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The Mediating Role of Industry-Academia Collaboration in Enhancing Skill Development for Supply Chain Management in Central Asia and Pakistan

Dr. Junaid Athar Khan
Assistant Professor, IBL, SRH Campus Pabbi. junain@awkum.edu.pk
Abdul Aziz
MPhil Scholar, Department of Management Sciences, Islamia College Peshawar abdulaziz1708982@gmail.com
Faiza Faiz Malik
Lecturer, Abdul Wali Khan University Mardan. Email: faiza.malik31@yaloo.com
Dr. Azhar Khan
Professor, Institute of Social Policy and Research, Peshawar. Corresponding Author Email: azhar5896081@gmail.com http://orcid.org/0000-0001-6616-0662

Abstract

The present research will propose an evaluation of whether or not collaboration between industry and academia acts as a mediator in the Central Asia and Pakistan's context of adopting Skills Development for Supply Chain Management (SCM) practices. This study will be primarily based on the Supply Chain Operations Reference (SCOR) model. This research will focus on the interplay of the industry's participation with curriculum maturity, investment in educational materials, and actual practices. It will be conducted within a certain framework that encourages the overt interplay among the effectiveness and efficiency of these elements in transforming skills. This study aims to be quantitative by collecting primary data through questionnaires from students, faculty, and industry stakeholders involved in SCM. The sampling approach will utilize stratified random sampling to achieve a sample size of around 300 participants. Data collected will be processed through the statistical tool SPSS or AMOS for detailed analysis on the proposed hypothesis. Based on the defined scope, this research will undoubtedly illuminate pathways toward actionable recommendations aimed at educational institutions concerning the enhancement of linkages to industry practices, thus fostering improved educational practices and policies. This study's purpose in aligning industry requirements with education is to address graduate skill deficiencies and increase overall value in the economy. Future work is planned to specifically include industry-academic collaboration in a longitudinal prospective research design; gap analysis for specific sectors in the SC paradigm; and infusion of the latest technological developments with teaching curricula. These efforts will also aim to develop more comprehensive SCM educational reforms that enhance the systematic relations between the nation's education and its industries.

Keywords: Industry-academia collaboration, curriculum relevance, investment in educational resources, access to practical experience, skill development, supply chain management, Central Asia, Pakistan

Background Information

Like other fields, central Asia and Pakistan also need developments in Supply chain management considering their strategic geographical prominence. Also, this area serves as a gap for trade and logistics. The advancements in globalization tend to make the supply chain more intricate. This increases the need of professional workers qualified enough to handle the sophisticated logistics and technology. Nevertheless, many countries in central asia are

struggling to develop the requisite skilled manpower. The gap between the needs of industry and the skills possessed by graduates is continually increasing and that significantly impedes economic advancement and competitiveness.

New research highlights the importance of supply chain management for holistic economic growth for central Asia. CAREC program, for instance, showcases that trade facilitation and logistics need to be improved to strengthen regional economy cohesion (ADB, 2023). The supply chains need to be strengthened as these countries attempt to diversify their economies and reduce reliance on conventional industries. These are the reasons why these emerging workforce skills need to be taught onshore from current educational systems.

Like the rest of the world, educational institutions in Central Asia are often criticized for their curriculums that have not kept up with modern instruction techniques and that do not reflect trends in the SCM industry. A few of the universities offer supply chain management and logistics courses; however, these courses tend to lack practical training and incorporation of modern technologies such as blockchain, AI, and data analytics. Therefore, graduates are unprepared both in terms of experience and advanced technological skills for employment in the contemporary SCM landscape (Raza & Khan, 2023). This disconnect not only limits the employability of graduates, but also profoundly impacts the overall region's supply chains competitiveness and efficiency.

Additionally, the skills gap is compounded due to lack of collaboration between industry players and educational institutions. Companies often raise the issue of struggling to find SCM professionals with the requisite skill set. Due to these shortages, an increasing number of firms are resorting to overseas talent (Yusuf & Ali, 2023).

