Empowering Women in the ICT Sector: Addressing Gender Inequality in Albania and the Wider Western Balkans

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Introduction

The Information and Communication Technology (ICT) industry plays a pivotal role in shaping the future of nations and economies worldwide[1]. It is a sector of boundless opportunities, innovation, and growth. Yet, in the Western Balkans, particularly Albania, a stark gender gap exists within this transformative industry. The profound disparity in ICT participation and representation between genders can be attributed to a multifaceted interplay of factors, including deep-seated societal norms, limited accessibility to educational and training resources, and persistent gender bias [2,3].

Objective

Our objectives focus on understanding, addressing, advocating for, and empowering regions to reduce gender disparities in university registrations across the Western Balkans.

1. **Identify Trends**: To identify gender registration trends in higher education across different regions.
2. **Address Disparities:** To address disparities by tailoring solutions to regional needs.
3. **Promote Inclusivity:** To advocate for gender inclusivity in higher education.
4. **Empower Regions:** To empower regions with strategies for gender balance in education.
5. **Advance Women in ICT:** To apply these insights to empower women in the ICT sector.

Methods

The methods we use are divided into three main components.

Data Collection:
- We collected registration data from universities in Albania, Kosovo, and North Macedonia over the past years.
- The data included gender-specific information, enabling us to analyze gender disparities.

Statistical Analysis:
- We performed statistical analysis to quantify the gender gap in university registrations.
- This involved calculating percentages, growth rates, and trends to assess the extent of gender inequalities.

Qualitative Analysis:

Qualitative data from *surveys* and *interviews* were analyzed to uncover themes related to gender disparities, societal influences, and potential solutions.

