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Evaluating the Mediating Role of Human Capital Development in the Relationship between Vocational and Technical Education and the Empowerment of the Accounting Profession

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Abstract

Vocational and technical education prepares future professionals for a changing job market. In accounting, it is essential to equip students with practical, analytical, and ethical skills that align with professional standards. Vocational and technical education often remains too theoretical, limiting its ability to prepare future accounting professionals with the essential skills they need. There is a gap in mechanisms to attract and retain talent, hindering the modernization of the profession. Emotional intelligence, crucial for relationships, communication, and resilience, is often overlooked in training, weakening professional empowerment. This study examines the influence of technical education on the empowerment of accounting professionals by exploring the mediating role of human capital development through three key dimensions: training and development, talent attraction, and emotional intelligence. A questionnaire was used to collect data from a group of teaching accounting professionals as part of a quantitative approach. Principal component analysis and structural equation modeling were the primary statistical tools employed. A sample of 294 individuals was randomly drawn from vocational institutions in Akkar, North Lebanon. The results from the structural equation model indicate that technical education has a direct and significant impact on empowerment. This effect is considerably reinforced by the interaction between emotional intelligence and talent attraction, followed by training and development. These results confirmed that technical skills, coupled with Emotional intelligence, catalyze professionals to translate competencies into empowerment. Empowering the accounting profession requires a blend of technical education and human skills. Attracting talented students and incorporating behavioral skills into curricula enhances technical knowledge.

Keywords: Behavioral Skills, Competencies, Emotional Intelligence, Empowerment, Talent Attraction.

Introduction

Education is a major societal agent of growth and communal development, transferring knowledge and developing human capital. In essence, vocational and technical educations are crucial to a country's development, as they equip workers with the skills and abilities necessary for key tasks (1). People worldwide recognize the importance of vocational and technical education in instruction and human capital development. Vocational education equips students with practical skills to prepare them for the workforce. Its effective execution is directly proportional to a country's industrial growth (2). The execution of technical education relies on teachers' education and experience in the field. Professional teaching accountants are responsible for advancing students' skills by developing innovative lesson plans and enhancing their expertise (3). These accountants' help students gain accounting knowledge and empower them for future careers. Accounting teachers should not only teach accounting students how to learn but also how to apply their knowledge to their work. Indeed, developing learning skills is essential, given the need for continuous updating in light of the rapid evolution of knowledge and market expectations for accountants' skills (4). In this context, research has noted that accounting education programs prepare future professionals to take charge of their own training and aim to teach them how to learn effectively (5). "Learning to learn" involves developing students' motivation and ability to

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continue learning outside educational institutions. Past studies have shown that a positive attitude and self-learning skills facilitate professionals' tasks in continuing education (6). However, the education system in developed countries tends to focus on extensive theoretical knowledge while neglecting practical skills and talents (7). Curricula are not regularly updated to include technological innovations, regulatory changes, and current accounting practices. A gap exists between technical education and professional development programs. The lack of practical training opportunities, such as internships, weakens their professional integration and workplace independence. This gap results in a decline in graduates' competitiveness. Additionally, the lack of effective collaboration among institutes, companies, and regulatory bodies restricts opportunities for cooperation. This impedes the adaptation of teaching to organizational realities and diminishes the training's impact on truly empowering accountants (4-7).

Nevertheless, the accounting profession is under pressure to change due to rapid technological advancements. Under normal circumstances, the work of a professional accountant is challenging, with often tight deadlines, long working hours, and increasing expectations from stakeholders and regulators (8). These challenges are compounded in times of stress, whether due to a pandemic, a natural disaster, or other systemic or societal disruptions. Hence, organizations are becoming increasingly demanding and perceive accountants as actors capable of shaping the organizational structure in which they operate and enhancing their wealth (9). Consequently, leaders realize that HRM must fully fulfill its role in training, engaging, motivating, and empowering employees (10). Thus, this concern for human capital development remains a topical issue that arouses the interest of experts, academics, and practitioners in management science. The premise is that human capital acquired through education and training would enhance it, ultimately enabling employees to attain higher-paying roles (11). The central notion is that any initiative by management to develop human resources represents an investment in human capital that, from an economic standpoint, produces beneficial returns for both the employer and the employee (12). The scientific community concurs with this conclusion, prompting several inquiries into the role of human resources (HR) practices in the development of human capital (13). Consequently, a sustainable competitive advantage is fundamentally anchored in human resources, underscoring the significance of Human Capital, which forms the foundation for empowering the accounting profession.

Accounting is a profession in which individuals and teams work collaboratively. Recent studies have examined how the COVID-19 pandemic has impacted the profession's human element and behavior (14). Professional accountants world-wide generate billions of dollars in value for their organizations. They act ethically, using their technical skills, higher education, and training to strengthen organizational resilience and success (15). To maintain the profession’s relevance, it is essential to understand the connections among education, values, developmental factors, and work empowerment as predicted behavior (16).

Studies have highlighted the importance of employee empowerment in the service sector, emphasizing its potential to enhance an organization's ability to nurture, develop, and effectively utilize employees' skills (17). Empowerment depends on gaining specialized skills or recruiting talented graduates from vocational institutes (18). Results confirmed that the qualities of these fresh graduates have a significant impact on a company's performance, emphasizing the advantages of empowering employees (19). Empowerment programs enhance productivity, efficiency, and overall organizational performance while increasing employees' bargaining power as they acquire new skills and knowledge (20). Hence, employee empowerment is a critical issue in the 21st century, driven by rapid technological advances and a surge in knowledge, as well as a need for technical and vocational education (21).

Vocational and Technical Education

Technical education in accounting, tax, and technology, such as data analytics, enhances professionals' ability to make independent decisions (22, 23). As a result, developing technical and behavioral skills through targeted training boosts accountants' autonomy and confidence in their roles (24). Accountants in leadership roles are highly skilled technicians through technical training in accounting tasks; their managerial abilities are developed through on-the-job

experience. Accountants, depending on their professional path, employ leadership skills to develop human capital and empower their colleagues (11-13).