This lack of collaboration between business and academia indicates the need for stronger partnerships focused on developing relevant curricula and practical training for students. Effective collaboration can address the principles of SCM, preparing students for the practical challenges they are likely to face in professionally. This blend of business and education is gaining traction as an urgent avenue to mitigate the skills imbalance in SCM. Partnerships between businesses and universities may include collaborative works such as research endeavors, internships, and guest appearances by industry professionals. These partnerships not only enhance the relevancy of academic programs, but also provide students invaluable networking opportunities and practical experiences (Fatima & Bukhari, 2023). Moreover, active participation from the industry in the creation of educational programs

ensures that these curricula foster relevant skills and knowledge necessary in the current job market, thereby improving the employability of graduates.

Formally communicating, solving problems, and working in teams are considered soft skills and play just as important of a role in the field of Supply Chain Management (SCM) as technical skills. The significance of soft skills should not be underestimated. Skills obtained from industry partnership programs that provide students with opportunities to work in professional settings tend to be the most useful (Hussain & Iqbal, 2023). These partnership programs unite students and experts from different fields and help them learn important skills that improves productivity and flexibility for graduates. PPPs, or public-private partnerships, have proven to be reliable in the formation of teaching materials for counseling sessions that focus on SCM. These partnerships allow for the combination of resources from different industries, making them more responsive to shifts in market demands for the resources that are needed and in what form the training materials will be designed.

For example, Ahmed and Zafar (2023) suggest using these public-private partnership approaches for establishing a training center that specializes in SC analytics, as well as other SCM branches, such as logistics management. There is positive evidence that relationships between industry and academia help with the employment prospects of graduates. These relationships tend to lead to targeted training in areas of specific skill gaps, improve the allocation of resources, and enhance the overall effectiveness of training programs.

Participating in industry projects and internships contributes significantly to the likelihood of students getting a job in their area of specialization and improving their overall satisfaction (Rahman et al., 2023). This highlights the incorporation of academic work integrated learning as it promotes real world challenge resolution that students are likely to encounter in the workplace.

Additionally, there is an ever growing need to equip professionals with Supply Chain Management (SCM) skills in order to sustain their relevancy throughout their careers and specialized postgraduate SCM training. The rapidly advancing technology necessitates the continuous education of professionals throughout their careers in order to sustain relevance in their roles. This can be done through collaboration between industry and academia in support of sustained professional development such as workshops and other training courses tailored to the emerging trends of supply chain management (Siddique, 2022). Such a strategy will improve the region’s competitiveness and skill base by cultivating a culture of lifelong

learning.

Problem Statement

The SCM (supply chain management) industry within Pakistan is currently going through serious challenges which are hindering its impact and effectiveness on the modern world. SCM is a weak link in Pakistan's economy because of the absence of an industry combined with an outdated educational system, industry-academia partnerships, and investments in modern technologies. This study aims to identify the shortcomings of SCM education and practice in Pakistan by drawing parallels with other countries that have developed successful models.

Countries globally have successfully aligned educational frameworks to suit the industry's requirements like the US and Germany have done for decades, and even more recently, in regard to Supply Chain Management. A prime illustration is the dual training system of Germany where students undergo both theoretical schooling and practical training within businesses.

This model's intention was that at the end of their studies, students would not only possess pertinent skills but also the ability to seek employment. A real world example of this comes from Germany where employers are able to identify candidates who are genuinely suitable for their needs due to having non-academic based experience integrated into their education, and this has dramatically reduced unemployment rates among German graduates (Benedetti & Torkomian, 2021). Similarly, large U.S. corporations have partnered with American Universities to design SCM programs for their universities that fit modern business needs.

For instance, the University of Michigan collaborates with corporations such as Ford and General Motors to develop activities like internships and cooperative research programs which provide valuable information and networking potential to students (Cunningham & Link, 2021). In contrast, Pakistan's educational institutions often lag behind in providing modern SCM associated curricula incorporating the latest trends and technologies. A number of universities and colleges continue with outdated methods of instruction and materials making it impossible for students to cope with the realities of the contemporary supply chain space. This gap between education and industry not only leads to unemployment, but leaves the workforce devoid of essential training and experience (Khan et al., 2024). There is often an outcry about the skills gap, with companies citing the inability to fill SCM positions with

appropriate candidates as a frequent complaint (Ali & Zafar, 2025).

