ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

BRIDGING ACADEMIA AND INDUSTRY: THE ROLE OF GENDER AMONG RESEARCH GROUP LEADERS IN BRAZIL

Ricardo Augusto Mendes Carvalho

School of Business and Entrepreneurship, Universidade de São Paulo, São Paulo, Brazil

DOI:10.5281/zenodo.19691220

Abstract

Although there is substantial research on University-Industry Collaboration (UIC), some aspects of this partnership remain underexplored or even absent, such as the gender factor and its relationship with the UIC process. In this context, the aim of this study is to analyze the perceptions of leaders of Research Groups at a federal university in Brazil regarding the influence of gender factors in University-Industry Collaborations (UIC). This article adopts a qualitative approach and a case study design. The sample consists of 14 leaders of Research Groups at a Brazilian university who engage in UIC activities. Data were collected through in-depth interviews and analyzed using content analysis technique. The findings reveal three main contributions. First, there is recognition of the moderate influence of gender on UIC. Second, the results of UIC are indicated to be not directly related to the gender of the leader or their subordinates, but rather to their abilities. Finally, the study highlights the diversity is considered a positive factor for UIC, capable of enhancing outcomes.

Keywords: University-Industry Collaborations (UIC), gender, research group leaders, women, and men.

1. Introduction

University-Industry Collaborations (UIC), acts as one of the most important mechanisms for transferring knowledge and technologies (Hajizi & Shaqiri, 2024; Kleiner-Schaefer & Schaefer, 2022; Puffal et al., 2021) and thus plays a relevant role in promoting innovation, competitiveness and, consequently, economic development (Figueiredo & Fernandes, 2021; Nsanzumuhire et al., 2021; Rossoni et al., 2023).

Previous studies on UIC are recurrent and focus mainly on the factors that shape this interaction, which are motivations, channels, barriers and benefits (Arza, 2010; Bruneel et al, 2010; De Fuentes & Dutrénit, 2012; Evans et al., 2023; Franco & Haase, 2015; Nsanzumuhire & Groot, 2020; Rapini et al., 2015; Reina et al., 2023; Silva & Sartori, 2022).

All these studies on UIC related factors have been important in broadening our understanding of this collaboration. However, even with the intense worldwide scientific production on UIC, some fundamental aspects

Published by Keith Publication

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

of this relationship still remain insufficiently understood, such as those related to gender and its relationship in the collaboration process (Bastos et al., 2021; Calvo et al., 2019; Fernández-López, & Rodeiro-Pazos, 2019). This gap is what this article seeks to fill. To this end, the aim of this study is to analyze the perceptions of the leaders of Research Groups in UIC regarding the influence of gender factors on University-Industry Collaborations (UIC). Accordingly, the aim of this study is to analyze the perceptions of the leaders of Research Groups from a federal university in Brazil regarding the influence of gender factors in University-Industry Collaboration (UIC). There are articles in the literature that address gender factors in UIC; however, they are still scarce. This research differs from these studies in three ways. Firstly, offers a contextualized perspective on the perceptions of Research Group leaders regarding how they see and experience gender issues in interactions with companies. Secondly, Secondly, it provides a deeper understanding of gender dynamics within collaborations by considering gender, among the personal characteristics of leaders, as a factor capable of influencing the relationships that shape the collaborative environment. Thirdly, it contributes to greater awareness and understanding of gender issues by giving visibility to women in this field and by offering insights that can help Higher Education Institutions (HEIs) design strategies that encourage and strengthen UIC, creating more inclusive and collaborative environments.

In addition to the introduction, the article has five sections. The second section presents the theoretical framework. Next, the method is described, then the results are presented, followed by the discussion of the results and finally, in section six, the final considerations are presented.

2 .Theoretical Background

2.1 University-Industry Collaborations (UIC)

The importance of UIC began receiving recognition in the 1970s, but it was in the 1980s that these collaborations started to gain prominence (Garcia & Suzigan, 2021). The pioneer in promoting interaction between educational institutions and companies was the United States of America, which, in 1980, created mechanisms to establish intellectual property rights over university inventions (Ribeiro et al., 2018). This gave rise, still in 1980, to the US law called the Bayh-Dole Act, which is considered the milestone responsible for expanding of the idea of UIC in the United States and the world (Silva & Sartori, 2022).

This trend spread to other countries which, based on US law, implemented similar legislation, prompting the emergence and consolidation of technology transfer offices (Moreno, 2018). By the end of the 20th century and the beginning of the 21st century, this synergy in knowledge transfer became a widespread phenomenon in the world (Ribeiro et al., 2018).

UIC refers to a set of formal collaborations aimed at promoting the generation, dissemination and transfer of knowledge, technology and the provision of specialized services (Calderón-Altamirano & Rodriguéz, 2023; Costa

et al., 2010). The collaborations aims to foster innovation and technological evolution, contributing to social and economic development (De Fuentes & Dutrénit, 2012; Figueiredo & Fernandes, 2021; Hajrizi & Shaqiri, 2024; Puffal et al., 2021).

In this context, universities have evolved to become institutions committed to social and economic aspects (Dalmarco et al., 2018; Muñoz & Tenório, 2024). Industries have turned to the scientific knowledge produced by universities as a way of keeping up with technological advances (Arza, 2010; Ivascu et al., 2016) and achieving cutting-edge development (Perkmann et al., 2013).