In the accounting field, advancing to management roles usually depends on a combination of technical skills acquired through specialized training and leadership abilities developed over time through professional experience (3). This progression emphasizes that training and skills are essential for career growth. Technical expertise, qualifications, and socio-emotional skills demonstrate professional readiness and reliability (6). Networking, the quality of interactions, and collaboration build trust, coordination, and access to resources. Standards, responsibilities, and recognition enhance autonomy and professional identity. Ultimately, showing these abilities depends on access to development, support, and independence. Career advancement for accountants relies on technical, interpersonal, and contextual skills, influencing their growth, influence, and team development (11, 12). Several theoretical perspectives underscore that an individual's capacity for action and skill mobilization principally hinges on the opportunities afforded by their professional environment. The capabilities approach highlights that access to training, pertinent resources, and supportive developmental conditions genuinely broaden the scope of professional actions (17-19). Social capital theory further complements this perspective by illustrating that relationships, communication, and trust within professional networks constitute essential resources for fostering learning, integration, and advancement. Additionally, professionalization theory focuses on the institutional and organizational mechanisms that enable professions to structure skill utilization, grant autonomy, and recognize professional value (20-22). Collectively, these perspectives affirm that the realization and performance of professionals depend on both the acquisition of technical and socio-emotional skills and an environment conducive to their development and recognition.

Human Capital Development

The human capital theory holds that training and education are pivotal for enhancing worker productivity and performance. Thus, social capital is the existing or potential resources associated with a persistent social network with institutionalized ties of mutual knowledge and appreciation, or, in other words, the sense of belonging to a group. Their research highlighted the influence of education and training on innovation and productivity (25). Research on the concept of human capital has raised questions about the return on investment in education for an individual (26). The importance of evaluating the return on investment in education was emphasized to identify the costs associated with training investments (27). Accordingly, the costs incurred encompass both tuition or training fees and the opportunity costs associated with engaging in such activities (28). Thus, by investing in education and training, individuals develop and enhance their "human capital," in this case, their skills and knowledge, empowering them to secure well-paid jobs (29). Since the labor market is central to economic reasoning about human capital, several economists in the field have advanced research demonstrating the close link between education level, human capital development, and empowerment (30). Research shows that higher levels of education, as measured by certifications, are often associated with higher salaries and a lower likelihood of unemployment. Human capital comprises talent attraction, Training and development, and emotional factors among the most interesting dimensions (31).

Attraction of Talent: Academic research often interprets talent in terms of two key metrics: abilities and experiences, focusing on individuals with exceptional potential. The first talent-attraction approach focuses on leveraging existing skills and knowledge (32). Providing competitive or above-market salary packages is the second approach (33). Furthermore, past research assessed the association between talent management practices and employee empowerment (34). Research has demonstrated that attracting and retaining talent enhances an organization's success (35). Organizations and collective investment schemes that approach their members, staff, and clients from this perspective are more successful in attracting, stimulating, and retaining talented accountants with unique skills, experiences, and aspirations throughout their careers (36).

Training and Development: Training and development are maintenance subsystems designed to

enhance organizational effectiveness by making behavior more routine and predictable (37). Training is a systematic approach to changing behavior, preparing an employee for a job, or enhancing their performance in the current role. Development, on the other hand, prepares an employee to improve their conceptual, decision-making, and interpersonal skills in complex, structured situations. Training and development leverage the capital available to the economy (38). It extends, within organizations, the process of enriching the stock of human capital undertaken by the education system. Initial training takes place in classrooms. Practical training uses informal learning methods, such as supervision or work on the production line (39).

Training and development, therefore, appear as key factors of economic competitiveness, as they meet the expectations of both companies (by adapting skills to needs) and employees (by promoting employability). Training is important for any form of organization, certainly, the need for training is more accentuated for organizations that integrate advanced technologies into their production process and which must face the lack of skills of their employees, however, this need also interests any head of organization (bankers, stockbrokers, financial analysts, Moreover, training and developing employees will make it possible to redefine the content of tasks and to assign employees to these modified positions (40). Only one general conclusion can be drawn from studies of this type: the larger the firm, the more it tends to invest in training its workers (37-41). Training is typically part of a comprehensive firm strategy, one of many approaches the knowledge-based firm adopts. Therefore, human capital developed at the firm level strengthens the firm's technological capacity. On the other hand, a company that recognizes the importance of workforce skills and focuses on developing innovative compensation programs also offers training (42).

Emotional Intelligence: Emotional intelligence encompasses "the ability to understand people" and refers to interpersonal and intrapersonal intelligence (43). Emotional intelligence is acknowledged as a significant form of social intelligence. This concept encompasses both cognitive and non-cognitive aspects (44). These investigations gave rise to the emotional intelligence perspective, which Salovey and Mayer defined as the ability to perceive, analyze, and control one's and others' moods and emotions (45).

Research on emotions in management sheds light on the relationships between emotional intelligence (EI), its associated skills, and performance. These advances are creating new bridges between disciplines, among other things, between emotional intelligence models in psychology and economic work on human resources, particularly human capital, of which emotional capital is an attempt to leverage empowerment (46). Goleman describes "emotional skills." The concept of "skills" in Goleman's model supports the notion of "competence," as a concept used in human resource economics. Emotional skills constitute a crucial resource for developing and optimizing human capital. These skills, also known as soft skills or interpersonal and intrapersonal behavioral skills extend beyond the traditional domains of knowledge, intellectual intelligence, and technical qualities and qualifications. These emotional skills are acquired and developed through classroom teaching and learning (47). Consequently, Emotional intelligence enhances professional communication, teamwork, and leadership, which are crucial in accounting roles (48). Gurus in leadership showed that transformational leaders foster a climate conducive to empowerment by inspiring, supporting, and valuing individual contributions (49). Environments that stimulate accounting creativity and problem-solving enhance perceptions of empowerment (50).

