International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

# Empowering Women in ICT: A Case Study of Female Faculty and Students in State Universities and Colleges (SUCs) in Jolo, Sulu, Philippines

**Nureeza J. Latorre[1], Datu Al-Mujiv A. Kiram[2], Sali S. Mannan[3], John Mark R. Julaspi[4], Sharina P. Baddiri[5], Marhana J. Jul-ambri[6], Adzmar A. Ahamad[7]**

[1,2,3,4,5,6,7]Faculty, Mindanao State University-Sulu

**Abstract**

The case study on ***Empowering Women in ICT: A Case Study of Female Faculty and Students in State Universities and Colleges (SUCs) in Jolo, Sulu, Philippines,*** delves into the complex realities of women involved in ICT through their faculty and academic outcomes in an educational context traversing territories of cultural conservatism, economic vulnerability, and insecurity. Giving emphasis to ICT as an influential driver of socio-economic development, this study aimed to uncover the barriers or enablers that affect women's participation in the ICT programs of SUCs in Jolo.

Adopting a qualitative case study design, this research closely examines the experiences of female faculty and students in ICT programs. The participants were purposely sampled to include individuals with meaningful academic or professional experiences. Data was collected using semi-structured interviews, focus group discussions (FGDs), and document reviews of institutional policies and records. The multi-method approach allowed for an in-depth investigation of the personal, institutional, and societal barriers and enablers for women working in ICT. The data was examined using a thematic analysis approach, enabling the identification of significant themes and recurring patterns reflective of the experiences of participants.

The results show that such entrenched cultural norms remain a powerful influence on social expectations of women in Jolo. Conventional gender norms typically dissuade women from obtaining a higher education and pursuing careers in technology, thereby upholding the idea that they belong in the home. At SUCs, institutional challenges continue to limit women's participation. Without adequate ICT infrastructure, limited access to relevant learning resources, and the lack of gender-aware/responsive policies, women are not fully able to thrive academically and professionally in ICT.

The UN must advocate for institutional change on a global level with the greatest need in the region, as ongoing security issues restrict women's movement, the tangible mobility needed to engage beyond the classroom as university activities, including workshops and resources, are often limited to their locations. Economic difficulties also play a role in this dilemma where access to a personal computer, reliable internet, and other ICT tools are all limited by economic status for many women. They form interlinked barriers that create complex sets of challenges, limiting female participation and success in ICT programs.

But even amidst these challenges, the report also found glimmers of progress. Some of them have said that their families and communities had started to accept their education in ICT, reflecting a gradual cultural change. This narrative of increasing support presents a pivotal moment for educational institutions and policymakers to capitalize on these positive developments and develop initiatives that facilitate greater empowerment of women in the ICT sector.

In light of these findings, the study provides a number of key recommendations to help create a more inclusive and supportive environment for women in ICT:

1. Enforce Gender-sensitive Policies: At an institutional level, ESL institutions should also adopt policies that are deliberately inclusive of women's participation in ICT through mentorship programs, leadership opportunities, and targeted scholarships.
2. Build on ICT Infrastructure Strength: Providing access to modern equipment, as well as stable internet connectivity to level the entry point, and creating an accessible learning environment for all.
3. Mobilize Communities to Advocate for Women in Technology: SUCs should work with local government units and community leaders to empower women in technology fields and challenge oppressive gender norms.
4. Address Security Concerns: Institutions can cooperate with local authorities to improve campus security and provide opportunities for on-campus or virtual ICT learning, to help overcome mobility barriers.
5. Provide Financial Help and Resources: Scholarships, grants, and subsidized access to ICT tools can lighten the financial load for female students and faculty.
6. Champion Industry Partnerships: Internships and mentoring connections in ICT industries can help to provide women with practical experience and expand their networks.
7. Assess and Adjust Inclusion Efforts: Institutions need to regularly evaluate the effectiveness of gender-inclusivity strategies and modify policies to ensure ongoing effectiveness.