In UIC, universities contribute their research capacities and industries their knowledge in the development and marketing of products (Hajrizi & Shaqiri, 2024). The UCI, therefore, results from the perfect symbiosis between universities and industries (Lopes & Lussuamo, 2021) and is recognized as a force that drives a country's development (Haase et al., 2012), as well as being a factor in fostering competitiveness and innovation (Fitriasari et al., 2024; Bala Subrahmanya & Arun Kumar, 2024).

Since the emergence of UIC, research in this field has expanded and diversified. Bastos et al. (2021) identified that, over the last 50 years, interaction factors (motivations, channels, barriers and benefits) have been the central issue in this field of research. These factors influence collaborations and allow relationships in UIC to be analyzed and understood (Garcia et al., 2020). The first factor, motivators, are the reasons or driving forces that lead universities and industries to collaborate with each other (Khachatryan et al., 2024). Motivators include: obtaining resources (Arza, 2010; Silva & Sartori, 2021); obtaining new ideas for research (De Fuentes & Dutrénit, 2012; Reina et al., 2023); and strengthening the university's image (Franco & Haase, 2015; Reina et al., 2023). The second factor, channels, are the way in which the transfer of information and knowledge takes place at the UIC (Figueiredo & Fernandes, 2021). Examples include: intellectual property rights (De Fuentes & Dutrénit, 2012; Nsanzumuhire & Groot, 2020); joint research projects (Khachatryan et al., 2024; Tartari & Salter, 2015); and scientific publications (Evans et al., 2023; Nsanzumuhire et al., 2021).

The third factor, barriers, are all the difficulties that can arise during collaboration (Kleiner-Schaefer & Schaefer, 2022) and prevent full success (Rossoni et al., 2023). These include: differences in approach (Bruneel et al., 2010; Lopes & Lussuamo, 2021); trust and confidentiality (Lopes & Lussuamo, 2021; Nsanzumuhire & Groot, 2020); and funding (Khachatryan et al., 2024; Nsanzumuhire et al., 2021). Finally, the benefits are the advantages that universities and companies aim to achieve with the UIC (Arza, 2010). Examples include: acquiring and transferring knowledge (De Fuentes & Dutrénit, 2012; Evans et al., 2023); personal satisfaction or reputation (Khachatryan et al., 2024; Van Rijnsoever & Hessels, 2021); and obtaining financial resources (Arza, 2010; Van Rijnsoever & Hessels, 2021).

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Despite the relevance of these studies exploring the factors that influence UIC, there is still a significant gap in the understanding of other less visible factors that can impact these collaborations. These are the individual characteristics of the researchers and, more specifically, gender. Research focused on the individual characteristics of university researchers (Franco & Haase, 2015) still leaves open questions related to gender (Crowe & Goldberger, 2009). Therefore, there is a scarcity of studies in the literature investigating how gender factors influence interactions. The main findings identified in the literature on the subject will be presented below.

2.2 The Gender Factor in University-Industry Collaboration

The characteristics of researchers have been identified in the literature as factors capable of influencing the possibility of cooperation between universities and industries. Among these characteristics, individual characteristics, such as age and gender, and professional characteristics, such as level of formal education and professional training, are considered determinants of researchers' propensity to collaborate with industry (Franco & Haase, 2015).

Within UIC studies that examine the actions and attitudes of researchers has emerged that specifically addresses gender factors in UIC. This field of research is divided into two areas. The first focuses on studies that present gender as a demographic characteristic, with a predominance of quantitative approaches, the use of questionnaires and a discreet approach to the subject, where gender is generally used as a variable to prove hypotheses. The second sphere covers studies that use gender as the main theme, with a predominance of qualitative approaches, data collection by interview and/or observation and a more in-depth view of the subject.

Several studies have shown the influence of gender on UIC and indicate that women tend to have fewer connections with companies than men (Abramo & D'Ângelo, 2021; Berger et al., 2015; Calvo et al., 2019; Huang et al, 2019; Tartari & Salter, 2015) and predominate in areas such as education and health sciences (Filippetti & Savona, 2017), while men excel in science and engineering (Tartari & Salter, 2015; Weng & Chang, 2016). Women often work in training services (Puerta-Sierra & Jasso, 2020), preferring education (Huang et al., 2019), while men work in consulting (Puerta-Sierra & Jasso, 2020) and marketing (Huang et al., 2019). The propensity to collaborate in UIC is higher among men (Abramo & D'Ângelo, 2021; Franco et al., 2014; Puerta-Sierra & Jasso, 2020), and women's intentions suffer from family responsibilities and ties to administrative activities (Abramo & D'Ângelo, 2021).

In addition, gender inequalities result in less funding for research (Crowe & Goldberger, 2009; Tartari & Salter, 2015), less access to networks (Calvo et al., 2019) and fewer contacts with companies for women (Crowe & Goldberger, 2009). Specific difficulties for women include a shortage of role models at universities, the need to

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

juggle multiple responsibilities (Tartari & Salter, 2015) and a lack of support (Shtewi & Shahzad, 2024). Cultural and social influences also hinder their participation (Puerta-Sierra & Jasso, 2020).

Furthermore, studies indicate the influence of gender stereotypes on UIC with women working in predominantly male environments (Tartari & Salter, 2015), facing discrimination and the imposition of gender roles (Puerta-Sierra & Jasso, 2020), as well as being forced to adopt behaviors in line with male norms in order to be accepted (Berger et al., 2015).

It is clear, therefore, that gender, to a greater or lesser extent, influences UIC Smith- Doerr and Croissant (2011) state that, in general, there have been no considerable changes in the years of the history of the UIC and that women remain at a disadvantage, given that the vast majority of those involved in cooperation are men.