Pakistan's lack of collaboration between educational institutions and industry stakeholders further contributes to the skills gap. Unlike Singapore, which has implemented national policies like SkillsFuture that champion lifelong education to align learning with industry needs, Pakistan lacks comparable frameworks.

There is a difference between the real-world and theoretical framework which could be bridged through internships, collaborative research projects, and guest lectures, all of which are more challenging due to the lack of formal alliances between industries and universities (Lim & Tan, 2022). This gap, in addition to having an impact on the quality of education, stifles the overall advancement of the SCM industry in Pakistan.

Pakistan also lacks focus in this important area: the educational resource investment. The restricted funding available to institutions curtails any potential for investing in faculty restructuring, program upgrading, and technological innovation. Conversely, there is China which has devoted enormous resources to develop a workforce through implementing university and state-owned enterprise alliances, identifying industrial issues and focusing on R&D (Zhang & Li, 2023).

With this approach, China has successfully nurtured a skilled workforce capable of responding to the demands of a rapidly evolving global economy. Cultural attitudes towards technical education and vocational training greatly hinders the development of SCM capabilities in Pakistan. Students are not motivated to take up positions in supply chain management because there is a heavy bias towards academic qualifications as opposed to practical skills.

Along with changing the industry's talent supply, this cultural prejudice sustains the skills gap (Hussain and Malik, 2025).

Gap Analysis

The analysis of gaps in the context of SCM education in Pakistan can be classified under ‘literature gap’, ‘methodological gap’, ‘empirical gap’, and ‘knowledge gap’ as the primary categories. All of these gaps reveal certain deficiencies in the SCM training and education research and teaching practices that require correction for more effective SCM training and education pedagogy in SCM.

Literature Gap

This is the gap that pertains to the SCM education and industry alignment gap, which is not

well studied, is referred to as the literature gap. There is abundant research regarding SCM practices across the globe; however, there is a dearth of studies examining how educational institutions in Pakistan SCM's employability skills train their students psychosociology forSCM employment locally. Most available literature skips over details regarding SCM education in Pakistan in favor of more general issues like educational reforms or macroeconomic issues (Khan et al., 2024). This gap indicates that there is a need for focused studies to explore the specific SCM curriculum development challenges and collaborative partnership prospects in the Pakistani contexts.

Methodological Gap

This is the gap regarding research approaches and techniques used in the existing studies focusing on SCM education. Many scholars, particularly in Pakistan's context, SCM environment, might adopt a qualitative approach which, periphery, does not capture the full picture of the situation. To illustrate this point, deep qualitative interviews are insightful but they lack the statistical strength necessary to generalize SCM professionals or students beyond the ones studied, Ali and Zafar, 2025. Moreover, there is a clear deficiency in research undertaken through mixed methodologies—that is, combining both qualitative and quantitative approaches aimed at exploring the issues more deeply. To enable the development of comprehensive frameworks which can inform practice and policy in SCM education, this gap requires bridging.

The Gap in Empirical Data

This study empirical gap highlights a lack of literature where data-driven studies validating the effectiveness of the existing SCM teaching framework in Pakistan is scant. There seems to be a lack of objective research that validates graduates' claimed low employability preparedness. There is a gap around the number of studies that exist which quantitatively assess SCM graduates' competencies vis-a-vis employer expectations (Rahman and Iqbal, 2024). This gap illustrates the need for empirical studies measuring educational outcomes against industry benchmarks using, surveys, testing, and performance metrics. Such research would provide greater insight into the existing skills gap and necessary changes to the curriculum.

