

Building Strong International VET Networks: An Analysis of the Role of German Chambers Abroad (AHKs) in the Y-Mas Project

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ABSTRACT

International Vocational Education and Training networks - VET - are essential platforms for global collaboration, addressing complex societal challenges and promoting sustainable development. This paper focuses on their role of the German Chambers of Industry and Commerce (referred to as AHKs in German, short for “Auslandshandelskammern”) within the Y-Mas project, which aims to tackle these challenges through education and training. Key to the effectiveness of international VET networks are diverse organizations and institutions working together towards shared goals. The Association of AHKs is a crucial player in this regard. Based in Germany, the AHKs bridge the gap between German companies and their foreign counterparts, promoting and supporting the establishment of VET networks. Their comprehensive services, including market research, trade promotion, and networking opportunities, facilitate collaboration and knowledge exchange. This paper adopts a research methodology comprising a literature review on international VET networks and qualitative case studies involving four German organizations operating in Latin America. The findings highlight the important contributions of these networks in fostering cross-cultural dialogue, facilitating partnerships, and disseminating innovative practices.

International VET networks are instrumental in promoting global cooperation and addressing diverse challenges in vocational education and training. By leveraging the expertise and resources of various stakeholders, these networks enhance the quality and relevance of vocational education, benefiting individuals, businesses, and societies.

Keywords: International vocational education and training, VET networks, Sustainable development, Cross-cultural collaboration

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1 INTRODUCTION

In today's dynamic and interconnected world, the crucial role of vocational education and training (VET) in fostering knowledge exchange, collaboration, and economic growth is increasingly recognized (Kaleja & Egetenmeyer, 2017). Despite their importance, there remains a significant gap in the research on VET networks.

This paper aims to contribute to the emerging field by focusing on the German Chambers of Commerce Abroad (AHK)'s work in Latin America, conducted as part of the Y-Mas Project funded by the Federal Ministry of Education and Research (BMBF). The project seeks to address existing weaknesses, and to particularized them regarding the social- economic context of each country, in regional training and further education, supplementing them with previous content related to the transition to Industry 4.0 – the digital transformation of manufacturing and related industries.

Our research primarily emphasizes the importance of international VET networks as catalysts for knowledge exchange and skill development. It explores the AHKs' initiatives in Latin America, striving to uncover insights into the benefits and challenges of fostering effective VET networks. By examining the experiences and perspectives of AHKs from Colombia, Ecuador, Argentina, and Uruguay, we aim to demonstrate how these networks contribute to developing a skilled and adaptable workforce.

Further, we intend to identify, analyzed, or to contribute to the improvement of the strategies employed by the AHKs to meet the evolving needs of the VET sector. Understanding these strategies will contribute also to academic knowledge of VET networks and offer practical implications for policymakers, educators, and industry professionals.

This paper aims to analyze the role of AHKs in the Y-Mas project, a global initiative addressing complex societal challenges through education and training (Hörl & Ahrens, 2019). By examining the importance and relevance of VET networks, the paper aims to shed light on the functions and contributions of AHKs in building strong and inclusive international VET networks for engineering education. This analysis will contribute to a better understanding of the role of AHKs in promoting sustainable development and collaboration in the VET field. In summary, this research investigates the role of the AHKs in advancing international VET networks in the unique context of Latin America. It seeks to illuminate the transformative potential of these networks to drive innovation, skill development, and sustainable economic growth. We hope this study will encourage further research in this crucial area."

1.1 The Importance of VET

Over the past years, vocational education and training (VET) has emerged as a crucial driver of economic growth globally offering means to adapt to social changes (Kaleja und Egetenmeyer 2017, p. 66). VET is an inclusive term used to describe educational and training programs aimed at equipping individuals, including both young people and adults, with the

necessary knowledge, skills, and competencies essential for specific occupations or the broader labor market (CEDEFOP, 2014, p. 292; Council of the European Union 2020, p. 1). The significance of VET is reinforced by its recognition as a fundamental right in the Charter of Fundamental Rights of the European Union. In alignment with the United Nations' Sustainable Development Goals, VET strives to ensure equal access to affordable and high-quality technical, vocational, and tertiary education while also increasing the number of individuals, irrespective of gender, possessing the relevant skills required for employment, decent jobs, and entrepreneurship (Council of the European Union 2020, p. 1).