3. Methodology

This study is characterized as a case study in terms of procedures, qualitative in its approach, exploratory in nature, and employs the content analysis method based on the stages proposed by Bardin (2016).

3.1 Population and Sample

The federal university of southern Brazil, where the study was conducted, was chosen because it has an effectively established University-Industry Collaboration program and because, due to the institutional affiliation of the researchers, it allows for greater access to participants and a more qualified analysis of the context studied.

More specifically, the object of study of the research is the leaders of Research Groups that carry out UIC, inserted in the context of this Brazilian university. According to the Directory of Research Groups in Brazil (DGP), based on the 2023 census, the university studied has 177 Research Groups. Although 78 groups maintain partnerships with other institutions and/or companies, only 20 of these groups carry out direct interactions with companies, configuring the universe of the research.

All 20 of these leaders were invited to participate through an invitation letter, and ultimately, 14 leaders — seven men and seven women — accepted the invitation to participate, signed the Informed Consent Form (ICF) and became part of the study sample, all meeting the inclusion and exclusion criteria presented in Table 1.

Table 1. Inclusion and exclusion criteria for Research Group leaders

Criteria	Reason
	1 - The research participant is listed in the DGP as a member of a Research Group at the federal university of southern Brazil.

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Inclusion	2 - The research participant is listed in the DGP as the leader of a Research Group at the federal university of southern Brazil. 3 - The research participant is the leader of a Research Group and carries out UIC at the federal university of southern Brazil. 4 - The research participant is a member of the staff of the federal university of southern Brazil, as a Professor of Higher Education. 1 - The research participant does not perform UIC.
Exclusion	2 - The research participant has not undergone UIC in the last year.

Source: prepared by the authors.

The leaders of the research groups have not been identified in order to maintain their anonymity, as assured to the participants in the ICF. Their names were replaced by codes and the leaders were identified as "GP Leaders".

3.2 Data Collection Instrument

In-depth interviews were carried out with the leaders of the Research Groups. The interviews were individual and mostly conducted online. They lasted an average of 49 (forty-nine) minutes and were all recorded, with the participant's permission, for later transcription.

The interview protocol began with questions about demographic and general information about the leader of the Research Group, and the following questions focused on the leader's experiences, positions, feelings and perceptions about UIC and about the gender factor and its relationship with UIC.

Before the interviews were conducted, a pre-test was carried out in order to identify and correct possible errors in the questionnaire. To this end, the script was evaluated by two experts, researchers from two different HEIs with knowledge and experience in the subject of UIC. The experts' comments were then incorporated into the final version of the script. The 14 interviewees only had access to the questions on the day and time scheduled for the interview.

Table 2 shows the demographic information of the Research Group leaders (gender, age, education, length of time with the institution, time leading the Research Group and area of knowledge), as well as the characteristics of the interview such as format and length of time.

Table 2. Characteristics of Research Group leaders and interview

Interviewees	Gender	Age	Education	Length of time with	Time as leader of the	Area of knowledge	Interview format	Length of interview

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

				the institution	research group			
GP leader 1	Male	39	Doctorate	8	8	Exact and Earth Sciences	In person	32 min
GP Leader 2	Male	43	Post-doctorate	15	14	Exact and Earth Sciences	Online	47 min
GP Leader 3	Male	39	Post-doctorate	10	10	Exact and Earth Sciences	In person	50 min
GP Leader 4	Male	56	Doctorate	9	9	Engineering	Online	50 min
GP Leader 5	Male	44	Post-doctorate	5	4	Engineering	Online	68 min
GP Leader 6	Male	69	Doctorate	48	27	Exact and Earth Sciences	In person	83 min
GP Leader 7	Male	47	Doctorate	10	9	Exact and Earth Sciences	In person	35 min
GP Leader 8	Female	42	Post-doctorate	11	11	Exact and Earth Sciences	Online	30 min
GP Leader 9	Female	41	Post-doctorate	9	8	Exact and Earth Sciences	Online	68 min
GP Leader 10	Female	70	Doctorate	42	11	Exact and Earth Sciences	Online	41 min

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

GP Leader 11	Female	44	Doctorate	13	7	Exact and Earth Sciences	Online	56 min
GP Leader 12	Female	55	Post-Doctorate	9	9	Engineering	Face-to-face	44 min
GP Leader 13	Female	48	Post-doctorate	15	11	Exact and Earth Sciences	Online	42 min
GP Leader 14	Female	38	Doctorate	6	5	Applied Social Sciences	Online	41 min

Source: prepared by the authors.

3.3 Data Processing and Analysis

The information collected was analyzed according to the content analysis established by Bardin (2016). Firstly, the content of the interviews with the 14 leaders of the UIC Research Groups was transcribed in Microsoft Office Word. In the pre-analysis stage, floating reading was carried out in order to capture the first impressions of the texts. Then, in the second stage, to establish the categories of analysis, the texts of the interviews were read repeatedly to identify important statements by the leaders and to code semantic units, classifying primary codes and detecting hidden content in the data. During the coding phase, phrases, sentences and paragraphs relevant to the objectives of the study were highlighted as semantic units. These units were coded using the participants' words and appropriate labels. The codes created were reviewed and compared, grouping similar cases into primary categories, which subsequently gave rise to subcategories and main categories.

Based on the content of the researchers' responses, the perceptions of Research Group leaders were organized into three main categories: (1) engagement in UIC; (2) leadership in UIC; and (3) cultural aspects of gender in UIC.

In the third stage, the results were processed, inferred and interpreted. This stage involved analyzing the categories previously drawn up, extracting meanings, contextualizing the data and presenting conclusions based on the material investigated.