Empowerment of Accounting Professionals

Employee empowerment involves rewarding individual team members' efforts and successes to foster a successful team spirit, allowing employees to be self-directed and accountable for their roles (51). Employee empowerment has been characterized in various ways, including flexibility and allowing employees to make decisions and accept responsibility for their jobs (52). According to some researchers, employee empowerment enables employees to express ideas and opinions freely. Others define it as investing in resources to support employees and help them acquire the knowledge and skills necessary to perform their jobs effectively. Employee empowerment fosters

open communication among employees, managers, and other leaders. It is a question of creating an enabling work environment that values respect and honesty (53). Empowering staff through one-to-one coaching teaches employees to take ownership of their work, establish a feeling of independent responsibility, and exhibit ingenuity. The objective is to create an environment where people have the confidence to take responsibility for their roles and contribute significant improvements as a career advancement. It involves teaching employees how to address issues so they can independently find solutions and recognizing and rewarding them for their hard work and dedication (54).

Research shows employee empowerment builds trust, motivation, and involvement by giving workers decision-making authority. This helps employees feel motivated, dedicated, and fulfilled, enhancing their contribution to customer needs (19-21). It involves granting control over daily tasks. Empowerment is the process of regaining control over one's professional life by combining objective resources like position, income, and status with subjective ones like meaning, confidence, and mastery. Empowering leadership involves giving employees decision-making power, encouraging initiative and idea sharing, and job shaping, thereby boosting motivation and career control (31). Perceived employability serves as "mobility capital," and knowing one can find or keep a job increases security and freedom, which are positively linked to self-efficacy and satisfaction. Success indicators such as income, status, career progression, and access to management often come with greater influence and opportunities, fostering achievement and subjective control (38-40). A core aspect of empowerment is professional efficacy; high self-efficacy improves perceived employability, access to meaningful work, and satisfaction, as people feel capable of managing instability and advancing. These factors create a shared dynamic: more resources lead to viewing oneself as the author of one's journey, embodying empowerment.

Swift access to financial data through efficient information systems fosters empowerment. It improves responsiveness and decision-making (55). Besides, mastery of technological tools such as AI and block chain empowers accountants by enhancing their ability to make strategic decisions, thereby strengthening their autonomy (56). This study reveals that most accountants are aware of the opportunity automation presents and could capitalize on, enabling them to focus on their practices and clients (57).

Hypothesis Development

Human capital theory posits that investments in education, training, and skills development enhance individual productivity, creativity, and organizational value. Within this framework, the three mediating variables are talent attraction, training and development, and emotional intelligence. These dimensions are considered mechanisms through which vocational and technical education empowers the accounting profession. These dimensions help explain how well-structured education promotes the transmission of knowledge and create an environment conducive to the accountability and autonomy of accountants in the practice of their profession. Emotional capital influences the composition of human capital and the optimal utilization of individual and human capital. It has repercussions that are both personal (in terms of satisfaction, well-being, or better-being, fulfillment, satisfaction, and empowerment), social (social relationships and interactions, integration and social cohesion), and economic (individual on the constitution of human capital, productivity at work, and collective on performance and efficiency within organizations). Beyond human capital theory, three complementary theories enrich and strengthen the conceptual framework adopted in this study. First, the social capital theory highlights the importance of communication, collaboration, relationships, and empathy, with relational resources like networks and trust being essential for individual growth and success in professional environments. Second, the professionalization theory supports the study's focus on empowerment factors, including autonomy, recognition, decision-making, and skill development. These indicators demonstrate how a profession organizes itself, gains legitimacy, and establishes standards. Lastly, the capabilities approach provides an analytical framework to understand how training, skills development, and resources broaden people's opportunities for action. It emphasizes training, professional development, and skills development to build human capital. These theoretical perspectives

agree that training, skills, and professional interactions are crucial tools for improving individual performance, independence, and career growth. Therefore, developing human capital depends on a combination of technical, socio-emotional, and relational skills.

Based on the literature review, ten hypotheses are formulated, which subsequently constitute the conceptual framework of the study (Figure 1). It is posited that vocational and technical education significantly influences the empowerment of accounting professionals. This influence occurs both directly and indirectly through various developmental pathways. It is asserted that vocational and technical training enhances the empowerment of accounting professionals while simultaneously improving key intermediary variables such as talent attraction, opportunities for training and development, and emotional intelligence. These mediating factors are anticipated to augment professional outcomes, with increased talent attraction, more effective training systems, and elevated emotional intelligence all contributing positively to empowerment. Additionally, mediators transmit part of vocational and technical education's influence on empowerment, showing that educational quality improvements offer direct benefits and work through better talent pipelines, developmental experiences, and socio-emotional skills. The hypotheses predict significant direct and indirect effects linking education to accounting professionals' empowerment.

H1. Vocational and technical education has a significant statistical impact on empowering the accounting profession.
H2. Vocational and technical education has a significant statistical influence on attracting talent.
H3. Vocational and technical education has a significant statistical influence on Training and Development.
H4. Vocational and technical education has a significant statistical influence on Emotional Intelligence.
H5. The attraction of talent has a significant statistical impact on the empowerment of accounting professions.
H6. The attraction of talent significantly mediates the relationship between vocational and technical education and the empowerment of accounting professions.
H7. Training and Development have a significant statistical influence on empowering accounting professionals.
H8. Training and development significantly mediate the relationship between vocational and technical education and the empowerment of accounting professions.
H9. Emotional Intelligence has a significant statistical influence on the empowerment of accounting professionals.
H10. Emotional intelligence significantly mediates the relationship between vocational and technical education and the empowerment of accounting professions.