The challenges posed by demographic changes underscore VET's importance (Kaleja undand Egetenmeyer 2017, S. 66) and the need to develop skills that align with a changing labor market and society. VET addresses complex societal challenges by preparing individuals for employment and providing them with the necessary competencies (European Commission, 2022). However, the impact of global disruptions, such as the COVID-19 pandemic and the war in Ukraine, on the future of teaching and learning in VET remains uncertain and requires further analysis and understanding. These circumstances have presented challenges for the global workforce, necessitating adaptations and strategies to ensure the resilience and effectiveness of VET on an international scale (CEDEFOP 2022).

VET offers numerous benefits to society, playing a crucial role in fostering a skilled, adaptable workforce and promoting labor markets that can respond effectively to economic changes (Council of the European Union, 2020, p. 1). VET is instrumental in addressing gender disparities by enabling women and men to pursue professions traditionally dominated by one gender, thus challenging gender stereotypes and promoting gender equality (Council of the European Union, 2020, p. 2). Additionally, VET has proven to be effective in facilitating the transition to the labor market for young individuals at risk of exclusion, providing them with the necessary skills and opportunities for employment (Council of the European Union, 2020, p. 2). These benefits highlight the significant impact that VET can have on shaping a more inclusive, equal, and productive society (Council of the European Union, 2020).

VET should be seamlessly integrated into skills ecosystems, playing a vital role in regional development, fostering innovation, and supporting intelligent specialization strategies. Collaboration with other education and training sectors, the scientific community, and businesses is crucial for the success of VET. VET must establish innovative partnerships with the world of work, promote mobility and internationalization strategies, and align with research, education, and innovation endeavors to stay relevant and effective in addressing evolving societal needs (CEDEFOP, 2022). These collaborations are the foundation for developing and articulating networks within the VET landscape. Moreover, by emphasizing the significance of collaboration, mobility, and internationalization, VET networks can thrive and contribute to advancing vocational education and training.

1.2 The international VET Landscape in Germany

The German dual vocational training system, characterized by a combination of workplace learning and classroom instruction, is a model for international VET efforts. Fundamental principles of this system include joint responsibility of the state, industry, and social partners, national standards, qualified trainers, and institutionalized vocational education and labor market research (BMBF, 2019). The selection of partner countries for vocational training cooperation is based on various factors such as educational, economic, and labor market goals. German missions abroad and the AHKs facilitate coordination and information exchange among German stakeholders in the international VET field, contributing to the continuous improvement of vocational training programs (BMBF, 2019).

1.3 Internationalization of VET

The internationalization process is multi-faceted and highly influential in various sectors, including education and the economy. This influence is primarily driven by the demand for a workforce adept at working within international contexts, shaped by major global trends (Kaleja und Egetenmeyer 2017, S. 64). One such trend is the steady rise of globalization over the past three decades, which has led to an increasing need for graduates equipped with the skills and understanding to navigate a globalized and intercultural world (Tran, 2015).

Simultaneously, societal, and technological changes, such as the rise of the Internet and social media and increasing migration, continue to shape everyday life. The influx of refugees into the European Union since 2015 is one instance that has amplified the trend towards internationalization, affecting both social and economic aspects of European life (Kaleja und Egetenmeyer, 2017, p. 64).

In the case of Latin America his economic and industrial development depend, in most of the fall, of the transference of knowledge like the application of new technology in the supply chains for exportation, the development of the smart mobility and the capacity of design new green cities. The international alliances will be contributing to consolidate the roll of the science and technologies in the emergent economies.