4. Results

Based on the content of the researchers' responses, the perceptions of the Research Group leaders were organized into primary categories, subcategories and main categories, as shown in Table 3.

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Table 3. Categories of analysis

Primary categories	Subcategories	Main categories
Men and women have the same motivations for UIC The reasons for participating in UIC are intrinsic to each researcher The reasons for participating in UIC depend on the profile and the area The burden of working two hours discourages women Having to show that they know and are capable discourages women The presence of women favors other women The presence of young people favors women Access to UIC is independent of gender Access to UIC is the same for everyone Access to UIC is linked to university Participation in UIC depends on technical competence, profile and area Men have more possibilities and facilities to participate Structured machismo favors men's participation Women have unfavorable environments for participation Women need to take extra steps to participate Women need to be strong and assertive to participate Time and availability issues hinder women's participation Different opportunities favor men Access to the UIC creates barriers for women	Motivations Opportunities	Engaging in UIC

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

The results are the same and have no relation to gender		
The results of UIC affect the whole group It's people who get results from UIC, not their gender The results of UIC favor men Women have to work harder than men to benefit from UIC Women suffer for their UIC achievements	Benefits	
Leadership does not depend on gender Leadership is innate and intrinsic to each individual You have to have a profile and skills to lead Leadership in companies favors men Leadership in certain areas of knowledge favors men Male chauvinism contributes to male leadership The speech of a male leader is more respected Male leaders have a comfortable position and don't suffer There is an under-representation of women in leadership positions Women's leadership is put to the test Leadership for women is more difficult Women leaders need strength and energy to be heard	Influence of the leader's gender	Leadership in UCI

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

It is better to lead men, they are pragmatic		
It is better to lead women, they are more methodical	Influence of the gender of those led	
It is better to lead diverse groups		
The leader cannot distinguish between those being led		
The leader has to manage efficiency, not gender		
Leading diverse groups is very difficult		
Diverse groups enrich the work of the group and the leader		
In diverse groups the leader acquires empathy and versatility There is a predominance of men		
The corporate environment values men	Gender influence	
There is a majority of men in certain fields of study	Barriers	
Men and women are viewed differently	Diversity	
Men are seen as strong, dedicated and competent		
Women need to assert themselves		
Men have time on their hands		
Women work a double shift		
Men are valued		
Women's speeches need to be validated by men		
Women can teach, but should not negotiate		
Structural machismo is an obstacle for women		
Prominent roles belong to men		
Unavailability of time disadvantages women		Cultural aspects of gender in UIC
The company distrusts women's capacity and ability		

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Women need to prove they are competent Family issues make UIC difficult for women Gender can be used against women Men and women face different situations when it comes to taking part in UIC The greater number of men in UIC makes it difficult for women to attend Diversity is irrelevant to the groups UIC needs efficient "people" The "people" in the group have to solve the problems What matters in the group is competence Diversity benefits the group Different characteristics enrich work and research The more diversity, the more efficiency Diversity brings evolution and growth Diverse groups complement each other Gender roles still exist		
Cultural heritage benefits men Remnants of structural machismo make it possible for men to participate The UIC environment is still very masculine There is little representation of women in UIC Men predominate in management Men have the commanding voice Women are still not listened to Some areas and activities are difficult for women Stereotypes are being reduced There is a downward curve in gender roles Companies have adopted affirmative action	Gender stereotypes	

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Women are already present in engineering There is a long way to go		

Source: prepared by the authors.

The perceptions of the Research Group leaders, based on the three main categories of analysis established (engagement in UIC, leadership in UIC and cultural aspects of gender in UIC), will be presented below.

4.1Engagement in UIC

Engagement in UIC involves motivations, opportunities and benefits, which are interlinked in a cyclical movement where motivations drive engagement, expanding opportunities and benefits, promoting and stimulating greater participation in UIC.

4.1.1 Motivators

Do the motivations for participating in UIC differ according to gender? To this question, the majority of Research Group leaders answered that the drivers are shared regardless of the researcher's gender, because the motivations are intrinsic to each individual, their profile, their training and their area of activity.

Speaking from my experience, I understand that the motivation is the same, at least when it comes to my Research Group, the contacts I have. [...] Bringing real examples into the classroom, having publications, in short, I believe it's shared regardless of gender. (GP Leader 14)

Some, however, argued that the motivators are different and that, for this reason, the presence of men is greater than that of women in UIC (GP Leaders 1 and 9). Women have different motivations because they don't have time to dedicate to cooperation due to the overload of activities imposed on them at home and at work (GP Leader 3) and are more likely to take part in UIC when companies have other women or younger leaders in their environments (GP Leader 2).

4.1.2 Opportunities

The majority of male leaders considered that opportunities are equal for men and women, while the majority of female leaders understood that women are disadvantaged, evidencing a polarization in the experiences of participation in UIC.

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Some leaders pointed out that although there are still cultural issues and the presence of machismo in society, these do not affect participation in UIC (GP Leaders 4, 6, 10), as participation is dependent on the personality, training, technical competence and interest of each individual (GP Leaders 4, 6, 7 and 10).

In our research group, these opportunities are now equal, because we have established flows to distribute interaction with the company. These flows work as follows: people are pre-registered as possible project prospectors and every new project is launched and anyone can apply to talk to the company. And then the professors self-organize, and we even have projects coordinated by female professors from other academic units. So, we give equal opportunities to everyone. Our university gives us this, including in terms of interaction." (GP Leader 2)

Some leaders said that the obstacles to women's presence arise in communication with companies, because the environment values men and is unfavorable to women's participation. In addition, women's lack of full availability is taken into account to the detriment of their abilities and skills, with the prevailing understanding that they can compromise results, which ends up favoring men (GP Leaders 9 and 11).