In summary, enabling women in ICT from SUCs in Jolo entails a multidimensional and contextual approach that seeks to help them navigate the intertwining cultural, institutional, security, and economic hindrances surrounding their aspirations. These strategic recommendations aim to translate into actions that educational institutions and decision-makers can take, thus generating further opportunities for women to succeed in ICT and ultimately contribute to the social and economic development of the region. These efforts, driven by some incredible women, suggest how local efforts can go a long way in bridging the gender gap in tech and ensuring a brighter, more inclusive future for women in Jolo and beyond.

**Keywords:**Women Empowerment, Information and Communication Technology (ICT), Gender Inclusivity, State Universities and Colleges (SUCs), Higher Education, Jolo Sulu, Gender Equality, Institutional Barriers, Socio-cultural Norms, Economic Challenges, ICT Education, Gender-sensitive Policies, Women in STEM, Security and Mobility Constraints, Educational Policy Reform

## INTRODUCTION

The role of Information and Communication Technology (ICT) in the digital age has become an important pillar in the promotion of global development, innovation, economic growth, and social progress. While these fields have the potential to transform how we work and live, there remain pronounced gender gaps, which, at the same time, result in reduced opportunities for women to participate and contribute. Such a challenge is even more evident in developing countries, where cultural, social, and economic barriers ham-

per women from venturing into technology-related fields.

In the Philippines, the push to narrow gender disparities in education and jobs has taken ground, yet women are still not receiving equitable participation in the ICT industry. This is particularly pronounced in GIDAs such as Jolo, Sulu. The rise of Information and Communication Technology (ICT) and its integration into education has brought enduring opportunities for female faculty and students of State Universities and Colleges (SUCs) in Jolo, but unfortunately, these opportunities are also hindered by various barriers such as the lack of proper ICT tools, perpetuation of gender stereotypes, and societal norms that often result in discouraging women from pursuing careers in technology.

Given the importance of women in ICT to national development, the specific features of women's experience, challenges, and prospects for female faculty and students in SUCs in Jolo, Sulu are, hence, the focus of this case study. The study aims to identify strategies for promoting women's success in the field of ICT by understanding their perspectives and exploring the challenges they encounter.

This research is deemed relevant considering that it contributes to the limited literature that covers the issues of gender inclusivity within the ICT space, specifically in relation to Jolo, Sulu. It fits into a wider narrative on gender equity within education and technology, matching global and national ambitions to further widen the space for women's empowerment. Additionally, the results from this work will provide insight to policymakers, institutions, and stakeholders about actionable steps to improve the inclusiveness of the ICT world, increasing the socio-economic development of the region.

Using this case study, we will deconstruct its implications, highlighting the concerns of female faculty and students and the necessity for structural reforms, policy-setting initiatives, and support systems that can narrow the diversity divide in ICT. It is hoped this research will bring more awareness to institutional change so more women will be supported into and through ICT-related programs.

## LITERATURE REVIEW

This has been true at a global level with various development initiatives placing emphasis on integrating women into the Information and Communication Technology (ICT) sector owing to its potential for innovation and economic growth. Nonetheless, gender inequalities remain a major barrier in the full participation of women in various ICT sectors, especially in developing areas. The aim of this literature review is to assess the literature on gender representation in ICT, barriers to women's participation in the field, and initiatives to foster gender inclusivity, specifically in the context of higher education institutions.

### Global Trends for Women in ICT

The gender gap in ICT is well-known around the world. According to statistics published by the International Telecommunication Union (ITU, 2020), the number of girls and women in skills related to the usage of modern ICT and in the workforce is highly disproportionate, with women being largely outnumbered in the ICT domain. UNESCO (2019) studies show that this trend is partly influenced also by sociocultural norms, the absence of mentorship, and restricted entry to digital resources. Such systemic challenges can make women less inclined to sign up for ICT degrees and pursue technology careers.