Analysis

This section presents a graphical depiction of gender-specific university registration statistics for the years 2017-2023 in three locations within the Western Balkans. The figures visually represent the distribution of university registrations between female and male students in ICT, emphasizing notable patterns and discrepancies. The observed trends have significant implications for gender inclusivity and equity in the ICT industry. Addressing the gender gap is crucial for creating an inclusive and dynamic workforce.
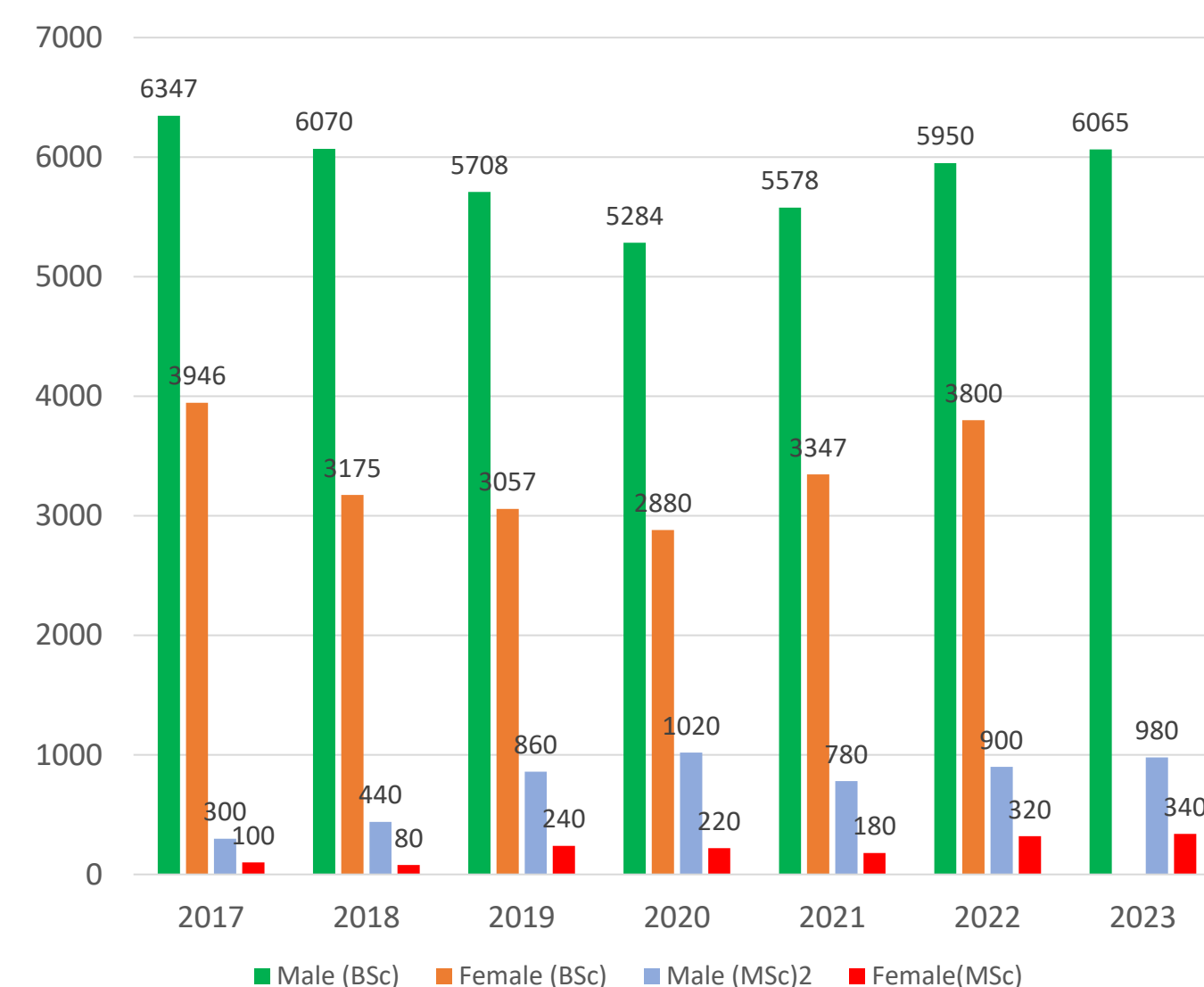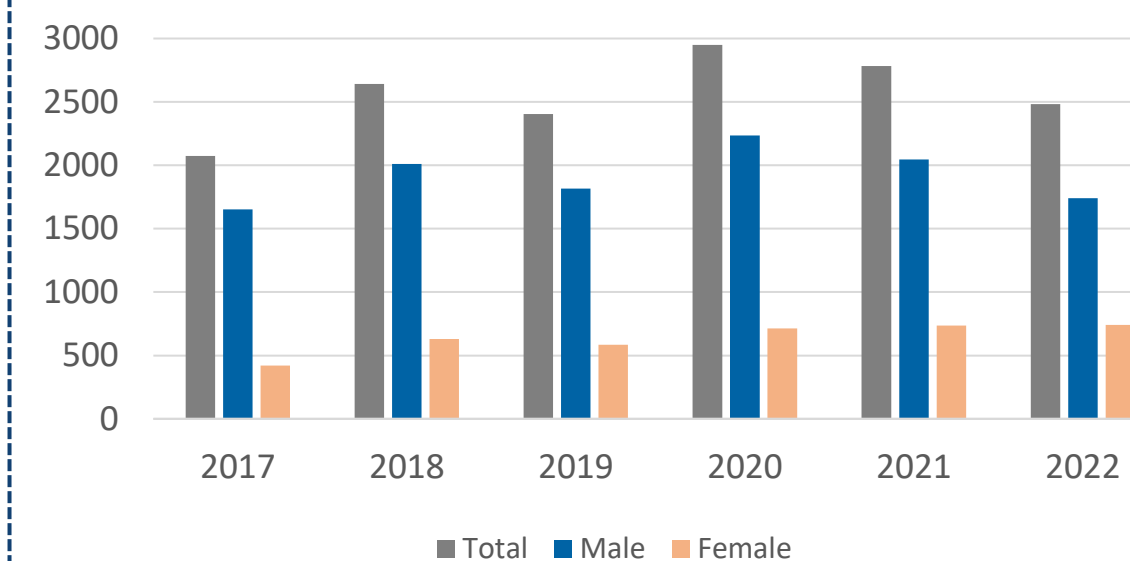