The industry still sees men as the strong ones, the ones who are available, and the ones who have the time. So, the industry always sees men as the strong ones. [...] They see a greater availability of time, of schedules, of dedication, of different actions. Women have to show that it's possible." (GP Leader 13)

Segmentation by area makes opportunities favor men (GP Leader 11). In addition, due to the lack of confidence in their abilities, women always need to take extra steps, be assertive and prove that it is possible and that they know how to do it in order to take part in UIC (GP Leaders 12 and 13).

Although half of the sample considers opportunities to be equal, experiences and perceptions differ between men and women, indicating that gender has an impact on participation opportunities, as indicated by the perceptions of the majority of women.

4.1.3 Benefits

Do the benefits obtained from the UIC differ according to the gender of the researchers? A slight majority of male leaders suggested that the benefits derived from the UIC are not influenced by gender, while the vast majority of female leaders pointed out that gender is a relevant factor in obtaining the rewards of the UIC.

The understanding that the benefits are the same, regardless of the researcher's gender, was based on the principle that the work takes place in groups, in partnerships, and that, in the same way, the benefits extend to everyone (GP leaders 3, 4, 7, 8 and 13). Gender has no significance, as cooperation is done by "people" who collaborate equally and benefit at the end of the process (GP Leader 5).

The opposite view considers that the benefits are affected by the gender of the researcher, to the disadvantage of women. "There are greater benefits for men. There is a legacy of this macho cultural environment, a much greater protectionism for men" (GP Leader 9) because the efforts are not the same. The effort a woman has to make to obtain a benefit is much greater than that made by a man to obtain a similar benefit in UIC (GP Leader 12).

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Men reap the greatest benefits in UIC and this is a directly proportional relationship, since men devote more time and are better accepted in UIC and, as a result, reap more benefits from this collaboration. To get the same results, women need much more time and effort (GP Leader 14).

Having concluded the presentation of the results of the first category of analysis, engagement in UIC, we will tegory two, leadership in UIC, and its subcategories.

4.2 Leadership in UIC

Leadership in UIC was the second main category of analysis. It includes subcategories related to the influence of gender issues on leaders and their Research Groups.

4.2.1 Influence of the Leader's Gender

A small number of leaders considered that the gender of the Research Group leader influences leadership due to cultural issues and structural machismo that can make it difficult for women to accept leadership and create additional challenges for them to prove their competencies.

Women's leadership is put to the test by the people they lead. Depending on the situation, you really have to be very energetic to be able to speak and make someone understand. But I'm sure that the behavior wouldn't be this aggressive if it were a man. (GP Leader 8)

However, for the majority, the gender of the researcher has no impact on leadership effectiveness, as the ability to lead is not related to gender. It is intrinsic and depends on the profile of each individual. It's the competence and ability of a leader that matters and makes the difference in UIC (GP leaders 3, 7, 8, 11, 12 and 14).

I think it doesn't matter what gender you are. Leadership lies in the person's profile. You can have a heterogeneous group that works very well, you can have a homogeneous group that works very well, but you have to be a born leader. If you're not a born leader, you'll never lead anyone. And that's the difference. For me, that's what comes first. It's the leadership spirit, then it's how you work with it. If you have the spirit of a leader in any situation you work in, you'll do well. (GP13 leader)

4.2.2 Influence of the Gender of Those Being Led When the leaders of the research groups were asked about the relevance of the gender of their team members to their leadership, a few leaders said that the gender of their team members has an influence on the leadership of their groups, and that they therefore prefer to lead homogeneous groups because they believe that people have the same responses to the same stimuli: men are more direct, punctual, incisive and objective, favoring decision-making (GP Leaders 11 and 14) and women are more assertive, dedicated and methodical (GP Leader 6).

The vast majority reported preferring to lead heterogeneous groups and pointed out that the gender of those they lead does not affect their leadership. This type of leadership gives the leader versatility and empathy, as it allows them to see and understand the other person's perspective, as well as enabling them to get to know the particularities inherent in each leader and use this learning to achieve the objectives and results sought by the group (GP Leader 12).

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

In my opinion, gender has no influence, because I measure the group by its efficiency. Gender doesn't change anyone's efficiency.

So, regardless of gender, what matters is being efficient. So, you can be whatever you decide to be. What will make them different is their efficiency. So, nothing will change that. Those who are efficient are able to interact regardless of their gender and don't worry about it. (GP Leader 13)

Having presented the results of the second category of analysis, Leadership in UIC, we will now look at the results of category three, cultural aspects of gender in UIC, and its subcategories.

4.3 Cultural Aspects of Gender in UIC

The cultural aspects of gender category were established based on the understanding that cultural gender issues relate to the ideas, values, norms and expectations that a society has about the roles, behaviors and characteristics considered appropriate for men and women. This category was made up of four subcategories called: (1) gender influence; (2) barriers; (3) diversities; and (4) gender stereotypes. The evidence from this study for these subcategories is described below.

4.3.1 Gender Influence

A small majority of male Research Group leaders considered that gender does not influence the UIC, while the majority of women considered that gender does have an impact on collaborations.

For those who did not perceive the influence of gender on UIC, the key is technical qualification, training, synchrony between individuals in the process and a focus on problem- solving and results (RG leaders 4, 5, 7).

