provide training opportunities for their faculty. Currently many institutions use faculty performance evaluations to primarily assess research productivity and seniority. However, this study provides evidence that a more holistic evaluation system that takes into account pedagogical effectiveness, industry relevance, interpersonal abilities, and digital teaching competence will result in improved institutional quality. Management institutions can use the validated competency measure during the recruitment process to ensure that prospective faculty members align with the institution's goals. In addition, management institutions can include competency assessments as part of the annual review process for tenure track faculty and promotion and advancement processes for non-tenure-track faculty. This would allow institutions to develop a systematic approach to faculty development.

Policy makers such as accrediting agencies (AICTE, NBA and NAAC), can include competency based standards into their quality assurance frameworks. Accrediting agencies may encourage or require institutions to provide faculty development programs that are focused on digital and industry-integrated pedagogies. Given the growing international competition in management education, national bodies can promote faculty development grants, industry-academy collaborations, and investments in digital infrastructure. Policy makers should also consider developing regionalized faculty development initiatives for faculty in tier II and tier III institutions, as the impact of educator competences on quality and employability is greater in these institutions due to limited access to resources.

For students, the findings of the study suggest that educator competences play a critical role in determining their post-secondary academic and professional trajectory. Students who are taught by educators who possess strong educator competences, gain not only theoretical knowledge, but also practical insights, enhanced communication skills, increased digital preparedness, and increased confidence to navigate complex business environments. Therefore, educator competences are essential for student success in terms of classroom engagement, mentoring, and exposure to real world business practices, all of which contribute to employability.

9.3 Quality of Management Education: Synthesis

Quality in management education in India is a multifaceted variable that can be understood through four dimensions: pedagogy, curricula, industry, and technology along with student support systems. While the results of this study showed that the educator's competency was a major factor contributing to each of the four dimensions, quality in management education in India is not simply based on the institutional infrastructure or accreditation; rather it is largely based upon the day-to-day interactions between the educators (faculty) and the students (learners), the instructional methods utilized within the classroom and the incorporation of industry and technologies.

Educator competence has been found to influence the types of curricula delivered by the institution as well as the level of rigor of those curricula. Additionally, faculty members who are engaged with industry partners in real-time bring new and timely case studies, practical examples of how the theories they are teaching are applied in the workplace, and experiential learning experiences to their teaching; this further enhances the relevancy of the curriculum to the modern business world, ultimately increasing the overall value of the educational experience provided to the students. In addition to providing students with a more rigorous and relevant curriculum, educators also enhance the quality of the educational experience provided to the students by utilizing technology in their teaching. Technology provides educators with access to digital resources, simulation-based learning tools, analytical tools, and virtual collaboration tools which collectively create a richer and more interactive learning experience for the students.

Additionally, the COVID-19 pandemic has created an opportunity for many educators to utilize technology in their teaching and those that were able to adapt and effectively utilize technology in their teaching have significantly increased the quality of the management education experience. Finally, another aspect of educational quality is student engagement. Educators who possess strong interpersonal skills create a positive learning environment and are capable of providing individualized support to the students through mentoring and fostering curiosity among the students.

These factors help to create a culture of active and collaborative learning, necessary for management students to learn and practice leadership and team-building skills.

This research shows that quality is a mediating factor between educator competency and employability. When educators use their competency effectively, the students receive high quality instruction, relevant content, and quality mentorship; this enables the students to develop the skills that employers value. Therefore, improving educator competency is a strategic method for institutions to improve both the quality of education and the quality of employment outcomes for their graduates.

10. CONCLUSION

The researcher developed a comprehensive empirical model to identify educator competencies for Indian management education, and to examine how these competencies affect the quality of education and the job prospects for students. The model introduces a totally new competence factor- Digital & Technology-Integrated Teaching Competence — that expands upon traditional views of what makes an educator successful, and is thus highly relevant to the rapid changes happening both in business and in higher education today.

Using data collected through surveys of 560 MBA students and 172 faculty members at 13 different Indian institutions, the research shows that educator competencies are multi-dimensional; they are also significantly predictive of important academic outcomes. Together, the five educator competency factors (Pedagogical Expertise, Professional Development Orientation, Interpersonal Effectiveness, Industry Engagement Competence, and Digital & Technology-Integrated Teaching Competence) create the quality of management education, which positively affects student job opportunities, and mediates the relationship between educator competencies and graduate job opportunities.

Overall, the research shows that Indian management education institutions have a pressing need to implement competency-based systems for faculty development and assessment. Moreover, the empirically validated measurement system utilized in this research could serve as a useful tool for institutions to continue assessing and improving their educational programs. Finally, for policymakers and accrediting agencies, the validated system could serve as a useful guide for establishing national standards or guidelines that emphasize educator competencies, digital preparedness, and industry-engaged teaching as critical components of high-quality management education.

Overall, the educator competencies identified in this research represent a powerful mechanism to enhance the quality of management education in India. By enhancing the competences of faculties across the pedagogical, interpersonal, professional, industry-related, and technological domains of competence, institutions can create rich and varied learning environments that foster critical thinking, practical skills, and digital literacy and ultimately produce employable graduates. As management education continues to evolve with regard to the incorporation of digital pedagogy and industry partnerships into instructional practices, the maintenance of relevance and competitive advantage in the global education market will depend heavily on the use of such instructional approaches. The empirical validation of the results of this research provide a timely and solid basis for future enhancements to Indian management education.

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APPENDIX

TABLE A.1- Inter-Construct Correlations and Discriminant Validity

Construct	PE	PDO	IE	IEC	DTITC	QME	EMP
PE	**0.82**						
PDO	0.63	**0.76**					
IE	0.58	0.55	**0.84**				
IEC	0.61	0.57	0.60	**0.79**			
DTITC	0.59	0.54	0.56	0.62	**0.82**		
QME	0.65	0.60	0.63	0.67	0.64	**0.77**	
EMP	0.52	0.49	0.54	0.57	0.53	0.59	**0.77**

TABLE A.2- Structural Path Estimates and Hypothesis Testing

Hypothesis	Path	Standardized β	p-value	Result
H1	EC → QME	0.61	< 0.001	Supported
H2	EC → EMP	0.46	< 0.001	Supported
H3	QME → EMP	0.35	< 0.001	Supported

TABLE A.3- Mediation Analysis: Indirect Effect of Educator Competencies on Employability via QME

Effect Type	Standardized Effect	95% CI (Lower, Upper)	p-value
Direct Effect (EC → EMP)	0.46	—	< 0.001
Indirect Effect (EC → QME → EMP)	0.21	[0.09, 0.33]	0.002
Total Effect (EC → EMP)	0.67	—	< 0.001