### The Philippine Context: Women in ICT

In the Philippines, gender equality in education has made strides over the years, but gender disparities are still present in STEM (Science, Technology, Engineering, and Mathematics) disciplines, particularly ICT. According to a study conducted by the Philippine Commission on Women (PCW, 2020), women continue to be underrepresented in technology-related programs and industries. However, obstacles such as gender stereotypes, lack of institutional support, and inequitable access to opportunities still hinder full

participation by women. Another study that confirms this perception is the research of De Guzman and Oracion (2021), which showed that women from rural and conflict-affected areas, such as Mindanao, face other struggles, like cultural expectations and security problems.

**Challenges for Women in Higher Education ICT in Higher Education**

Higher education institutions are crucial to women's engagement in ICT. Research by Burke and Venkatesh (2018) has suggested that women enrolled in ICT programs frequently experience mentorship shortages, curricula with gender imbalance, and constraints in research opportunities. It is indeed the case that Cruz and Santos (2020) found that women students and faculty in Philippine State Universities and Colleges (SUCs) are faced with challenges such as poor ICT infrastructure, gender discrimination, and limited representation in leadership roles.

**Strategies to Equip Women in ICT**

To combat these issues, several global and local initiatives have been developed around women empowerment in ICT, efforts ranging from mentorship programs to policy reforms to inclusive educational practices. UNESCO (2020) argues for the development of gender-sensitive policies, capacity-building initiatives, and community involvement to promote inclusivity in ICT. In the Philippines, programs like the Department of Information and Communications Technology's (DICT) Women in ICT Development Program have played a key role in providing digital skills training and networking opportunities for women. Research by Lopez and Dela Cruz (2021) found that institutional support, scholarships, and industry partnerships are effective at encouraging female participation in ICT fields.

**Research Gaps**

Although gender inclusiveness in ICT is attracting increasing attention to its potential economic benefits, much research remains to be done on the context of women in GIDAs, such as Jolo, Sulu. Most studies focus on urban settings, and little attention has been paid to the specific challenges and opportunities for women living in rural or conflict-affected areas. But with this gap, we need localized research that can help construct context-based strategies for the empowerment of women in ICT.

## METHODOLOGY

A qualitative research design was used in this study to discover the experiences, including the challenges and opportunities, of female faculty and students enrolled in Information and Communication Technology (ICT) programs in SUCs at Jolo, Sulu. A qualitative approach was deliberately selected to obtain in-depth insights on participants' perceptions, experiences, and socio-cultural considerations surrounding their choices to pursue ICT education. This approach enabled a deep exploration of how the interaction between cultural, institutional, and economic barriers affected women's participation in the ICT sector.

In order to truly capture these complexities, a case study approach was adopted. This design offered a structural means of exploring the particular barriers experienced by women in geographically isolated and disadvantaged areas (GIDAs) such as that in Jolo. The case study method allowed for an in-depth exploration of personal experiences and institutional practices that facilitate or inhibit women's participation in ICT. The rationale behind a narrow thematic focus was the intention to expose a complex local picture of women participating in ICT higher education in an area known for conservative cultural values and socio-economic hardship.

The study was carried out in some State Universities and Colleges (SUCs) in Jolo, Sulu, chosen based on their important role as the provider of higher education for the ICT courses in the region. These institutions represent important access points for technology education in Jolo and were deemed appropriate for inves-

tigating gender dynamics in ICT programs.

Purposive sampling was used to select participants, and none had experiences that were irrelevant or unethical. Participants included females serving as faculty in ICT-related courses and females enrolled in ICT programs. To be eligible to participate, they had to have participated in their duties for a minimum of one year. This was to ensure that there was enough academic or professional experience to participate with real and usable insights into the challenges and opportunities within education solved by ICT.

The study used various qualitative data collection methods to enable the collection of rich information on a variety of data categories. These were followed by semi-structured interviews with faculty members and students, which allowed informants to recount their own experiences, key struggles, and perspectives about becoming involved in ICT. This interview format offered flexibility, allowing for the exploration of new, emerging topics while also maintaining a consistent structure across participants.