Those who perceived the influence of gender in UIC pointed out that men are in the majority (GP Leaders 1, 8 and 10) and that women face difficulties in this tough, masculine environment, being accepted as educators, but suffering rejection when acting as negotiators (GP Leader 3) and being forced to constantly assert themselves, using their skills and technical capacities (GP Leaders 2 and 14): "you have to do five times as much as any man in the same area to be able to hold your own and show that you are capable and know what you are doing" (GP Leader 9).

These industrial partners with whom we develop collaboration... It's funny how sometimes, in meetings, you subtly notice a tendency to value more what is said by a man. It seems that we need to be validated. What you've said needs to be validated by a male speaker. So, there is still less and less... I think that the more women participate in these interactions, the more we break down barriers, but there are. (GP Leader 12)

During the interviews, some male leaders stated that gender does not influence UIC, citing the example of a certain female researcher. However, this example is in the minority, as she is one of the few women in her field who works with UIC. This attitude may reflect a lack of knowledge about gender issues and the differences in UIC, because by emphasizing an exception as the norm, these leaders may be minimizing the obstacles that hinder the inclusion and full participation of women.

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

4.3.2 Barriers

The majority of the 14 leaders believe that there are gender barriers, especially to women's participation in UIC. Those who did not perceive any barriers said that what matters is the training, competence and efforts made by researchers to achieve results and not the gender with which they identify (GP Leader 7).

The majority who perceived gender-related barriers cited problems that do not usually occur for men, but which are obstacles to women's participation in UIC, such as family issues, the double burden, lack of time and availability, and distrust of their skills (GP Leaders 3, 4, 6, 8, 10 and 12). "I can see that, in most of our interactions with companies, this can be a problem. Society is still very sexist" (GP Leader 2).

Maybe they consider women to be less capable, less intelligent, in short... Some issues that, when reproduced, and this sounds like I'm talking about something from 300 years ago. But, anyway, it's possible that it's still in some people's minds, right? So, depending on the audience, this can be a particular barrier in an area where men predominate, right? (GP Leader 14) Within this context, GP Leader 2 reiterates that:

There are prominent women in their careers. They are excellent in their profession, they have many projects, many interactions, but they have always suffered a lot in the process of conquering their space. [...] There is a difference, because if there wasn't a difference, the things I've been through and the things women have been through would be the same, and I know they're not.

4.3.3 Diversities

When asked about the importance of diversity within research groups, most of the leaders responded that the presence of diversity in groups is a relevant and positive factor.

They argued that the greater the diversity in research groups, the richer and more efficient the interaction. Diverse groups bring together knowledge and create complementarity when each member brings their own perspectives, experiences, ideas and skills. Everyone listens and has a voice, favoring work and development (RG leaders 3, 5, 6, 7, 9 and 14). When you have different people thinking in different ways, research, discussions, work and interactions are enriched. Diversity allows research and interaction to evolve, but also the human being, the citizen. (GP leaders 8 and 13). "Heterogeneous groups facilitate cooperation and development" (Leader of 13).

4.3.4 Gender Stereotypes

The majority of male leaders said that gender stereotypes have disappeared, while the majority of women said that there are still inheritances that reinforce traditional roles in UIC environments.

Those who believe there are no more gender stereotypes said that UIC values expertise, technical competence and experience, offering equal opportunities to men and women (GP Leaders 4 and 10). They believe that the actions and regulations of the institutions are eliminating these barriers and promoting the advancement of women in areas previously dominated by men (GP Leaders 5, 6 and 7).

On the other hand, several leaders said that cultural aspects and the favoring of men still prevail in UIC. They felt that spaces for women's participation are reduced, women's voices are less accepted or need to be legitimized by

male voices. Even though they recognized that there are already initiatives to reduce inequalities, they argued that there is still a long way to go before the barriers and limitations created by prejudice and cultural issues provide women with equal conditions and opportunities to men in the workplace (GP Leaders 8, 12 and 14). "Maybe we're having less. Perhaps in the perspective of a downward curve, but still persevering" (GP Leader 3).

Some leaders who said that gender roles no longer exist used expressions that reflect gender stereotypes, such as saying that women are more delicate or organized, and that men are stronger, more direct or objective. This shows that these stereotypes are still present, often unconsciously, influencing perceptions and attitudes in everyday life. The results seem to reflect that men who believe that stereotypes have been overcome ignore the experiences of exclusion, as well as the barriers and limitations that some women face in their interactions.

5. Analysis of the Results

Developed within the context of a Brazilian federal university, focusing on the analysis of its specific institutional reality, this research studies a factor that is scarcely and superficially addressed in the literature on UIC: the gender factor. The study reveals that, among the personal characteristics of Research Group leaders, the gender factor stands out as an element capable of influencing the dynamics of collaboration between universities and companies. Thus, the gender factor emerges as an additional factor and adds to those that can impact on UIC, as shown by the results of the categories of analysis.

The category engagement in UIC was established based on the understanding that people are attracted to UIC for various reasons (Ankrah & Al-Tabbaa, 2015; Khachatryan et al., 2024) and the fact that these collaborations can provide researchers with various opportunities and benefits (Evans et al., 2023; Van Rijnsoever & Hessels, 2021). The second category, leadership in UIC, formed by the subcategories influence of the leader's gender and influence of the leader's gender, was based on Calvo et al. (2019) understanding that effectiveness in collaborative projects does not depend on the gender of the leader, reinforcing the idea that the performance and results of these partnerships are not influenced by the gender of the leaders. Finally, the category cultural aspects of gender in UIC were built on the understanding that the subcategories gender influence, barriers, diversity and gender stereotypes are directly related to the main category and based on Berger et al. (2015) assertion that gender practices are routinely reinforced in UIC.