Figure 1. Student registrations for CS in Albania

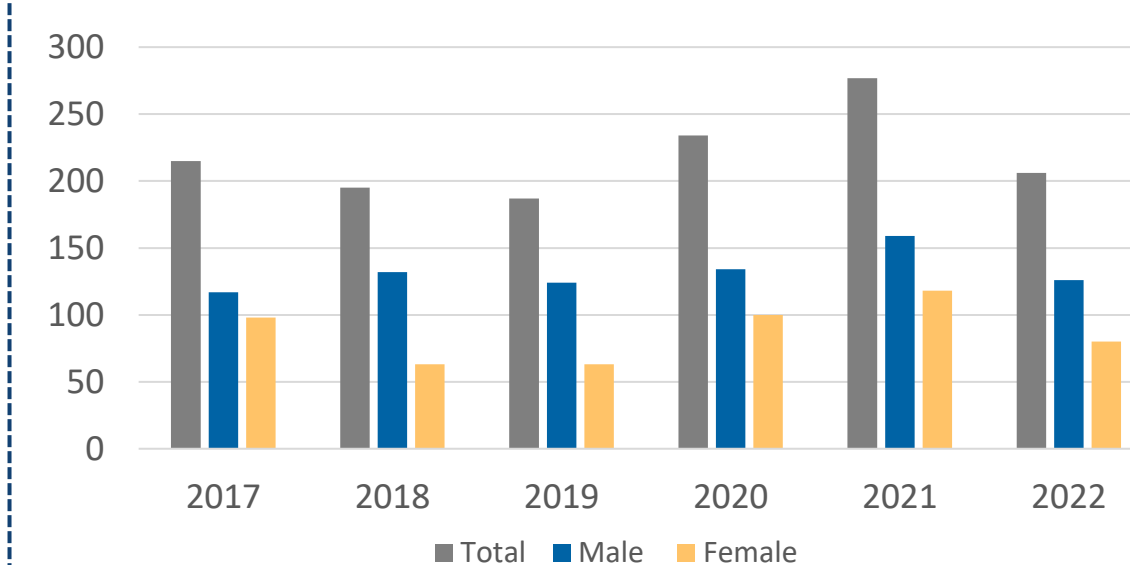**Figure 2. Bachelor student registrations for CS in Kosovo**

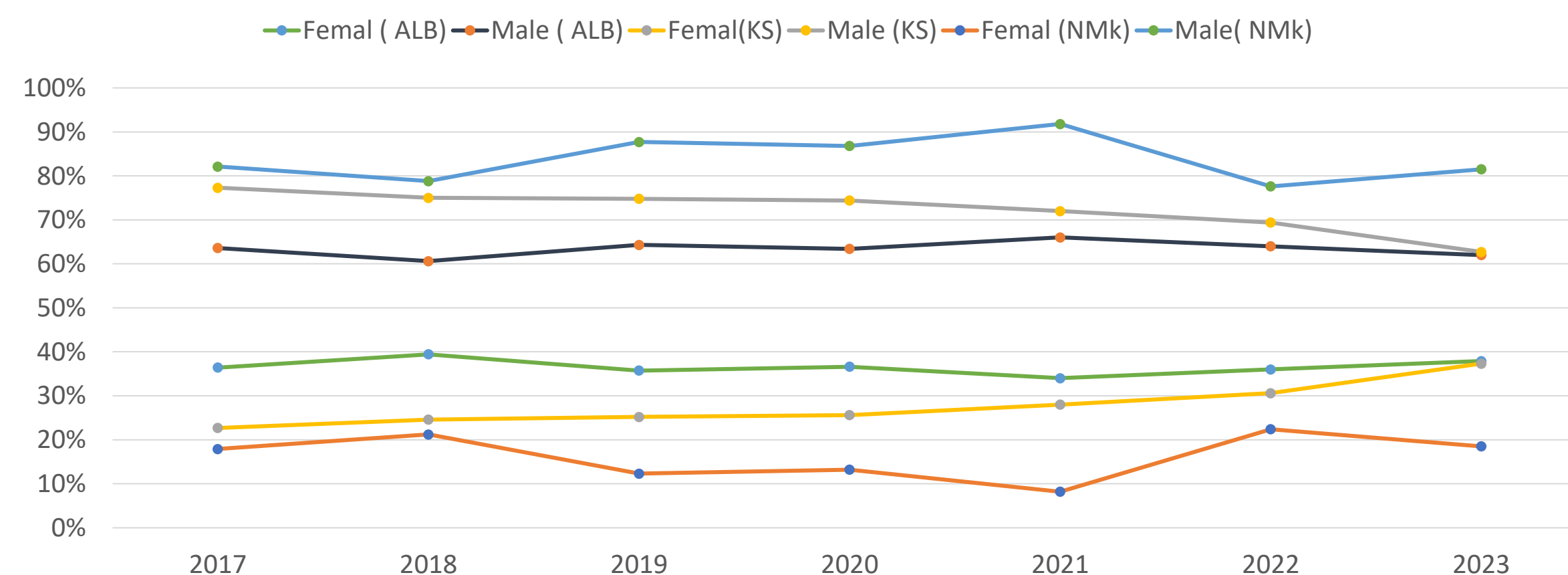**Figure 3. MSc. student registrations for CS in Kosovo**