Focus Group Discussions (FGDs) with groups of female ICT students were also arranged to stimulate collective discussions on shared experiences and to identify common barriers. These exchanges invited dialogue, challenged their academic milieu, and collectively probed into the challenges faced and opportunities gained. Focus groups provided data through revealing dynamics and group perspectives not present in individual interviews.

In addition to the qualitative data, a document review was performed. This included reviewing institutional documents like gender policies, ICT program curricula, and enrollment records. Women's participation in ICT is thus influenced by institutional frameworks, which were important contextual information stemming from the document analysis. These data—the review of gender policies revealed the status of institutional commitment to gender inclusion, while the curricula and enrollment data were indicators of the accessibility and accommodation of ICT programs for female students.

Interviews and focus group discussion data were transcribed verbatim and analyzed thematically. This analysis process included immersing myself in the data through multiple readings and systematically coding the responses to uncover emergent patterns and grouping these codes into higher-order themes that expressed the challenges, opportunities, and institutional practices. The qualitative data was coded using NVivo software for manageable and thorough data analysis.

Ethical considerations were finalized throughout the study. Ethical approval was secured from the institutional review boards of the participating SUCs. The participants were fully informed of the study and provided written consent to participate. Pseudonyms and secure storage of data were used to protect the confidentiality and anonymity of participants. Participation was voluntary, and participants could withdraw at any point in the study without consequences.

There were several strengths to the research design selected. A qualitative case study approach allowed the researchers to examine women's experiences within a context and to develop an understanding of how women experienced being in ICT programs in Jolo, Sulu. The study provided a rich and balanced picture of the challenges and opportunities faced by women in this field, by use of semi-structured interviews, focus group discussions, and document reviews. Additionally, purposive sampling guaranteed that the participants had valuable life events related to the study, thus enhancing the richness of data harvested.

However, the study also had limitations. Whether the findings could be extended to other geographic regions and educational systems is open to question because the study is focused on a single foreign and regional country/region system. Moreover, there is also a possibility of bias as participants might be reluctant to provide sensitive information in interviews and discussions. Similarly, time and resource constraints also played a role in the number of participants involved in the study, potentially limiting the

range of perspectives captured.

Despite these limitations, the chosen methodology successfully reflected the realities and systematic challenges faced by female faculty and students of ICT programs in Jolo, Sulu. The implications of the findings guide how educational institutions should form strategies and policies toward ICT women empowerment, thus helping to educate women in a more supportive and inclusive atmosphere. Aimed not only to illustrate these challenges, we also provide a basis for future tailored interventions in gender equity in academia and technology education in the area.

## STUDY

The present study critically discusses to what extent female faculty and students participate in Information and Communication Technology (ICT) programs in SUCs (State Universities and Colleges) in Jolo, Sulu. The report explores the importance of institutional, cultural, and socio-economic factors that interact to influence women's engagement in ICT education and careers. This research is both intrinsic and instrumental; intrinsic because it examines the challenges experienced by women in a local, conflict-affected, and marginalized area, and instrumental because it engages with broader questions of gender inclusiveness and ICT development in Filipino public higher education.

### Context of the Case

Jolo, Sulu, in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), is a melting pot of socio-cultural dynamics sculpted from the remnants of armed skirmishes, colored traditions, and less than favorable economic situations. Interestingly, colleges and universities have become key institutions in promoting access to education and regional development within this larger context. SUCs in Jolo have even started to offer ICT degrees that are a big step in promoting higher education access and socio-economic development in the province.

Yet, despite these advancements, entrenched gender norms, lack of institutional resources, and security concerns still disproportionately discourage women from fully participating in ICT programs. All these create an environment that limits women's access to educational and employment opportunities in the technology sector.

In Jolo, the complex forces shaping women's engagement in ICT are embedded in the social, cultural, institutional, and economic context of the region.