The category engagement in UIC was broken down into the subcategory's motivators, opportunities and benefits. As for motivations for participation, the majority of Research Group leaders believe that men and women share the same motives, in contrast to studies by Puerta- Sierra and Jasso (2020) and Shtewi and Shahzad (2024), who indicated that motivations are different, as women are influenced by prejudices, cultural issues and family responsibilities. As for opportunities, evidence shows that men find it easier and more opportune to participate, resulting in an unfavorable environment for women, corroborating Franco et al. (2014), who pointed out that gender disparity hinders female inclusion in partnerships. Regarding the benefits, most leaders recognize that they

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

favor men, due to their greater presence and cultural acceptance, in line with the findings of Huang et al. (2019) who stated that men achieve better results in UIC activities.

The leadership category in UIC was divided into the subcategories influence of the leader's gender and influence of the gender of those being led. In the first subcategory, the majority of Research Group leaders believe that the gender of the leader has no impact on UIC, corroborating the studies by Tartari and Salter (2015), which indicate that the effectiveness of partnerships does not depend on the gender of the leader and that women leaders, when motivated, perform in an equivalent way to men. In relation to the influence of the gender of those being led, the study reveals that this is also irrelevant to UIC, since leaders prefer diverse and versatile teams, which is consistent with the conclusions of Tartari and Salter (2015), who pointed out that diversity can provide social support and mentors, favoring women's involvement and helping to achieve both individual and group goals.

The category cultural aspects of gender in UIC included the subcategories gender influence, barriers, diversity and gender stereotypes.

The subcategory gender influence revealed that women recognize this influence, while many men do not, showing a lack of perception about the difficulties faced by women in a predominantly male environment, as identified in studies by Abramo and D'Angelo (2022) and Vivar-Simon et al., (2022). The subcategory barriers highlighted that men are more valued and women need to assert themselves, dealing with family pressures and a lack of female role models, corroborating studies that have highlighted barriers for women such as those by Tartari and Salter (2015) who pointed to barriers relating to a lack of female references and peers, and those by Shtewi and Shahzad (2024) who cited time and long working hours as obstacles.

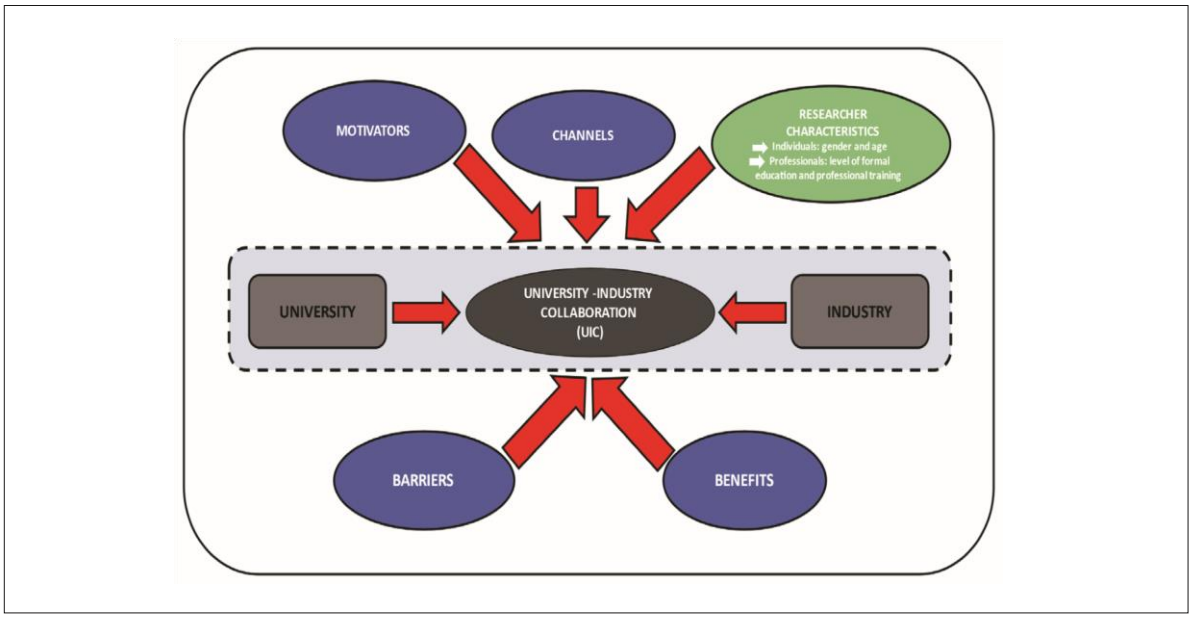
ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

Still within the category of cultural aspects of gender in UIC, regarding the diversity subcategory, the leaders consider it essential for the success of UIC, in line with Wheng and Chang (2016) and Tartari and Salter (2015) who stated that diversity is an influential factor in the effects of UIC and with Filippetti and Savona (2017) who stated that diversity contributes to reducing female under-representation. Finally, with regard to stereotypes, some male leaders believe that they have already been overcome, but many still reproduce gender patterns, reflecting a lack of knowledge of the reality experienced by women who, in turn, continue to face inequalities and a lack of representation in UIC. This understanding is confirmed by Shtewi and Shahzad (2024), who point out how cultural norms hinder women's inclusion in UIC, and by Berger et al. (2015), who point out that subtle gender "doings" in d dynamics of University-Industry Collaboration (UIC). In this sense, gender emerges as an element that can

Figure 1. University-Industry Collaboration Factors



The results of this study, limited to its specific institutional contexShould be noted, however, that the consolidation of this factor de
Indicate the potential of gender as a factor capable of impacting theends on conducting additional studies in different contexts and with

cease to be a non-evident factor and become considered, among the characteristics of researchers, as potentially influential in partnerships, as illustrated in Figure 1. It other methodological approaches. In addition to motivations, channels, barriers, and benefits, the study of the gender factor can serve to broaden the understanding of relationships in UIC and to foster the dynamics of this collaboration. Daily relationships reproduce and reinforce gender inequalities.

