

Faculty-Led Program: Food & Beverage Supply Chain

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Abstract - This extended abstract presents a Global Training Program on the supply chain management of food and beverages. Since the main obstacles to the training internationalization are financial, the program was financed by the United States Department of State, Partners of the Americas, and NAFSA: Association of International Educators of the Innovation Fund sponsored by Santander Bank, the Universidad del Pacifico and the Rochester Institute of Technology. The theory will be presented to justify the program development in terms of the training contribution of human capital in the participating countries and empirical evidence of training capabilities that it allowed, according to the theoretical framework proposed by Braskamp et al. (2009), to identify dimensions of learning. The results mainly suggest that knowledge related to the value chain of food and beverages was successfully consolidated, along with recognizing the international experience necessary for intra-personal learning.

Keywords— Faculty-Led Program, Global Training, Food & Beverage, supply chain

I. INTRODUCTION

The internationalization experiences represent a way of using diversity and encouraging learning and innovation as creative destruction [1]. It creates an essential and unique learning environment and opportunity for students, offering them a period away from their everyday environment and leading them to develop a global understanding [2]. These experiences generate a sense of knowing, interacting, sharing, experimenting, and acting, especially developing sensitivity competence or cultural tolerance [3]. It is equivalent to a complete exchange experience: cultural, social, intellectual, and the proper value recognition from life in new international affairs [4].

According to British Council [5], only 1% of Peruvian undergraduate students participate in abroad programs. The barriers (language and culture) are mainly due to low financing and the economic impact on the students' families.

The *Faculty-Led Program de Food & Beverage Value Chain – New York* was proposed to overcome these financial barriers. Innovation is essential, especially in the value chain material, for the professional quality of agri-food systems and the development of cities. The program's primary strategy is first-hand global experiential learning. It was presented to the fourth edition of subsidies of the United States Department of State, Partners of the Americas, and NAFSA: Association of International Educators of the Innovation Fund sponsored by Santander Bank. The course was a bidirectional program for the students at Rochester Institute of Technology (RIT) and Universidad del Pacifico (UP), whose main objectives were: (1) to develop an integrated program around the creation and management of the food and beverages value chain (generating value in the chain), (2) to offer experiential and international learning to the students, and (3) to share business experiences as well as its consolidation process in the market. This study will

Analyze different dimensions of the *Global Training Program's* input based on the national reality of university training.

II. STATE OF THE ART

There is a wide variety of reasons why the international training experience generates positive outcomes in the quality of human capital in developing countries. From a national perspective, according to endogenous economic growth theories, positive externalities about human capital impact long-term growth in countries [6] [7] and determine heterogeneity between countries. On the other hand, cultural and social diversity represented a source of profit, innovation, and competitiveness for the workforce in human capital training [8]. Schumpeter was the first to develop a theory in which technological, organizational, or institutional innovation is the most critical component of diversity in education [1]: the impacts on productive sectors of the economy can be noticed from the improvement of companies. In summary, these authors agree that the quality of human capital differentiates between rich and developing countries to a large extent [1] [8] [6].

Based on individual or human dimensions, the experiences of internationalization allow a more significant capacity development in the workforce of multiple sizes, which results in agency training through learning [9] [10] [11]. In this sense, at least three domains can be identified [12] in which students' learning is materialized: (1) the cognitive domain, in which knowledge itself can be found, as well as the wisdom that critically allows discerning relevant information; (2) the intrapersonal domain, where the students' integrity is consolidated, in terms of their identity knowledge as well as the level of respect, acceptance and emotional trust regarding their cultural differences; finally, (3) the interpersonal domain, that understands the desire to interact with other people, intends to improve the capacities of social capital accumulation and contributes to the construction of social responsibility with the environment.

As a result, the *Faculty-Led Program* on the value chain management of food and beverages in New York can contribute to human capital training within the framework of an internationalization experience in the study of the models obtained from the most recent literature to understand the value chain management of food and beverages [4] [13] [14]. Such contribution affects the companies and the innovation process [15], in the competitiveness of the countries involved, also enabling it to consolidate relationships between educational institutions that fund this program: UP and RIT.