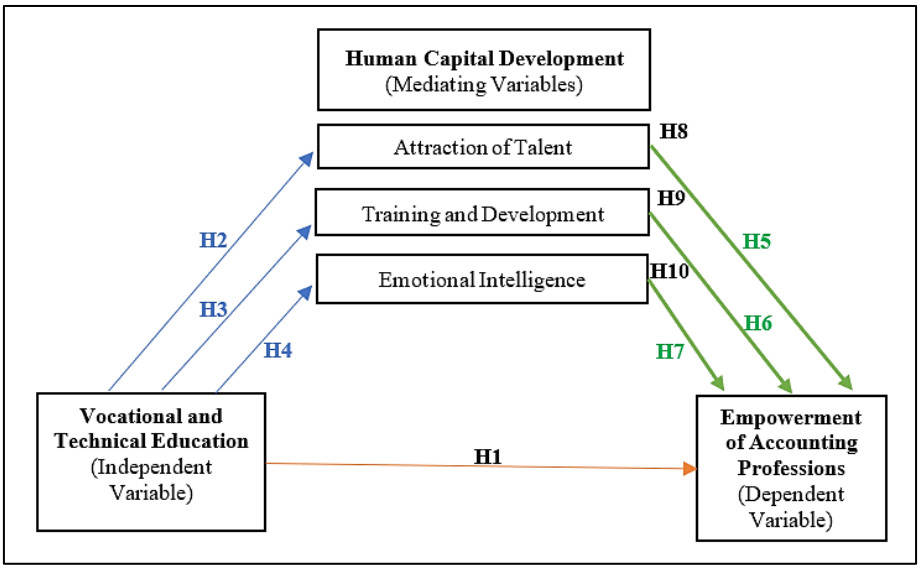

Figure 1: Conceptual Model Illustrating Variable Types

Figure 1 delineates the conceptual framework of the research, emphasizing the interconnections between vocational and technical education, facets of human capital development, and the empowerment of the accounting profession. The ten hypotheses are depicted through arrows, illustrating the direct and mediating relationships posited within the model.

The mission of human capital development and empowerment constitutes the main concern around which this research's problem is structured. The present study addresses the following questions: First, does vocational and technical education at Lebanese institutes influence human capital development and the empowerment of accounting professionals? Second, to what extent do human capital development dimensions, namely attracting talent, training and development, and emotional intelligence, mediate the relationship between vocational and technical education and the empowerment of accounting professionals?

The current study fills a gap in the existing knowledge. A literature gap has emerged due to limited research on this issue and the absence of studies specifically examining the link between these factors within the education sector, particularly in Lebanese vocational and technical institutions. Few studies focus on the attributes of firms that prioritize human capital development. Studies are based on employee surveys that sometimes collect data on a relatively small number of firm characteristics or include the characteristics of the economic activity in which the employee works. Thus, variables concerning the firm or the industry are limited in their scope.

The practical relevance of this topic is evident on several levels. First, it addresses the need to adapt professional and technical education to the real needs of organizations and financial markets. Second, the topic emphasizes the significant role of human capital as a mediator. By augmenting their capacity to attract talent, enhancing training programs, and integrating emotional intelligence into their curricula, educational institutions substantially elevate the probability of fostering autonomous accountants who can take initiative and actively contribute to organizational performance. Theoretically, this research advances the theory of human capital development and Social Cognitive Career and furthers the discussion regarding critical approaches to accounting.

Methodology

To meet the primary research objective of examining human capital and training, quantitative research was conducted, adopting a positivist philosophy that posits a pre-existing reality to be understood and interpreted. This study uses a quantitative approach to collect data to investigate the relationship between variables. The quantitative technique enables statistical evaluations, ensuring the collected data is measurable (58). As a result, a questionnaire was used as an instrument for this investigation. The data are collected using a structured questionnaire with a predefined list of questions. Data collection employed a purely quantitative approach, serving as the basis for validating hypotheses. A five-point Likert scale ranging from "strongly disagree" to "strongly agree" was used for this purpose.

Verified studies served as references for operationalizing the vocational and technical education variable (2, 14). They identified this variable as one-dimensional. The measurement scales for each are also drawn from the literature. The literature showed that human capital development is multidimensional, embracing diverse dimensions. Human capital theory posits that investments in education, training, and skills development enhance individual productivity, creativity, and organizational value. Within this framework, the three mediating variables are talent attraction, training and development, and emotional intelligence. These dimensions are considered mechanisms through which vocational and technical education empowers the accounting profession.

These are the attractions of talent, training, development, and emotional intelligence. To this end, these three dimensions are used to operationalize the Human Capital Development variable. Three studies were used for their measurement scales (27-29). Attraction of talent (5 items), training and development (5 items), and emotional intelligence (5 items). This totals fifteen (15) items. The empowerment scales were adopted from reliable studies (15-18).

Operationalization is a crucial step in the scientific approach, as it enables theoretical concepts to be translated into measurable indicators. In this

research, the variables studied are translated into concrete items. Operationalizing variables is essential for connecting abstract concepts to measurable data. Table 1 explains the operationalization of the variables, including their indicators and measurements. This process enables theoretical ideas to be converted into observable indicators, making them easier to measure and analyze statistically.

Table 1: Variables Operationalization Based on Indicators and Measurement

Variables	Operationalization	Measurement
Vocational and technical education (Independent Variable)	This variable is based on the concept of training-job fit theory, which proposes that the relevance and quality of training affect a person's job prospects and performance. The operationalization of this variable is based on ten items embracing indicators relating to accounting programs: Curriculum Updates Technical Advances Qualified Instructors Class Hours, organization Adapted Rooms Educational quality, relevance. Certification and degrees obtained.	Responses are gathered on a five-point Likert scale, from strongly disagree to strongly agree. Accountant teachers' Perceptions are quantified using a five-point Likert scale. The Likert scale facilitates respondents' comprehension, reduces response confusion, and allows for robust statistical analysis. This scale fosters consistency across various dimensions whilst facilitating comparability.
Attraction of Talent (Mediating Variables)	Talent attraction is measured by five items that highlight an organization's ability to attract qualified, skilled individuals. Major indicators include. Experienced Instructors Specialty Awareness Talent Development Quality Courses Communication/Sharing	
Training and Development (Mediating Variables)	Training and development reflect direct investment in increasing human capital. They are operationalized through items relating to the frequency, relevance, and quality of development programs. Five items are used to evaluate this dimension. The indicators highlight the alignment between training received and actual professional needs. Professional Skills Theoretical Courses Off-Campus Programs Academic Application Skills Building	
Emotional Intelligence (Mediating Variables)	Emotional intelligence is considered a component of human capital because it enhances interpersonal and socio-emotional skills that are essential to organizational success. It is assessed through indicators. Self-awareness, Emotion regulation, Empathy, Interpersonal relationships. Active Listening	
Empowerment of Accounting Professions (Dependent Variable)	This variable is measured based on six items. The operationalization is based on six items embedded within six indicators relating to: Autonomy, Clarity of Responsibilities Decision-making capacity, Independence in task performance, Strengthening of specialized skills, Professional recognition.	