ISSN: 3065-0712

Current Research and Innovations Journal

Research Article

6. Final Considerations

The general aim of this study was to identify the perceptions of the leaders of Research Groups on UIC at a federal university in southern Brazil regarding the influence of the gender factor on UIC. In order to meet the proposed objective, in-depth interviews were carried out with 14 Research Group leaders, seven of whom were men and seven women. The data collected were processed and analyzed using to content analysis, based on Bardin's (2016) approach.

This article makes three contributions. The first is the recognition that the gender factor, albeit to a moderate extent, has an influence on UIC. The results indicated that the gender of the researchers can be a barrier to UIC, especially for women due to the lack of role models, family issues and mistrust in their abilities. Gender stereotypes, even if practiced unconsciously, hinder the full inclusion of women and perpetuate the predominance of men.

Furthermore, men have more opportunities to participate, while women need to prove their abilities and use assertiveness in order to be accepted. In addition, men tend to benefits more due to greater participation and cultural acceptance, while women need to make greater efforts to obtain equivalent benefits.

The second contribution is the finding that the results of UIC are not directly related to the gender of the leader or their team members. The functioning of partnerships and the results generated depend on skills, competencies and teamwork and not on the gender of those who lead or are led. The ability to lead was understood as a competence inherent to the individual qualities of the leader and not to their gender. In addition, the motivations to participate in UIC were also considered to be independent of gender, indicating that both men and women can contribute equally to the results. This indicates that the gender factor does not directly affect the effectiveness of UIC.

The third contribution is the indication that diversity in teams can be understood as a positive factor for UIC, as different ideas, experiences and perspectives can serve as a stimulus for cooperation and make it more innovative and creative. Diversity can promote an inclusive environment and personal appreciation, thereby boosting and enriching partnerships and contributing to the achievement of results in UIC.

This study has limitations that should be considered when interpreting its results. The sample, consisting of 14 Research Group leaders, as well as the empirical scope restricted to a single federal university, prevents the generalization of the findings to other institutional contexts or to the Brazilian university system as a whole. It is, therefore, an exploratory diagnosis, whose purpose is to gain a deeper understanding of the dynamics of UIC in the specific context of the university studied, and the results should be interpreted in light of this scope, contributing to the academic debate by offering analytical and interpretative evidence, and not conclusions of a generalizable nature. Within this context, the study presents two main implications, one theoretical and the other managerial. From a theoretical point of view, it contributes to broadening the understanding of gender issues in the UIC and the challenges faced by Research Group leaders in their decisions and practices in this environment.

From a management perspective, the study provides support for the adoption of actions aimed at promoting equality and diversity, such as establishing institutional partnerships, investing in gender-related training, and encouraging the formation of multidisciplinary teams, in order to strengthen more effective, innovative, and equitable collaborations.

Finally, this research offers perspectives and insights into the influence of the gender factor in UIC. It is expected that the findings, although local, will serve as a basis for future investigations and interventions and, with that, promote more inclusive UIC environments. Thus, the study not only enriches academic knowledge but also seeks to contribute to building a more equitable scenario in UIC, where everyone can participate and evolve.

References

Almeida, R. T., & Fonseca, L. M. (2024). Drivers of academic engagement in university-industry partnerships: Evidence from Brazilian federal universities. Journal of Innovation & Technology Transfer, 20(3), 1452-1476.

Castro, F. A., & Ribeiro, M. P. (2023). Universities and industry collaboration: Systematic insights from Latin America. Scandinavian Journal of Management Studies, 32(1), 215-239.

Silva, T. V., & Gomes, R. L. (2025). Managing innovation in academic research groups: Lessons from Brazilian STEM fields. Journal of Technology Management and Innovation, 21(2), 25–39.

Pereira, C., & Montalvão, J. A. (2011). Knowledge transfer channels in public-private interactions: A framework for emerging economies. Science and Public Policy, 38(5), 389-402.

Lima, B. F., & Carvalho, D. S. (2024). Entrepreneurial universities in Brazil: Case studies of federal institutions. Journal of Technology Management and Innovation, 21(4), 101–114.

Martins, A. P. (2017). Análise de conteúdo aplicada à pesquisa em gestão da inovação. São Paulo: Editora Acadêmica.

Rodrigues, H. C., Santos, E. J., & Vieira, M. L. (2022). Fifty years of university-industry partnerships: A bibliometric perspective. Science and Public Policy, 49(1), 98–119.

Fernandes, L., Almeida, V., & Sousa, P. (2016). Gendered experiences in networking for university-industry innovation projects. Gender, Work & Organization, 23(3), 401-422.

Nogueira, J., Dantas, P., & Melo, A. (2011). Reducing barriers in university-industry collaboration: Key empirical insights. Research Policy, 40(8), 912-923.

Alencar, M., & Figueiredo, R. (2023). University-industry technology transfer in Brazilian public universities: A configurational approach. Journal of Technology Management and Innovation, 20(4), 45–61.