Knowledge Gap

The knowledge gap attends the difference between understanding and what is essential to improve SCM education in Pakistan. Educational entities really do not possess adequate

knowledge of the precise SCM competencies and skills requirements from SCM graduates. Moreover, there is a dearth of knowledge on educational best practices in SCM from other countries that can be adapted to Pakistan (Benedetti & Torkomian, 2021). That particular gap urges the need of carrying out thorough research that aims not only to define the SCM competencies needed by the sector, but also to study practical educational innovations from other regions that can be molded to Pakistan's context.

Aim of the Study

The aim of this study is to understand how industrial and academic collaboration can enable SCM graduates from Pakistan and Central Asia to develop relevant supply chain management skills. The focus of this study is to determine how SCM education is enhanced through purposeful collaborations between academic and industrial stakeholders.

Main Objectives

To Assess the Effect of Curriculum Relevance

To Explore the Role of Funding Educational Materials

To Examine Acquiring Actual Work Experience

To evaluate the mediating role of Industry-Academia Collaboration in between exogenous and endogenous variables

Significance of the Study

Formally communicating, solving problems, and working in teams are considered soft skills and play just as important of a role in the field of Supply Chain Management (SCM) as technical skills. The significance of soft skills should not be underestimated. Skills obtained from industry partnership programs that provide students with opportunities to work in professional settings tend to be the most useful (Hussain & Iqbal, 2023). These partnership programs unite students and experts from different fields and help them learn important skills that improves productivity and flexibility for graduates. PPPs, or public-private partnerships, have proven to be reliable in the formation of teaching materials for counseling sessions that focus on SCM. These partnerships allow for the combination of resources from different industries, making them more responsive to shifts in market demands for the resources that are needed and in what form the training materials will be designed.

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Additionally, there is an ever growing need to equip professionals with Supply Chain Management (SCM) skills in order to sustain their relevancy throughout their careers and specialized postgraduate SCM training. The rapidly advancing technology necessitates the continuous education of professionals throughout their careers in order to sustain relevance in their roles. This can be done through collaboration between industry and academia in support of sustained professional development such as workshops and other training courses tailored to the emerging trends of supply chain management (Siddique, 2022). Such a strategy will improve the region's competitiveness and skill base by cultivating a culture of lifelong learning.

Literature Review

The importance of supply chain management (SCM) in developing and increasing the competitiveness of Pakistan and Central Asia is being appreciated now more than ever. Focused on providing these regions with SCM education, skilled SCM personnel can significantly drive economic growth. Centered on Central Asia and Pakistan, this literature review inspects how the cooperation between industry and academia, curriculum revision, educational funding, internships and experienced work placements, and the gaining of supply chain competencies interact.

Cooperation of Industry and Academics and Skills Development

SCM academia and SCM industries need to collaborate to bridge the gap between practical and theoretical SCM education. These collaborations foster the appropriate sharing of resources, skills, knowledge, and enhance learning for the students. Recent studies indicate that there is effective collaboration amongst educational institutions and employers which improves graduates' employability, readiness to work, and overall educational value (Khan et

al., 2024). In the context of Pakistan and Central Asia, these interdisciplinary partnerships have the potential to improve graduates' employability, particularly in the region's economically critical supply chain management and to improve highly responsive and adaptive regional labor markets.

H1: Industry-academy collaboration in Pakistan and Central Asia increases the region's supply chain management skills development.

Curriculum Relevance and Skill Development

In order to bolster the value of SCM skill acquisition, the curriculum development should focus on the integration of industry phenomena. The incorporation of case studies and modern practices, along with other technological inputs into the curriculum, enhances learning while equipping learners with skills needed to meet real world problems. Studies indicate that learners have a higher chance of acquiring skills that are valuable in the job market when their training is in sync with practical industry operations (Ali & Zafar, 2025). Many universities in Pakistan are revising their SCM course outlines to include global supply chain perspectives and trends and the pace of technological change. Such alignment captures the attention of students taking the course and helps those master fundamental concepts of SCM.

H2: Relevance in curriculum design enhances efficient skills acquisition for Supply Chain Management in Central Asia and Pakistan.