1.4 International Cooperation and Networking

The significance of VET and its international cooperation is gaining renewed prominence (Frommberger et al., 2021). Germany's involvement in international VET cooperation spans several decades and is primarily targeted toward enhancing VET in partner nations, including developing and emerging countries. Historically, this cooperation has been primarily linked with German development cooperation and facilitated by bodies such as the Ministry for Economic Cooperation and Development, the iMOVE initiative, and the BMBF (Frommberger et al., 2021).

The federal government's strategy paper of 2013 created new institutional structures, formulated strategic goals, defined the responsibilities of the actors, and currently forms a central and interdepartmental orientation for German VET cooperation (see BMBF, 2013).

Five ‘core principles’ for international cooperation in the field of vocational education and training were formulated in this strategy paper: (a) cooperation between social partners, economic organizations, and the state; (b) learning in the context of work; (c) acceptance of national regulations and standards (curricula); (d) training of vocational teachers and trainers; and (e) research on vocational education and training. This strategy also responds to a steady stream of inquiries from abroad to support the development of dual vocational training approaches. In international vocational education and training cooperation, experience has shown that actors in partner countries have a solid interest in the development of dual vocational education and training structures (BMBF 2013).

1.5 Challenges in International VET

Despite the outlined principles, implementing German international VET cooperation presents distinct challenges across different national contexts. The limited involvement of company interest groups can impede the acceptance and implementation of national standards and regulations in company-based training. Moreover, the qualification of vocational teachers and trainers varies considerably across countries, making establishing unified standards challenging. Alongside these issues, VET research is often limited and fails to gain widespread acceptance (Frommberger et al., 2021).

Interestingly, the discourse on international VET transfer and development in Germany lacks a unified structure and is often punctuated by assumptions, misconceptions, and myths. Despite these challenges, the German approach, particularly the dual training system, continues to be propagated as an effective development cooperation instrument and a vehicle of economic and foreign policy (Frommberger et al., 2021).

In conclusion, international cooperation in VET is increasingly essential and requires a comprehensive approach considering partner countries' specific VET approaches. The core principles of German dual vocational education and training must be adapted to specific contexts and requirements (Frommberger et al., 2021).

1.6 The Role of the German Chambers Abroad (AHKs) in Latin America

Leveraging the support of German chambers, AHKs provide vocational training based on German standards, catering to the training needs of both local and German companies. Their functions extend beyond training provision and encompass establishing vocational education bodies involving relevant stakeholders. AHKs work towards developing transparent operational structures for vocational training measures, fostering the initiation and facilitation of training partnerships between AHKs, local chambers, social partners, and businesses. Furthermore, AHKs collaborate closely with vocational schools, contributing to enhancing vocational education and training systems (BMBF 2013).

AHKs also play a significant role in establishing certification and examination systems that involve all relevant stakeholders. By actively engaging in certification processes, AHKs ensure the quality and validity of vocational training programs. Their collaboration with chambers in Germany, which have statutory responsibility for vocational education under the Vocational Training Act and Crafts and Trades Regulation Act, enables them to offer

demand-driven and high-quality vocational training services based on the German dual system. AHKs, in coordination with their German counterparts, leverage their expertise to deliver tailored vocational training programs aligned with the needs of both the local and German industries (BMBF 2013, p. 7).

Moreover, AHKs act as demonstrative agents, showcasing the strengths and effectiveness of the German dual vocational training system. Through pilot projects, AHKs highlight the significance of integration, counseling, and quality assurance in vocational education and training. These initiatives contribute to the continuous improvement and adaptation of vocational training programs to meet the evolving demands of the labor market (BMBF 2013, p. 2).