Although human capital development is frequently assessed using objective indicators such as continuing professional development (CPD) hours, certifications, or skills tests, a considerable amount of empirical research prefers Likert-scale measures when direct field measurement proves impractical. In this study, human capital development is analyzed indirectly through three principal dimensions: (a) training and development, (b) talent attraction, and (c) emotional intelligence. These dimensions serve as vital levers for enhancing professionals' technical and socio-emotional skills. The indicators employed have been validated in the literature on human resource development and organizational development. They are grounded in well-established theoretical frameworks, including human capital theory and the capabilities approach. These theoretical foundations provide conceptual legitimacy to the selected measures and substantiate their relevance to the analysis.

Regarding empowerment, this study focuses on workplace professional empowerment rather than broader career outcomes such as professional status, advancement, income, or leadership roles. The selected indicators, including autonomy, clarity of responsibilities, decision-making capacity, independence in task execution, specialization, and professional recognition, illustrate how empowerment manifests in professional practices. These indicators align with theories of professionalization and workplace empowerment frameworks, thereby enabling the measurement of individuals' capacity to use their skills and assert themselves in their roles without requiring data on external career outcomes.

In Lebanon, the Directorate General of Vocational and Technical Education (DGVTE) of the Ministry of Education and Higher Education oversee the technical and vocational education (TVE) sector, which, like in many other countries, is run by both public and private institutions. The Ministry of Education and Higher Education (MEHE) oversees Lebanon's vocational and technical education and its educational structure (59). According to the Director General of Vocational and Technical Education, 170 specializations are offered at various educational levels, incorporating intermediate career education and professional supervising employment opportunities in Lebanon's technical and vocational higher education system (60). These courses are offered by 159 governmental organizations (61). A solicitation email was attached to the questionnaire to ensure anonymity and confidentiality in data processing. The objectives were mentioned, and the data and results were anonymized for all those who agreed to collaborate in this survey. The Research Ethics Committee (REC) statement confirms that this study, conducted by the authors affiliated with the university, was carried out in strict accordance with recognized ethical principles and scientific standards. Approval was issued by the University's Institutional Review Board (IRB), which operates under the authority and regulatory oversight of the relevant government agencies, thereby ensuring participant protection, data confidentiality, and informed consent.

The population comprises 103 vocational and technical colleges in the Akkar area of northern Lebanon. The sample is acquired using a random sampling method, ensuring that all institutions are included in the study. With a 5% margin of error, the predicted sample is 291 participants. The research population consisted of teaching accounting academics from the Akkar region and representatives of relevant entities.

The decision to focus on accounting educators is based on key reasons. The accounting sector offers clear career paths, from entry-level to executive roles, showing skill growth and progression. Accounting also plays a strategic role in policy and regulation through standards and financial oversight, emphasizing the need for structured, detail-oriented practice. Studying accounting professionals provides insights relevant to other fields requiring expertise, accountability, and continuous development. This focus combines practical importance, a defined professional framework, and potential broader theoretical contributions in analyzing relevant variables. The accounting profession features structured career progression, regulation, and diverse applications. It advances through stages requiring higher technical, ethical, and managerial skills. Training promotes career growth and autonomy. Accountants also shape public and organizational policies, affecting financial transparency, compliance, and stakeholder trust, which are key to governance. Due to its high specialization, responsibility, and ongoing learning, accounting

serves as a model for other regulated fields such as law, auditing, healthcare, and engineering, thereby expanding its scope and relevance.

Therefore, the sample included 294 teaching accountants.

$$n = \frac{N}{1+N^{e2}} = \frac{N}{1+N^{e2}} = 291 \pm 294 \text{ participants (minimum)}$$

Note: n = number of samples searched

N = population

e = margin sampling error (5%)

Given that this research aims to analyze the mediating role of human capital development in the relationship between vocational and technical education and the empowerment of the accounting profession, a series of tests was conducted as part of the data analysis. To this end, the principal component analysis and the structural equation method were used. This required us to use SPSS version 27 and AMOS software (version 25). Using these software programs ensures the construction's convergent validity. For data analysis, an exploratory analysis in SPSS and a confirmatory factor analysis in Amos were conducted before verifying the research hypotheses in Amos. Hypotheses are tested using the coefficients Estimate, Critical Ratio, and probability, which designate α, CR, and P-value in the regression weights (62).

Results and Discussion

The second section analyzes the collected data to confirm or reject the proposed hypotheses. Two data analysis techniques are used in this section: exploratory analysis and confirmatory analysis. The exploratory analysis presents the procedure used to obtain the results of the exploratory tests conducted to verify the data's reliability: first, the KMO index. Second, Cronbach's alpha coefficients are applied to all scales and all items. Quantitative research, conducted through principal components analysis, is necessary to purify the items, measure the variables, and determine the factorial structure. Items that did not provide the maximum amount of information were eliminated. To confirm the factorial structure identified in the exploratory phase, a confirmatory factor analysis was conducted. The CFA, therefore, enables the evaluation of the quality of the measurement model's adjustment for the variables in the exploratory analyses.

Exploratory factor analysis (EFA) reduces the number of items, retaining only those relevant, specifically those with a weight greater than 0.5. The internal validity and reliability of the variables' dimensions are measured using Cronbach's Alpha and KMO. Coefficients greater than or equal to 0.7 indicate good internal consistency for the measurement scales. To this end, after rotation, the "varimax" analysis reveals that all eighteen retained items from the literature have weights greater than 0.5. Additionally, the rotated component matrix confirms the presence of the four dimensions identified in the literature. These axes are named in order: Vocational and Technical Education, Human Capital Development (including Training and Development, Talent Attraction, and Emotional Intelligence), and Empowerment of Accounting Professionals.