III. METHODS AND PROCEDURES

The program was implemented in the following manner. In the first place, class sessions and visits were focused on the discovery, knowledge, and learning of the business environment in The United States and Peru; the best practices, the proposals of value, and its challenges in two global spheres with various economic, social, technological, cultural, environmental, geographic fields, among others [4]; and also in facilitating the

mutual transfer of knowledge around three cross-cutting topics [14]: (1) Environmental sustainability and packing science, (2) *Supply chain* management and (3) Retail operations of food and beverages. The techniques and activities that were performed to reach the objectives were the following:

- Participative presentation: Explanation and demonstration of content with the participation of students. Questions and discussion of the cases.
- Collaborative work: Students exchanged information and worked in small groups, learning through collaboration.
- Experiential learning: Through visits to enterprises or organizations.

The importance of food and beverages in economic development, the growth in tourism, and the story in two different environments offer an opportunity to compare and improve the industry through practices and business projects of the students. The Finger Lakes region is considered one of the leading industries in agriculture and processed food in the Eastern part of the United States. It is essential in the sector and has enjoyed extensive market development [13].

For this reason, the food and beverages sectors in Finger Lakes in New York and Lima and Cusco in Peru were selected for the program. Consequently, work was carried out in a module for each cross-cutting topic, as previously stated, resulting in three modules. In summary, the course was consolidated around three focal points: cultural and social orientation emphasizing the business environment, knowledge of the value chain components of food and beverages, and an understanding of the business environment [16] [17].

IV. EXPERIMENTAL/NUMERICAL SETTING

The RIT class took place first during the spring academic semester of 2019. A 3-credit course (HSPT-151-International Food) with a study abroad/travel component was developed and offered for undergraduate (n=7) and graduate students (n=3) in the Spring semester. The course's class dates were 14 weeks, from January 16 to April 24. A total of 10 students were enrolled in this course. In addition to the students, two professors and 2 American Sign Language interpreters attended the course's travel/study abroad portion. Upon return to Rochester, students completed research projects presented in poster format at the 2019 Imagine RIT Creativity and Innovation Festival.

The UP class took place during the summer of 2019. A 4-credit course with a study abroad/travel component was developed and offered for undergraduate students (n=20). In addition to the students, two professors and one communication assistant traveled to Rochester.

All the participants of these programs had the opportunity to visit large and small-scale businesses, interact with the administration and management, and receive first-hand knowledge of the food and beverage supply chains in these critical ecosystems. Likewise, they had an opportunity to participate in extracurricular activities unique to the locations, different cultures, and social environments [18].

The following videos and stories highlight the student

experiences and program success:

- RIT visit to UP:
<https://saunders.rit.edu/blog/2019/04/students-spend-spring-break-peru-faculty-led-trip#>
- UP visit RIT:
https://www.youtube.com/watch?v=DAeoB2_O9fc
- UP visit RIT:
<https://www.youtube.com/watch?v=Gyk5E7yP0UE>

V. RESULTS

The program's impact will be evaluated in light of the testimonies of 12 UP students who participated in the program. An effort was made to show the recognition of learning in fundamental aspects of the food and beverages chain and its impact on global businesses. To that end, four topics were identified, which students referenced together in their respective testimonies. Then each group will be matched with learning dimensions [12] so that the depositions can be interpreted in the light of this theory and provide evidence on capacity training through *global training*.