The AHKs, supported by the Federal Ministry for Economic Affairs and Energy, are essential bridges between German companies and their counterparts in partner countries. As local platforms for foreign trade promotion, AHKs facilitate connections and strengthen economic ties. Their close collaboration with chambers in Germany, which are responsible for vocational education according to the Vocational Training Act and Crafts and Trades Regulation Act, enables them to offer demand-driven and high-quality vocational training services based on the German dual system, 2013). AHKs also demonstrate the strengths of the dual vocational training system and emphasize the importance of integration, counseling, and quality assurance through pilot projects (BMBF 2013, p. 7)

1.7 The Y-Mas Project

The Y-Mas project, funded by the German Federal Ministry of Education and Research (BMBF) and administered by the DLR Projektträger, aims to address challenges in industrial production in Latin America via an innovative network approach. The German Chambers Abroad (AHKs) are associated partners of this project. They provide essential expertise and connections that underpin the network-centric approach. While they do not execute the project directly, their role as intermediaries and advisors is crucial for successfully implementing the Y-Mas project.

Despite the wealth of existing literature on VET and international cooperation, there is a dearth of focused research on the effectiveness and impact of VET networks and their actors. This study seeks to bridge this gap by offering a unique perspective on international VET cooperation. Through this literature review, we draw upon multiple perspectives to shape a comprehensive understanding of the role of AHKs in the international VET community and the impact of their work in regions like Latin America, mainly through the lens of the Y-Mas project. This provides a platform for our research to delve deeper into these topics, enriching the existing discourse with fresh insights.

1.8 Understanding International VET Networks

In the existing literature, there appears to be an absence of a precise definition of ‘VET networks.’ However, multiple terms implying international collaboration and cooperation within this field are prominent. For instance, expressions such as ‘international vocational training cooperation’ (Frommberger et al., 2021), ‘development cooperations’ (Li and Pilz, 2023, S. 193), and ‘international Berufsbildungszusammenarbeit’ (BMBF 2019) are found within the academic discourse. These phrases encapsulate the global collaboration between various actors in the realm of VET.

Despite the lack of a standardized term, the concepts underpinning ‘VET networks’ can be extrapolated from the literature. Given the context, a plausible definition for VET networks could be: “International VET networks refer to a global collaborative framework involving diverse actors in vocational education and training. This framework enables shared learning, knowledge exchange, cooperation, and coordination to enhance the quality and reach of vocational education and training.”

The structure of these networks encompasses various stakeholders who collectively shape the field. According to Perry and Tor (2009), these networks are characterized by “knowledge communities,” highlighting the significance of shared learning and collaborative knowledge building. Expanding on this perspective, Meyne and Peters (2022, p. 729) include exporters, individuals, organizations, VET providers, and carriers as additional actors within these networks. Additionally, state organizations, social partners, and Wirtschaftsorganisationen (BMBF 2013, p. 3) also contribute to the formation and growth of these networks. Each actor plays a crucial role in establishing, maintaining, and advancing these international networks, thereby fostering the overall progress and effectiveness of vocational education and training worldwide. Among these actors, the AHKs hold a central position due to their extensive presence as facilitators of knowledge exchange and promoters of global partnerships.

The nature of these networks is multidimensional, with diverse stakeholders involved in shaping the field. Perry and Tor (2009) identify ‘knowledge communities,’ which underline the importance of shared learning and collective knowledge building within these networks. Meyne and Peters (2022, S. 729) extend this list of actors to include exporters, individuals, organizations, VET providers, and carriers. Furthermore, state organizations, social partners, and Wirtschaftsorganisationen (BMBF 2013, S. 3) Each actor plays a vital role in creating, sustaining, and enhancing these international networks, contributing to the overall development and effectiveness of vocational education and training on a global scale. The AHKs, with their widespread presence, perform a pivotal role in these networks, facilitating the exchange of expertise and fostering global partnerships.