Table 2: Convergent Validity Grounded on Principal Component Analysis for Retained Items

	Mean	Std.	FL	EX
Vocational and Technical Education (Q) **KMO= 0.794; TVE = 73%; "α" = 0.875**				
(Q3) The institute's management regularly updates accounting programs.	3.16	1.169	0.883	0.780
(Q5) The institution collaborates with the General Directorate of Vocational and Technical Education to provide training courses for accounting students, emphasizing the profession's importance.	2.98	1.302	0.865	0.747
(Q9) The institute's management sends teachers and students to accounting-related seminars and training courses.	3.05	1.346	0.843	0.711
(Q4) The Institute's management connects technical advancements with accounting programs.	3.24	1.201	0.828	0.685
Human Capital Development KMO= 0.851; TVE = 71%				
Training and Development (TR) KMO= 0.794; "α" = 0.851				
(TR3) Off-campus training programs provide students with experience in accounting firms and companies.	3.25	1.240	0.828	0.700
(TR4) The institute's administration enables students to apply academic principles in real-world settings	2.99	1.231	0.820	0.744
(TR1) The institute's administration prioritizes building essential skills for the accounting profession.	3.19	1.057	0.777	0.733
(TR5) The institute's administration helps students strengthen their accounting skills	3.11	1.211	0.710	0.678
Attraction of Talent (TA) KMO= 0.794; "α" = 0.823				
(TA4) Exemplary delivery of theoretical courses.	3.61	1.087	0.834	0.739
(TA3) Students learn the value of specialization in strengthening their academic and personal talents.	3.44	1.062	0.795	0.732
(TA5) Communication channels facilitate the sharing of accounting experiences and skills among teachers and students.	3.48	1.129	0.578	0.637
(TA1) To encourage students to specialize in accounting, the institute appoints experienced teachers.	3.45	1.178	0.564	0.639
Emotional Intelligence (EI) KMO= 0.794; "α" = 0.703				
(EI5) Students are urged to communicate openly with management in case of issues or obstacles.	3.82	1.197	0.882	0.805
(EI3) Students are taught to develop self-awareness and behave appropriately in diverse situations.	3.58	1.132	0.763	0.724
Empowerment of Accounting Professionals (EAP) KMO= 0.797; TVE = 66.5%; "α" = 0.832				
(EAP5) I clearly understand my job responsibilities and expectations.	3.81	1.012	0.868	0.754
(EAP1) I am regularly involved in the organization's strategic planning and decision-making processes.	3.90	1.060	0.836	0.699
(EAP4) My line manager encourages me to propose new ideas and take initiative.	3.72	.996	0.779	0.607
(EAP2) I benefit from ongoing training and professional development opportunities.	3.96	.982	0.776	0.602

Std. = Std. Deviation; FL = Factor loadings; EX = Extraction
KMO= Kayser Meyer Olkin; TVE = Total Variance Explained; "α" = Alpha Cronbach

Table 2 presents the convergent validity derived from the principal components analysis, highlighting the internal consistency of the selected items. The factor loadings confirm that each indicator makes a substantial contribution to assessing its corresponding latent construct. For the Vocational and technical education variable, measured by 10 items, six items have low-quality representation (factor loadings). Therefore, these items were eliminated. Three dimensions measure the Human Capital Development variable. The first dimension is represented by Training and Development, and the first item (TR2) was eliminated due to its poor representation. The other dimensions, Attraction of Talent and Emotional Intelligence, are measured by four items, which display acceptable representative-ness (greater than 0.5). From Table 1, it can be observed that the PCA results for each model variable indicate that the data are factorizable, as evidenced by the KMO value exceeding 0.5. The latent structure of each construct is unidimensional. The reliability test demonstrated that each construct in the conceptual model is

reliable and exhibits good internal consistency (Cronbach's α > 0.7). For the Empowerment of Accounting Professionals (EAP) variable, six items were eliminated due to their low factor loadings. Cronbach's alpha levels of 0.7 or above are considered appropriate. Cronbach's alpha scores differed between Training and Development (0.815) and Emotional Intelligence (0.703).

The indicator values were tested for validity. The indicators for each variable were checked to determine whether they had sufficient weight within the important range (loading > 0.3; $p < 0.01$) and whether the related AVE was equal to or greater than 0.5. The composite reliability (CR) exceeded 0.7, indicating the scale's components are consistent. The AVE values ranged from 0.936 to 0.965, exceeding the 0.5 cutoff. Therefore, it may be inferred that the model satisfies the convergence validity test. Table 3 presents the principal components factor analysis results with Varimax rotation, followed by a reliability test for each dimension obtained (63).

Table 3: Correlation Matrix and Tolerance Results of Technical Education, Human Capital Development Dimensions, and Empowerment

	QQ	TR	TA	EI	EAP	Tolerance	VIF
Q Vocational and Technical Education	1					0.263	0.796
TR Training and Development	0.835**	1				0.295	0.385
TA Attraction of Talent	0.656**	0.609**	1			0.455	1.196
EI Emotional Intelligence	0.467**	0.390**	0.589**	1		0.638	0.566
EAP Empowering Accounting Professions	0.457**	0.411**	0.853**	0.788**	1		

**. Correlation is significant at the 0.01 level (2-tailed).

Table 3 presents the correlation matrix and the results of the multicollinearity tests (tolerance and VIF) for the dimensions of technical education, human capital development, and empowerment. These results help us evaluate the strength of the relationships between the variables and confirm the absence of problematic multicollinearity. Table 3 highlights the collinearity results. Tolerance and VIF (Variance Inflation Factor) values diagnose multicollinearity. The VIFs are all less than 10, and the tolerances are greater than 0.1, indicating no major multicollinearity problem between the explanatory variables. Table 3 illustrates the significance and importance of the causal links in validating the research hypotheses of the overall model. The Pearson test tests the significance of these causal relationships. All correlations marked with a double asterisk (**) are significant at 0.01. This table validated a strong and statistically significant linear relationship between the variables. For example, the correlation between talent attraction and the empowerment of the accounting profession is very strong (r = 0.853), indicating that the two are strongly associated. Although their correlations are lower than those of TA, Training and Development (r = 0.411) and Emotional Intelligence (r = 0.788) remain statistically significant. Consequently, continuing education programs and the development of emotional skills are important levers for increasing empowerment. These tests enable the evaluation of structural equation models (SEM) and mediation analyses.