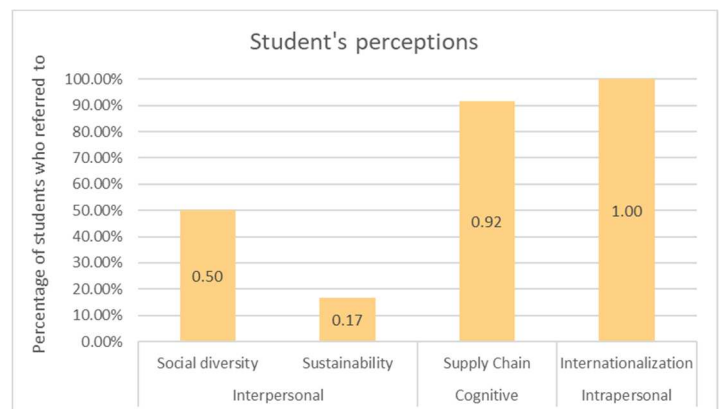


Figure 1. Student perceptions on global formation experience.

The student who completes the course recognizes the importance of internationalization for their professional development and the study of the *supply chain*. On the other hand, half the class identified the value of social diversity, while approximately one-fifth referred to a contribution to sustainability. Consequently, students could integrate a highly competitive food value chain in a multicultural context. In addition, experiential learning allowed the improvement of networking competencies for students.

Furthermore, the process of the enterprises' experience presentation added to the competition of the business ideas' consolidation. Then this learning was achieved from a business engineering perspective. These perceptions, on the part of the students, allowed them to account for the importance they attributed to different course objectives and interpersonal capabilities that were also formed.

- (1) Jimena Pereyra: "It was an amazing and unique experience. Travel abroad, learn the business

- processes and practices, rethink the Peruvian business environment and discover new ways of business decisions that are taken daily."
- (2) Luis Felipe Rubatto: "I had an incredible experience during the course. It contributed immensely to my training. The experience in the United States and Peru presents new ways to adopt the benefits of the practices abroad."
 - (3) Andrés Regal: "It allowed us to understand the flow of the perishable *supply chain* in the USA. The course highlighted several improvement opportunities for the system in Lima and Peru, especially in the working conditions and the nutrition level in the community."
 - (4) Camila Durán: "It was a short experience, but with many activities involved. These activities focused on knowing the manufacturing process in food and beverage companies. The visits provide a broader vision of the process and invite you to reflect on the comparison of processes in Peru and the United States, taking into account the use of technology, and quality standards, among others."
 - (5) Alberto Vidal: "It was a very enriching experience. It allowed me to know different realities and perspectives in academia and business. The contribution to my training lies in its impact on my perception of education and different organizational cultures, allowing me to get out of my comfort zone and learn about different ideas."
 - (6) Jean-Michel Benoit: "Experiences in Lima as in Rochester have contributed to my training since I have seen the reality of the Food and Beverage businesses very closely. Seeing this has contributed to knowing the stages through which the products go before being sold."
 - (7) Sheryl Villalobos: "I think this experience was precious for my career and my professional training since it allowed me to know different practices, which are not yet applied in Peru and to be able to perform the contract and analyze the difference that exists between Peru and the United States."
 - (8) Alessandra Rivera Liau Hing: "I consider that this experience enriched me both in my personal and professional life, I had the opportunity to observe different ventures, learn about the art of packaging and especially the complexity of a productive process but the importance of technology to make these processes more efficient. Also, I could meet incredible people with great ideas to develop and other horizons of UP and RIT. The truth is that I am very grateful to this program, and I hope there will be more for UP students to take advantage of."
 - (9) Alina Alegre Chaparro: "Taking the *Food & Beverage Value Chain* course was amazing. Traveling to the Rochester Institute of Technology to deepen our knowledge regarding the *supply chain* was a unique and enriching experience. Dialoging directly with the managers and owners of the companies visited in Lima and Rochester and knowing their vision and mission let us understand that both goals are very similar. However, the means to achieve these objectives efficiently are very different. Everything we could appreciate and learn during our visit to Rochester will allow us to create new solutions to improve our country's food *supply chain*."
 - (10) Melanie Alarcón: "The *Food & Beverage Value Chain* course helped me complement what I was taught in the UP. He showed me in a practical and real way everything theoretical I knew. Visits to companies and factories in Rochester and Lima allow me to know the improvement opportunities we can apply in our country and to understand more about how the *supply chain* works in both contexts. The experience was outstanding. We stayed at the RIT campus, where we had classes and could enjoy different activities. RIT hosts were friendly and helped us be as comfortable as possible. Their program was impressive since it included many tourism activities with basically everything covered. In the same way, the people we talked to in Rochester businesses were accessible to show us their processes, their production chain, the technology used, and the strategies applied in the food and beverage industry. This course is a great opportunity to have direct contact with the industry, learn from experienced people, and learn about methodologies applied in other countries, in this case, the United States."
 - (11) Nashely Torres: "The course we took in Rochester, personally, was a very enriching experience; it allowed me to observe the realities both in Peru and in the USA and thus be able to identify business and improvement opportunities that could be applied in our society."
 - (12) Andrea Otiniano: "It was a great experience in which I was able to compare the processes of a value chain in two different contexts, that were Peru and Rochester, through visits to companies in the food and beverage industry. It allowed me to recognize the different practices that companies take into account, as well as the technology they use as support to take it into account as an opportunity for improvement in the Peruvian context."