2 METHODOLOGY

This study employs a qualitative multi-faceted approach to understanding the role of AHKs in international VET cooperation, specifically in the context of the Y-Mas project. The methodology includes an in-depth literature review, expert interviews, and workshops to gather diverse insights. The methodological steps followed in this study are discussed below. An exhaustive literature review was carried out to establish the theoretical foundation for the study. This step involved systematically analyzing academic articles, research papers, reports, and other relevant materials. The literature review helped identify gaps in current knowledge and provided context and support for the study's aims and objectives.

The study conducted seven expert interviews with representatives from AHKs in Colombia, Ecuador, Uruguay, and Argentina, along with two experts involved in coordinating VET networks. Participant recruitment employed a purposive (non-probability) sampling technique, leveraging the Latin American network established through collaboration with AHKs as part of the Y-Mas project. These semi-structured interviews aimed to gather detailed perspectives and real-world insights not commonly available from secondary data sources. Interview questions were thoughtfully prepared to focus on the roles and experiences of AHKs, as well as their perception of international VET networks adapted to the context of Latin America. All interviews were recorded with participants' consent and subsequently transcribed for analysis. On average, they lasted one hour.

The subsequent phase involved conducting a qualitative content analysis of the interview transcripts. This process adhered to the guidelines set forth by Mayring (2023), which were employed to systematize and interpret the textual data derived from the expert interviews. A coding scheme was devised based on pertinent literature regarding VET networking, utilizing a deductive analysis of categories following Mayring's framework, as presented in Table 1. To facilitate this analysis, we employed the open digital tool QCAMap, developed by Mayring (2023).

Table 1: Initial Code for content analysis based on VET literature review.

Code	Description
VET Networks	Mentions of VET Networks, their structures, organization, roles, etc.
International Cooperation	References to cooperation or collaboration between international entities, organizations, or stakeholders in education.
Stakeholder Perspectives	Mentions of personal views, beliefs, attitudes, or understandings from stakeholders related to VET networks.
Challenges	References to problems, obstacles, or difficulties encountered in implementing, operating, or managing VET networks.
Success Factors	Mentions of elements, strategies, conditions, etc. that contribute positively to VET networks' operation, implementation, or management.
Benefits	Mentions of advantages, gains, or positive outcomes derived from the participation, implementation, or operation of VET networks.
Country Specific Insights	Mentions of unique or distinctive VET network features, approaches, or perspectives in specific countries (Colombia, Argentina, Ecuador, Uruguay).
Knowledge Exchange	References to the sharing, transferring, or exchanging of information, skills, expertise, or knowledge between individuals, organizations, or entities within the VET networks. This may include formal and informal learning, mentoring, collaborative projects, or other forms of interaction.
Industry Partnerships	Mentions of collaborations, alliances, partnerships, or relationships between VET networks and industries or businesses. This could involve joint initiatives, shared resources, or coordinated efforts to achieve common goals.
Government Regulations	References to laws, policies, rules, or regulations the government established that affect VET networks' operation, implementation, or management. This could also include mentions of the impact of such regulations on the VET network.
Curriculum Design	Mentions of creating, developing, or modifying the educational content, instructional strategies, assessment methods, or other components of the training programs within VET networks. This could also include references to the factors influencing curriculum design.
Skills needs analysis	Mentioned of the needs of the context in VET and his issues or areas of study, examples of the title of programs of study or curriculum, needs in the context of each country
Long-term impact	Sustainable and long-term impact of the networks, conditions, observations, and recommendations to ensure the continued successes of these.
Legal framework for public-private cooperation	Mentioned of all regarding to the legal framework of the Networks and the kind of partner
Lifelong learning	Reference to the work-based Learning and learning strategies in workplaces, abilities for new works, the impact of the technology in the workplace, apprentices in age rages etc.

These codes served as the guiding framework to evaluate the interview data systematically, identify key themes, understand their relationships, and draw meaningful conclusions.

Developing this coding scheme is integral to our methodology, as it provides a structured approach for dissecting the rich, qualitative data obtained from the interviews. This methodological approach ensures a thorough, comprehensive, and uniform interpretation of the data, contributing to the validity and reliability of our research findings.