Figure 4. ICT Student Registration in Universities by Gender (2017-2023)

Results

Our analysis of university enrollment data across the Western Balkans, covering the years 2017-2023, reveals compelling gender disparities within the ICT industry, with varying degrees of inequalities in female and male enrollments in three regions. In Albania and Kosovo, an unbalanced distribution was observed, where female registrations did not exceed male registrations. This trend implies a non-proactive commitment to gender inclusion in higher education. However, we can say that **the trend of female registrations is increasing**, especially in the last 3 years, as shown in the figure below.
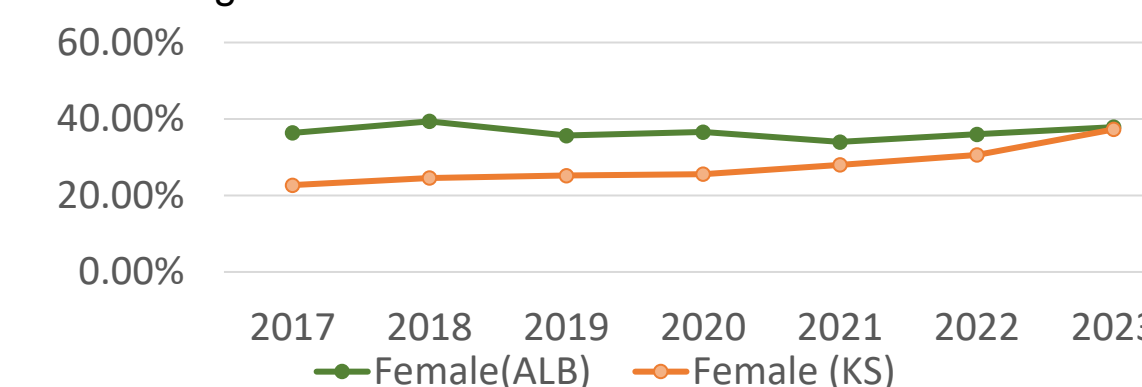

Figure 5. The trend of female registrations in Albania and Kosovo

In North Macedonia, a more significant gender inequality was noted, where male university registrations significantly surpassed female registrations. This underlines a pronounced disparity in higher education participation between genders in the region.
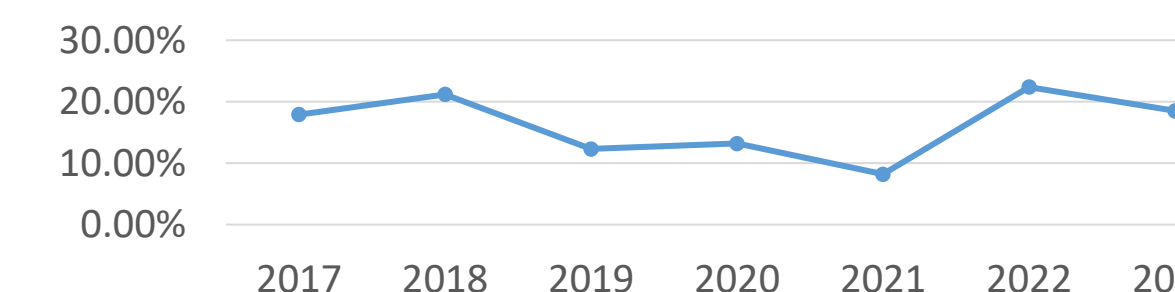

Figure 6. The trend of female registration in Universities in North Macedonia

Meanwhile, according to our survey analysis, 3 main themes were factors that women do not choose ICT studies:
1. A **masculine culture** leads to a lack of identity fit.
2. **Lack of early exposure** to the subject (Computer Science and coding)
3. **Lower self-efficacy** of women

The solution we suggest is to make the university environment more hospitable for women: (1) the authorities should *strongly encourage young people* to study ICT technical fields; (2) motivation to study CS linked to their goal of getting a well-paid job; (3) female role models in teaching ICT.

Conclusion

The study contributes to the literature offering an exploration of the experiences of CS universities in the Western Balkans countries. Understanding these patterns, as well as the underlying societal and cultural elements that drive them, is the first step toward building a more inclusive environment for women in ICT throughout the Western Balkans. This entails targeted interventions, regulatory changes, and the promotion of equitable opportunities across gender and geographic lines. As we consider our findings, we acknowledge the importance of a collective effort involving educational institutions, politicians, and the ICT sector itself to tear down obstacles and empower women to participate fully and equally in the dynamic field of Information and Communication Technology.

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