Table 4 presents the regression weights and estimates (β) and the validation of the research hypotheses for each structural model. The first model examined the direct hypothesis linking Vocational and technical education to the empowerment of accounting professions. The second model study examines the direct influence of Vocational and Technical Education on the dimensions of Human Capital Development. The last model examines the mediating role of these dimensions in the relationship between the previously cited variables. The critical ratio (CR) test yields a value exceeding the recommended threshold (1.96), a regression coefficient (0.08) greater than zero, and a significant probability at the 5% threshold. All p-values are less than 0.01, indicating that the observed relationships are statistically significant and unlikely to be due to chance. The structural model is statistically robust, and the hypotheses tested are supported.

Table 4: Regression Weights of Technical Education, Human Capital Development Dimensions, and Empowerment (Hypotheses Testing Results)

		Estimate	S.E.	C.R.	P	Hypotheses
Vocational and Technical Education	Empowering Accounting Professions	0.670	.045	10.497	0.00	H1. Supported
Vocational and Technical Education	Training and Development	0.821	.041	20.014	0.00	H3. Supported
Vocational and Technical Education	Attraction of Talent	0.860	.034	25.096	0.00	H2. Supported
Vocational and Technical Education	Emotional Intelligence	0.875	.037	23.881	0.00	H4. Supported
Training and Development	Empowering Accounting Professions	0.152	.049	3.134	.002	H7. Supported
Attraction of Talent	Empowering Accounting Professions	0.137	.053	2.584	.010	H5. Supported
Emotional Intelligence	Empowering Accounting Professions	0.201	.047	4.303	0.00	H9. Supported
Vocational and Technical Education X Training and Development	Empowering Accounting Professions	0.340	.008	9.295	0.00	H8. Supported
Vocational and Technical Education X Attraction of Talent	Empowering Accounting Professions	0.690	.008	8.458	0.00	H6. Supported
Vocational and Technical Education X Emotional Intelligence	Empowering Accounting Professions	0.810	.008	10.038	0.00	H10. Supported

Based on the observations in Table 4, all coefficients are statistically significant, confirming the validity of the structural model. Technical education has direct and indirect effects on empowerment through three mediators, thereby validating a partial mediation model. Each of the three dimensions of human capital also significantly impacts the empowerment of the accounting profession. Training and development have an effect of 0.152 ($p = 0.002$). Talent attraction has an effect of 0.137 ($p = 0.010$). Emotional intelligence has a significantly stronger effect, with a correlation coefficient of 0.201 ($p < 0.001$). These results demonstrate that human capital mediates the relationship between technical education and empowerment, acting as a transformative lever for the effects of education (20). Results validated that emotional intelligence stands out for its high weight (0.201) and strong mediating effect (0.810).

The first hypothesis, H1, states that vocational and technical education has a positive influence on the Empowerment of Accounting Professions (55). This hypothesis is confirmed, with a regression coefficient of 0.670 and a p-value of less than 0.001. This result corroborates past studies, who asserts that accounting professionals can take initiative, assume responsibility, and assert themselves in their professional environment (55). Similarly, the result aligns with articles that conclude similar findings, indicating that technical education has a direct impact on empowerment. This contributes to improving the retention rate and reducing turnover (18, 64).

Vocational and technical education has a significant statistical influence on attracting talent (H2, 0.860; $p < 0.001$), Training and Development (H3, 0.821; $p < 0.001$), and Emotional Intelligence (H4, 0.875; $p < 0.001$). The coefficient of talent attraction (0.860) indicates that high-quality technical education systems effectively attract students with high skill potential to pursue accounting careers (32-35). For training and development, the coefficient of 0.821 indicates that technical education has a strong positive effect on the implementation of continuing education and skills development programs. Therefore, structured and professionalized vocational education increases students' continuous development pathways and encourages more dynamic professional practices (37-39). Emotional intelligence is one of the most powerful effects models: technical education contributes to the development of emotional skills such as stress

management, empathy, and cooperation (0.875). These results demonstrate that technical education, incorporating transferable skills, significantly contributes to students' emotional development (64). They emphasize the importance of integrative teaching, which combines technical and human skills. In this perspective, the results align perfectly with those of past studies, which have consistently concluded that talent attraction, training, and development, and emotional intelligence are key measures of human capital development, autonomy, and motivational factors for the success of professional accountants (26, 29, 39).

The regression analysis indicates that the attraction of talent (H5, 0.137; $p = 0.010 < 0.05$), Training and Development (H7, 0.152; $p = 0.002 < 0.05$), and Emotional Intelligence (H9, 0.201; $p < 0.001$) have a significant statistical influence on empowering accounting professions. First, the relationship between talent attraction and empowerment (H5) suggests that talented individuals drawn to high-performance technical environments tend to be empowered in their accounting roles (34). Second, the relationship between Training and Development (H7) suggests that students granted access to practical training are more inclined to be autonomous and innovative in their work (2, 4, 17). Third, the pronounced effect of Emotional Intelligence on empowerment (H9) proves that developing self-awareness, interpersonal intelligence, and emotional management contributes to enhanced empowerment (50). These Coefficients, which are greater than 0.8, between technical education and the dimensions of human capital indicate a strong association. The result aligns with the conclusions of the discussed articles, which indicate that the content, method, and quality of education are significant predictors of human potential development (34, 30, 50).