Each transcript was thoroughly reviewed, and relevant themes were identified. These themes were then classified and organized into a coding system applied throughout the transcripts to condense the data into manageable segments. The content analysis of the interviews was conducted to summarize the main characteristics and themes that emerged from the expert interviews. This analysis helped identify patterns and trends within the data, providing initial insights into the role and influence of AHKs in VET networks.

The final step in the analysis process involved synthesizing all the data collected from the literature review, expert interviews, and workshops. The data was interpreted in the context of the study's objectives, with attention to emerging patterns, discrepancies, and unexpected findings.

By methodically conducting this research, this study hopes to contribute valuable insights to the existing body of knowledge on the role of AHKs in shaping international VET networks and their influence on projects like Y-Mas. The following section will present the analysis results, utilizing the coding scheme to highlight the key insights from our expert interviews.

3 RESULTS

Through qualitative content analysis of the interviews, distinct similarities, and differences among the four countries - Colombia, Argentina, Ecuador, and Uruguay - were identified. The observations highlighted the salient features of international cooperation in education and training, encapsulating broad networks that include all pertinent stakeholders. With the support of the free tool QCAMap of Mayiring (2023) we have make a deductive analysis whit the categories identified in the literature. We have use two questions to orient the analysis of the interview, namely, "What are the fundamental conditions for managing and maintaining an international networking for continuous education and/or workforce development?" and "How are the training needs for the workforce understood in the Latin American region?"

In the analysis we found the major categories of the coding scheme that are illustrating in the following diagrams:

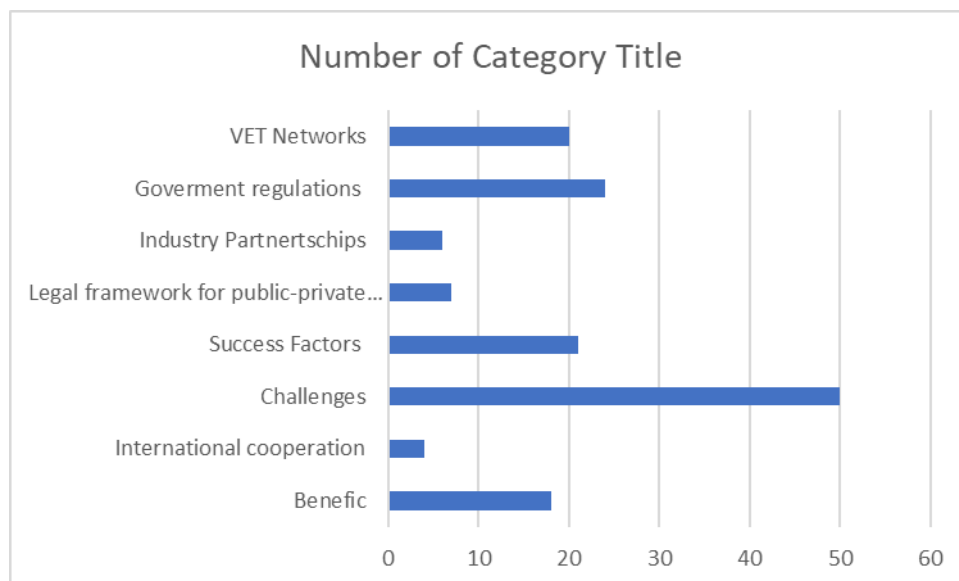


Figure 1. Number of categories found in the deductive analysis of the question: "What are the fundamental conditions for managing and maintaining an international networking for continuous education and/or workforce development?"