1. Social and Cultural Norms: In Jolo, traditional gender roles place women into a domestic sphere, discouraging them from higher education, especially in technology-related disciplines. Women are expected to prioritize domestics over academics and work in this conservative context, which results in few women in the ICT area.
2. Institutional Barriers: Institutions such as the SUCs in Jolo experience institutional constraints such as limited ICT infrastructures, obsolete learning resources, as well as the lack of gender-friendly policies. Such constraints limit women's academic advancement, as well as preclude them from partaking in ICT programs. And without supportive institution-wide policies that promote mentorship or have specific scholarship programs for women students and faculty, women students and faculty don't have the resources they need to thrive.Mobility and Security-Related Constraints: The security situation in Jolo also adds to women's challenges. Safety issues persist and often prevent female faculty and students from visiting the learning space, attending academic activities, and networking opportunities outside the university. This barrier — unique to conflict-affected regions — has a major effect on women's educational opportunities and career advancement.

3. Economic Challenges: Economic difficulty continues to be a significant impediment to women's engagement in ICT education. Personal computers, internet access, and digital learning materials are not affordable for most families in Jolo. This burden weighs on women even more heavily, as the educational expenses of male family members take priority in many cultures. Therefore, financial pressures shape women's educational choices and restrict their opportunity to access higher education in the ICT sector.

**Power Structures and Institutional Influences**

The research illustrates the influence of institutional leaders, academic staff, and policymakers on the gender construction in ICT education. Institutional policies — or lack thereof — surrounding things like gender inclusion, scholarships, and mentorship directly affect women's experiences in ICT programs. As well, the data showcases that Local Government Units (LGUs) and community leaders can contribute to either perpetuating or deconstructing patriarchal gender roles through advocacy campaigns and community workshops. Such advocacy can shape how gender inequality is understood and managed not just within individual educational institutions but also across the wider community.

**A System-Based Reflection on Institutions and Society Ways**

SUCs play a crucial role as public institutions in fostering social progress and advancing equitable access to education. This case soon calls attention to the fundamental contributions of educational institutions in harmonizing social customs with governing contents to help gender fairness in education. SUCs in Jolo have a distinctive opportunity to champion women's empowerment in ICT through alignment of institutional practices with cultural sensitivities and policy frameworks. However, for empowerment efforts to succeed, they must carefully traverse the region's socio-cultural terrain, whilst implementing policies that allow for greater female participation in technology fields.

**Why the case was exceptional and far-reaching impact**

The narratives of female faculty and students in SUC ICT programs at Jolo are steeply contextualized in a region whose history of conflict, economic disadvantage, and conservative culture shape their educational experience. Such local context differentiates the case from more generalized studies exploring gender equity within ICT domains in developed or stable geographical contexts. But the barriers for women in Jolo also reflect national and global problems that address gender inequalities across STEM and ICT sectors.

Practical approaches from this localized case can potentially stir educational policies, gender advocacy programs, and development initiatives in Jolo, other parts of the Philippines, and other developing nations. Improving gender equity in ICT means finding solutions that are context-specific and focused on the unique circumstances facing women in marginalized places.

This work opens up a rich understanding of the interplay between the factors of culture, institutional unpreparedness, security considerations, and economic restrictions and their combined effects on women taking part in the education sector, and in ICT education specifically, in the case of Jolo, Sulu. The results accentuate the importance of targeted, localized solutions that can address these interlinked challenges. Implementing gender-sensitive institutional policies, enhancing the ICT infrastructure, and building a supportive community are the keys to ensuring a broader educational outreach to women in ICT.

By documenting the obstacles and the avenues for empowerment, this research provides important insight into the wider conversation about gender in ICT and higher education, helping to inform policy and advocacy that address the gender divide in technology.