As part of this research, a mediating hypothesis was formulated. This hypothesis stipulates that human capital development significantly mediates the relationship between vocational and technical education and the empowerment of accounting professions. This hypothesis is confirmed following the CFA processing of the three retained dimensions. First, attracting talent (H6, 0.690; $p < 0.001$) demonstrates a strong collaboration. The combined effect of technical education and talent attraction exceeds the sum of their individual effects. Hence, when technical education systems attract high-quality talent, the effect on empowerment becomes significantly greater (34, 36). This implies that the quality of human capital entering the accounting profession is essential to the valuation of technical skills. Second, training and development (H8, 0.340; $p < 0.001$) mediate the relationship, confirming the fundamental role of continuing education as a lever for expanding initial technical education. This means that the impact of technical education on empowerment is enhanced when training and development are well-integrated into a professional setting (64, 65). Third, the mediating effect of emotional intelligence (H10, 0.810; $p < 0.001$) is the strongest. This effect demonstrates that emotional intelligence serves as a catalyst, enhancing the return on investment from technical education. When technical education is combined with high emotional intelligence, empowerment reaches its maximum level. Therefore, technical skills and emotional intelligence, encompassing the ability to manage emotions, communicate effectively, and make decisions under pressure, transform competence into empowerment. The result aligns with the conclusions of published articles, which suggest that empowered employees' desire for autonomy and intention to improve their socio-economic life constitute reasons for pursuing vocational education, positively and significantly influencing their human capital development (46, 47).

Results reveal a clear pattern in which vocational and technical education directly empowers accounting professionals and, indirectly, through targeted development and improved human capital (11-13). This aligns with research emphasizing the role of educational systems in developing skills and agency. The combined effects of talent attraction, continued education, and emotional intelligence indicate that empowerment stems from both technical expertise and a blend of knowledge, personal qualities, and supportive environments. Several studies supporting the connection between educational quality, training participation, and the growth of human potential confirm this finding (18-21). However, the mediation results provide an important distinction compared to some previous research. Past studies have shown that the effectiveness of technical

education is highest when individuals are highly qualified, embedded in learning environments, and able to utilize socio-emotional skills (22, 23, 55, 57). In this context, the particularly strong influence of emotional intelligence extends existing research on the links among interpersonal skills, emotional regulation, and initiative. It demonstrates that these traits are vital drivers of empowerment.

Contribution and Limitations

This study contributes to an expanded theoretical model that integrates vocational education and human capital components to elucidate alterations in empowerment in the accounting sector. It demonstrates that empowerment includes technical skills and coherent human and emotional dimensions. The model reinforces human capital, talent management, and social cognitive career theory, particularly in emerging contexts such as Lebanon or during career transitions. This study builds upon existing theories of human capital and empowerment by demonstrating that vocational and technical education facilitates the development of human skills, which are essential prerequisites for empowerment. It confirms that modern educational approaches must go beyond the simple acquisition of know-how to integrate the holistic development of individuals within their professional environment.

The study recognizes the correlation between accounting empowerment and the benefits of attracting, training, and developing talent. Higher education institutions must adjust their strategies to attract and develop students who can enhance their creativity and innovation. Therefore, the accounting curriculum should be updated to include practical components, such as internships in accounting firms, to bridge the gap between theory and practice. Practical courses, such as computerized accounting programs and software, are leveraged to enhance proficiency. Internships at accounting firms would provide students with hands-on experience in electronic data entry and accounting.

Like any research study, this one has limitations. Therefore, this research focuses primarily on the influence of teachers' perceptions. However, the literature also indicates that objective factors, such as seniority, experience, discipline, grade levels taught, and teachers' socio-geographic characteristics, can influence teachers' perceptions of their work environment. Therefore, these factors can be considered variables. Hence, the limitation of this research is the absence of objective metrics for evaluating professional development and empowerment. Many studies frequently employ quantifiable indicators such as continuing professional development hours or formal skills inventories to gauge human capital. Likewise, empowerment can be assessed using parameters such as professional status, career advancement, and remuneration. Owing to constraints related to fieldwork, institutional context, and data accessibility, these elements could not be incorporated into the current research framework. Nevertheless, they constitute important avenues for future investigation, which should aim to enhance and triangulate the analysis by utilizing more diverse, comprehensive, and potentially more sensitive indicators of long-term career progression. For future perspectives, it is recommended that the significant role of psychological empowerment in fostering affective commitment be explored.

Conclusion

This study aimed to validate the mediating role of human capital development in the relationship between vocational and technical education and the empowerment of the accounting profession. Technical and vocational education has a direct and significant impact on empowerment, as well as an indirect effect through human capital development factors that serve as mediators. These findings reinforce the theoretical robustness of the model. The results support the importance of recruitment strategies focused on behavioral skills, motivation, and technical qualifications. Emotional intelligence stands out as the most influential mediator. It also appears to be the factor that interacts most strongly with education, producing a greater effect on empowerment. Integrating workshops on stress management, assertive communication, and empathy into professional development programs is beneficial.

This article presents an integrative framework with strong empirical validity, in which technical education not only provides a skills base but also serves as a catalyst for the development of human capital. In turn, this human capital, particularly through emotional intelligence, acts as a lever for transformation toward increased professional

autonomy. This article enriches theories of empowerment, talent management, and skills development by demonstrating the importance of the interactions between technical education and human dimensions in building resilient, agile, and responsible accounting professions.

Abbreviations

CFI: Comparative Fit Index, EAP: Empowerment of Accounting Professionals, EFA: Exploratory Factor Analysis, EI: Emotional Intelligence, H: hypothesis, HR: human resources, HRM: Human resources management, PCA: Principal Component Analysis, Q: Vocational and technical education, RMSEA: Root Mean Square Error of Approximation, TA: Attraction of Talent, TLI: Tucker-Lewis Index, TR: Training and Development, VIF: Variance Inflation Factor.

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Author Contributions

Each author contributed equally to this work. The study's design, methodology, data collection, analysis, and the drafting and critical revision of the manuscript were done through close collaboration. All authors approved the final version and accepted full responsibility for the article's content.

Conflict of Interest

The authors state that they have no conflicts of interest related to this research. There are no professional, personal, or financial relationships that could affect the results or their interpretation.

Declaration of Artificial Intelligence (AI) Assistance

The authors state that the writing, analysis, and presentation of the results were performed using validated resources. No generative technologies or artificial intelligence tools were employed to generate ideas, interpret data, or organize the scientific results.

Ethics Approval

This research adhered to the ethical principles relevant to social and management sciences. Participation was voluntary, and each participant could withdraw from the study at any time without penalty. The anonymity and confidentiality of the data collected were strictly maintained, with no personally identifiable information requested or recorded.

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