3.1 Conditions and Characteristics of a VET- Network

In all instances we are finding that the concept of Network is strongly appreciated for the participants. But there are also many difficulties to establishment them. There are two dimensions that are the key factors to development a VET network in Latin America. One of them is the lack of a common legal frame. On the other hand (and that is maybe a consequence of the lack of the government regulation) the multiplicity of meanings of Vocational Education and Training in the region. The German Chambers will be available to apply the German model of DUAL study as a standard model. Nevertheless, they cannot achieve this goal because of the legal context of the country. For example, in Argentina the formation or programs of study that are regulated for the AHK have not equivalence with the title that is given for the education ministry, but they are recognized for the German government. This situation affects the possibility of development a standard curriculum and limit the scope of the AHKs. In the case of the Network, because each country must adapt the goals of the AHKs in the VET, there are difficulties to interchange of knowledge between the chambers of the regions or to promote students' mobility in the region. That is an advantage of the European Union – EU there are a common guideline to development the VET and his Networks.

3.2 Success factors

Despite the challenges, there are experiences that can guide the success of the VET Network in the region. Through the interviews, three fundamental aspects have been identified for consideration:

1.The types of organizations or actors in the Network: There are various types of actors or organizations, such as small and medium-sized companies, multinational companies, government institutions, or individuals. Each of them operates within a specific legal framework and has distinct interests in participating in the Network. For example, establishing a relationship between a government institution and a public school differs from establishing one with an automobile manufacturing company.

2.The definition of functions and roles within the Network: It is crucial to have a clear definition of the role of each participant in the network. One institution should take the leadership role in managing the process and supporting the description of functions and roles for other participants.

3.The benefits of participating in the Network and clear agreements: It is important to ensure clarity regarding the benefits and agreements when participating in the Network. Sometimes, during meetings or workshops, expectations may arise that cannot be realistically fulfilled. It is essential to transparently communicate the benefits to avoid misunderstandings that could jeopardize the sustainability of the Network.

3. 3 Challenges and necessities in the region

Vocational Education and Training (VET) in the region primarily focuses on reducing youth unemployment. This is where the role of AHKs in the region becomes significant. AHKs have been supporting governments as advisors to policymakers. However, there are challenges in promoting VET or Dual training due to the legal framework, except in Ecuador. For instance, in Colombia, the collaboration between AHKs and SENA (Servicio Nacional de Aprendizaje) is limited due to restrictive bureaucratic processes and institutional rules. SENA plays a central role in vocational training for Colombian youth but requires more flexibility in the process and bureaucratic management. Conversely, in Ecuador, the legal framework facilitates the recognition of equivalent qualifications. Institutions that manage or have implemented study programs in collaboration with AHKs are acknowledged by the local government.

3.4 Curriculum Necessities in the region

There is a variability of demands in the labour market of Latin America. Factors such as population size, geography, and economic models influence the specific skills required by workers. For example, in Uruguay, there is less emphasis on industrial production compared to the demand for service-related activities like software development or management. In Colombia, there is a notable interest in tourism in coastal regions and a strong focus on industrial production in cities like Bogotá or Medellín. In Argentina, industry representatives have expressed concerns about the scarcity of workers with up-to-date technical and production knowledge, particularly in small and medium-sized companies (SMEs), such as metallurgical companies. One of the main causes of this deficiency is the prevailing perception that manual labour is poorly paid and associated with "dirty" professions, making them unattractive to young individuals.

3.5 Challenges Posed by the COVID-19 Pandemic

There is no doubt that the ongoing pandemic has brought about numerous challenges and significant changes in various sectors, including education. One notable development resulting from this situation is the increased opportunity for the development of remote courses and online platforms that facilitate the exchange of knowledge worldwide. Many participants have reported a shift towards virtual or blended learning methodologies, enabling people to have greater access to AHKs' continuous education programs. This transition to digital platforms has not only expanded educational opportunities but has also facilitated interaction and collaboration with individuals from different cities and countries. The digitalization of learning has proven to be advantageous for managing the international VET Network in the Latin American region, as it allows for seamless communication and cooperation regardless of physical location. This transformation opens exciting possibilities for expanding the reach of vocational education and training, fostering cross-cultural connections, and leveraging the collective expertise of diverse stakeholders in addressing regional challenges.

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