Investment in Educational Resources and Skill Development

The effectiveness of SCM pedagogy can be enhanced through augmenting the teaching infrastructure, technological integration, and professional development of educators. Survey findings suggest that there is a positive correlation between the budgetary expenditures on SCM programs and the skill level of graduates from those programs (Benedetti & Torkomian, 2021). In Central Asia, where educational resources are often limited, strategic funding aimed at improving outcomes can greatly enhance educational attainment and skill levels. Modern technologies and teaching methods, for instance, can dynamically alter the SCM learning environment to promote the higher order cognitive skills needed for SCM professionals, such as critical analysis and problem solving.

H3: There is an improvement in the level of supply chain management competencies among Pakistanis and Central Asians through investment in educational materials.

Access to Practical Experience and Skill Development

The development of SCM skills is dependent on real-world experiences gained from co-ops and internships. Students studying for SCM degrees know and apply their SCM theories in practice through exercises, which improves their understanding and skill levels. Studies show students engaging with practical work are more likely to acquire important skills necessary for their future jobs (Cunningham & Link, 2023). One identified factors hindering effective skills acquisition in SCM in Pakistan is the lack of formalized organized internship opportunities. Enhancing students‘exposure to real world experience enables them to compete more effectively in the job market.

H4: The effect of access to real-world experience on SCM skill development in Pakistan and Central Asia is positive.

Mediating Role of Industry-Academia Collaboration

It is expected that industry and academic collaboration on collaboration or partnership projects will mediate the connection between the dependent variable, ‘skill development,’ and independent variables, ‘access to real-world experience,’ ‘investment in educational resources,’ and ‘curriculum relevance.’ It has been suggested that educational institutions can achieve better results regarding the deployment of their skill development programs through collaboration (Khan et al., 2024). There is literature that supports the mediation effect such collaboration or teamwork could have towards creating a more skilled workforce. Most importantly, effective collaboration can facilitate innovation and knowledge transfer, thus ensuring educational practices are aligned with the needs of industry.

H5: The industry-academia linkage is postulated to mediate the relationships between curriculum relevance, investment in educational resources, access to real-world experience, and supply chain management skills in Pakistan and Central Asia.

Underpinning Theory

To address the challenges of supply chain management, many theories have been developed in the discipline of supply chain management (SCM), including the Supply Chain Operations Reference (SCOR) model which is widely used today. SCOR model is an initiative of the Supply Chain Council whose primary objective is to provide a holistic approach by merging diverse functionalities within the supply chain and offering best practices, procedures, and benchmarks for the performance evaluation and enhancement (Supply Chain Council, 2024).

The SCOR model comprises four levels. The foremost level, referred to as strategic, centers

on KPIs along with goals and objectives of a supply chain. Initiatives and actions targeting these strategies are implemented on the second level, tactical, which focuses on the actual optimization of the supply chain network and inventory management. Level three is operational, where the day-to-day functioning of supply chain activities is managed, ensuring performance and efficiency. The last level, Detailed, focuses on the continual enhancement of processes through task fragmentation (Supply Chain Council, 2024).

Enablement, Return, Deliver, Make, Source, and Plan are the six distinctive categories that set the SCOR model apart, and in contrast to other models, serve as main processes. Everything from demand and supply planning to resource balancing falls under the category Plan. The cited reference deals with the management of suppliers and material procurement. Make focus on all activities directly related to production, including scheduling and quality control. Deliver includes order management, logistics, and other activities required to ensure prompt delivery. Return concerns the processes for managing returns and reverse logistics while Enable represents supporting activities that aid core processes, such as risk management and quality assurance (Supply Chain Council 2024).

SCOR model applicability has evolved significantly since its inception in 1996 due to adoption of Omni-channel approaches, integration of blockchain technology, and other emerging issues. Its lasting evolution shows the model's importance for supply chain optimization, underscoring the need for businesses to enhance their operations in today’s competitive global environment (Cohen & Roussat 2024).

Theory in Practice

Implementation of the SCOR Model Plan: Demand and supply each have a role to play within the SCM model, and as such the SCM model has a planning phase, which includes the planning stage. In planning stage, SCM curriculum relevance should be ensured by planning educational programs which satisfy the present and future needs of the SCM industry. Feedback from the market and industry can help place SCM issues into the classroom problem domain.