VI. CONCLUSIONS

The *Food & Beverage Value Chain* course overcame the financial barrier. It provided a cultural and business exchange that allowed students to develop a realistic vision of the

concepts studied during their training. At the same time, this allowed them to observe different perspectives that enriched their training and decision-making as future managers of the *supply chain* or as future entrepreneurs.

On the other hand, the development of the students' interpersonal capacities in the program. These capacities are oriented toward recognizing the importance of social diversity and sustainability. In this way, it is intended to provide students with the human capital required to be competitive. The development of these types of programs impacts students from both universities, RIT and Universidad del Pacifico. The RIT students explored the Peruvian business environment based on the diversity of products, organic products, and their relationship with the traditional Peruvian culture. The UP students explored the innovation and entrepreneurial environment of Rochester and the relationship between the academic, public, and private sectors, working together in the development of the community of Rochester. Students can experience how to establish businesses based on their strengths, create an impact on their environment, and learn and apply it in their business environments.

RIT and UP continue to work toward program sustainability and development. The 2020 program will focus on *supply chain* and packaging in the global economy. The continued purpose of the program is to provide students the opportunity to explore the fundamentals of *supply chain* and packaging science with a focus on the food and beverage industry. Students do not need prior knowledge and will engage all levels interested in stepping outside the traditional classroom. The course will utilize RIT's expert faculty from the Saunders College of Business and Engineering Technology, as well as a variety of Rochester-area business leaders. Each day of the program will introduce students to new *supply chain* and packaging science concepts, including the following:

- Food and Beverage *Supply Chain*: Introduction to the importance of food and Beverage in economic development, tourism growth, and market development through first-hand experience visiting large-scale and small private companies and trade organizations.
- Packaging Materials – Paper, Glass, Metals & Plastics: Focused on packaging materials from extraction through conversion and production, physical and chemical properties, and uses. Includes an introduction to standard testing procedures and other testing instruments.
- Packaging *Supply Chain*: Review market structures to understand how packaging relates to the general economy.
- Packaging for Marketing and End Use: Focused on the interrelationship between packaging and marketing, detailing how the retail consumer package can be used as a marketing tool. Students will be introduced to the

systemic approach to developing an optimum package for a given product to meet the demands of the retail market and end user.

The program is designed to continue to engage UP students in a unique experience that may not otherwise be possible. It will allow students to achieve the course's academic outcomes and explore new opportunities for graduate studies or career interests. A resume development workshop will be held for students to review the essentials of an effective resume and how this experience can be added to set themselves apart from their peers. With the help of IoT technology, it was possible to build a system that allows measuring indicators.

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Appendix 3 – UP classes at RIT (July 2019)

APPENDIXES

Appendix 1 – RIT in Peru (March 2019)



Appendix 2 – UP classes in Lima (July 2019)