Source: The suppliers management and procurement are the core areas dealt with in this phase. In this case, accessing funding for teaching materials as lecture books is considered relevant for the SCM pedagogy because SCM educational materials such as textbooks cannot be provided without funding. Providing funding for the physical infrastructure, the technological infrastructure, and the staffing through training makes enhanced teaching

infrastructure and enhancing the educational experience for the students who is in need the skills relevant to the market.

Make: The make span includes production and quality checks. Here, possessing relevant experience stands out as a key requirement. Schools can ensure that learners are being taught and are mastering hands on concepts by actively including students in the teaching activities through internships, cooperative education programs and project work. Such exposure will equip learners with relevant skills.

Deliver*:* This process includes order delivery and logistics.

The present research indicates that collaboration between industry and academia supports the flow of resources and knowledge as a bound channel. Effective collaboration enhances the educational experience and ensures that graduates are employable.

Return: The return phase concentrates on reverse logistics and return management. More broadly, other educational institutions may gather information about the nature and effectiveness of their programs through feedback from industry stakeholders concerning the employability of graduates. This feedback loop is valuable for advancing developmental evolution and serves the primary aim of SCM skill enhancement.

Enable: Related process improvement and risk management also belong to this category. The quality of SCM education is what enables the current study. Institutions tend to improve overall efficiency in providing relevant and applicable SCM training to students by focusing on better teaching.

Proposed Research Methodology

Design-of-Research

The primary aim of this quantitative study is to comprehend how supply chain management (SCM) skill development in Pakistan and Central Asia relates to collaboration between industry and academia, curriculum alignment, investment in educational resources, and the availability of hands-on experience. The participants' primary data will be collected through self-administered questionnaires.

The Intended Population

The focus population for the study includes students, educators, and business people involved in teaching and practicing SCM within Pakistan and Central Asia. This group was chosen to ensure adequate understanding of the interconnections between academic institutions and industry players which are vital for SCM skills development.

Students: This includes prospective and final year undergraduate and graduate students in SCM programs offered in universities across Pakistan and Central Asia.

Faculty members: This consists of lecturers and professors who teach SCM courses at colleges and universities in the region.

Industry Professionals: This includes SCM professionals who provide educational insights on current and emerging industry standards, such as managerial and executive personnel from allied industries.

Sampling Method and Sample Size

In order to guarantee that each segment of the target population is adequately represented, a stratified random sampling method will be employed. The sample will consist of approximately 300-350 respondents from various universities in Pakistan and Central Asia.

Based on Sekaran (2016), this sample size is regarded sufficient to guarantee validity and reliability of the outcomes, particularly when estimating the statistical parameters of the analysis.

Collection of Data

The primary data will be collected through administering structured questionnaires both physically and virtually. The questionnaire is designed to capture important variables in the study.

Collaboration between Industry and Education: These questions will capture the nature and level of the collaboration which exists between the academic institutions and their business partners.

Relevance of Curriculum: Some items will gauge the extent to which the curriculum is responsive to the needs of the industry.

Attitude towards Educational Resource Investment: The aim of these questions is to capture the attitudes of respondents towards the investments made in education with regard to SCM.

Opportunities for Practical Exposure: These items will measure the extent to which students have access to practical work experience and other forms of learning.

Perception of Skill Acquisition: Respondents will be asked about their perceptions of the skills they acquire upon graduation.

Analysis of Data

The data collected will be analyzed using statistical packages such as SPSS or AMOS.

Descriptive statistics will summarize the characteristics of the sample while inferential statistics, which include regression analysis, will test the formulated hypotheses on the relationship between the variables.

Ethics to be Considered

All participants will provide informed consent which means that they fully understand the study purpose and their right to withdraw from participating at any time. Confidentiality will be maintained for the duration of the research project.

Conclusion-of-the-Study

The undertaking of this study aimed to investigate the role of industry-academia cooperation in the development of supply chain management (SCM) skills in Pakistan and Central Asia. The research attempted to address the relations between educational industry partnerships, curricula relevance, educational resource investment, and experience availability to formulate the problem of SCM education in these regions.

In attempts to achieve this goal a model was built which involves multiple hypotheses concerning the relationships among the relevant variables. The cooperation between academic institutions and industry is explored in terms of the positive impacts it has on skills development, focusing on the relevance of the curriculum, sponsorship, and experience supporting work exposure.

The methodology detailed above is mostly quantitative, involving the collection of primary data through a more structured approach using a questionnaire. The respondents include those who are students, teachers, and other professionals who are actively participating in SCM teaching and learning in Pakistan and Central Asia. Stratified random sampling will yield about 300 respondents which will be more than adequate for analysis, thus ensuring dependable outcomes and comprehensive analysis.

The hypotheses will be tested in SCM education offering further building blocks of relationships which will deepen understanding of existing literature. The purpose of this study is to testify the hypotheses along with providing reasonable rationales for educational practice and policy development. The results will improve understanding about the impact of the collaboration between industry and academia on skills development and on the economic development and competitiveness of Pakistan and Central Asia within the context of global supply chains. This particular field of study needs to be looked at closely to validate the proposed model and develop strategies for reforming SCM education.

Implications of the Study

The findings of the research regarding the mediating role of cooperation between industry and academia in the enhancement of supply chain management (SCM) competencies in Pakistan and Central Asia is likely to be of great importance to many groups such as higher learning institutions, policymakers, and professional practitioners.

Refinement of Educational Methods: This study reiterates the need for academic institutions to design curricula that incorporate the contemporary practices of relevant industries. Through partnerships with industry stakeholders, universities can ensure that their curricula are up-to-date and equip learners with relevant skills needed in the marketplace. This synergy will, therefore, enhance the employability of graduates and their preparedness to SCM positions (Khan et al., 2024).

Policy Formulation: Policy makers can make more informed decisions using the findings of this study to design strategies that foster industry-academia linkages. Governments can enhance the quality of SCM education and skills training within the region by fostering partnerships through funding collaborative projects or research initiatives. This approach will, therefore, promote sustained economic development within the region by creating a ready supply of skilled personnel who meet the needs of the industry (Ali & Zafar, 2025).

Investments on Materials: The data suggests that providing SCM education that is effective requires more funding to be directed towards instructional materials.

Investment in faculty development programs, teaching technology, and modern instructional materials needs to be a focal concern for institutions. This investment, as claimed by Khan et al. (2024), helps enhance the educational process and equips students with skills relevant to their fields of employment.

Attention to Co-op and Internship Experiences: The study stresses the importance of providing students with access to co-ops and internships as a practical learning component. For SCM students, these experiences can be structured within the curriculum, allowing educational institutions to support active learning that fosters role-specific skills (Ali & Zafar, 2025). Such practical exposure has the potential to enhance students' self-efficacy and preparedness for work.

Prospects-for-the-Future

Subsequent investigation can focus on longitudinal research to evaluate the sustained impacts of industry-academia collaboration on the skill acquisition and career progression of SCM

graduates. This approach would provide greater insight into how such partnerships impact employability over time.

From a sectorial perspective, studying industry-academia collaboration in specific SCM areas such as manufacturing, procurement, or logistics may yield relevant insights. Each sector has unique needs and problems that can inform particularized educational approaches.

Comparative Studies: Examining other regions such as Central Asia and Pakistan which have well-established SCM programs may aid in identifying useful practices. This type of analysis could highlight applicable strategies for curriculum design and collaborative partnerships that can be adapted for local contexts.

Research incorporating new technologies such as blockchain and artificial intelligence will be particularly relevant for SCM instruction. Understanding how these technologies can be applied to courses and work experiences will be crucial for preparing students to step into future industry roles. Future research may focus on the perspectives of various stakeholders involved in SCM education, including employers, teachers, students, and industry professionals. This multidimensional method would also assist in crafting more effective teamwork strategies and would offer a comprehensive understanding of the dynamics involved.

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