## ANALYSIS

This study provides insights into women's experiences in Information and Communication Technology (ICT) fields illustrating both the consistencies and discrepancies with previous literature. Instead, this analysis reveals the ways that cultural, institutional, economic, and security factors interact to shape the experiences of female faculty and students in various State Universities and Colleges (SUCs) in Jolo, Sulu. Gender stereotypes and cultural norms continue to serve as significant barriers for women in ICT, as reflected in global and national studies. The participants in this study reacted to the prevalence of societal expectations that dissuade women from seeking technology education and careers: similar to the results found by UNESCO (2019) and the Philippine Commission on Women (2020). In Jolo, traditional gender roles still hold many women back from pursuing higher education or achieving professional full-time jobs, which are seen as secondary to their domestic obligations. The fact that these factors align with existing literature illustrates how development limitations in female progress for male-dominated fields like ICT are universally tied to cultural perceptions.

Structural challenges exacerbate these barriers. Similarly, in line with Burke and Venkatesh (2018) and Cruz and Santos (2020), participants expressed insufficient ICT infrastructure whereby also institutions did not have any gender-responsive policies. They identified obsolete equipment, lack of access to digital learning tools right from an early age, and lack of mentorship programs as major barriers, particularly for women students and faculty. These results reflect wider concerns over institutional failure to create inclusive learning environments that foster women's engagement in ICT programs.

Economic barriers are also emphasized, with De Guzman and Oracion (2021) noting the implications of factors that recognize the necessity of utilizing the internet as similar to a commodity. Due to financial difficulties, many respondents indicated that they were unable to gain access to basic ICT resources (like personal computers and reliable internet connection) (Su et al., 2023). However, for women from low-income households, these challenges are even more critical, restricting their full participation in ICT education. This reiterates the importance of sector-specific financial and technological support for women in underprivileged areas.

But it also uncovered specific challenges not described widely in the current literature. The security situation in Jolo became one of the major factors that limited women's educational experiences. In contrast to some urban and rural contexts studied previously, residents of Jolo are limited in terms of mobility due to concerns for their safety. The fear of violence and instability discourages female students and faculty alike from participating in extracurricular ICT activities, attending workshops, or networking off-campus. This barrier has its own security component unique to conflict areas like Jolo, which adds complexity not shown in most national and global level studies.

This is not so interesting, except that the study found a break in the usual story about society failing to encourage against discouragement. A few of the participants, Melita also reported they had strong support from their families and communities in pursuing ICT education. It indicates that there are emerging trends within Jolo that show changes in cultural attitudes, one of which is that particular families now promote women's involvement with technology fields. This is opposed to the widespread perspective offered by the existing literature that one-fit-all accounts characterize the communities in conservative regions as discouraging women from pursuing their careers in the ICT sectors. It suggests that, despite cultural norms being an obstacle, some dynamics are changing that could promote gender inclusiveness.

These similarities and differences shed light on the complexity of empowering women in ICT in the context of Jolo. Findings' verification with the literature substantiates the need for systemic reforms like

improving ICT infrastructure, gender-responsive policies, and mentorship initiatives. However, the differences we see regarding security issues and family support highlight the importance of context-specific approaches. Some steps which can be taken here by educational institutions and local authorities might include addressing criticism through collaborative engagements and tools. Additionally, harnessing family support may enhance advocacy initiatives and motivate women to enter ICT professions.

Though the study cannot provide conclusive answers owing to its limited scope, it tentatively proposes that material for interventions designed to their unique challenges in Jolo—on-campus ICT workshops that address mobility issues or student home engagement programs that build support in families—could be more successful than generalized approaches. These insights suggest the value of formulating localized approaches that consider cultural, institutional, and security-related factors.

The study thus shows that women in ICT working in SUCs in Jolo, Sulu do encounter the same challenges as those identified globally, but also that there are uniquely context-specific challenges that need to be accounted for. Understanding the commonalities and differences in their experiences plays a key role in developing effective policies and programs that actually empower women in ICT. This highlights the urgent need for global best practices to be complemented by culturally and regionally sensitive solutions that create an inclusive and supportive environment for women in the high-tech space.

## CONCLUSIONS AND RECOMMENDATIONS

This study has revealed the complexities of challenges faced by female ICT faculty and students in SUCs in Jolo, Sulu. These findings elucidate how deeply rooted cultural norms, institutional restrictions, insecurity, and economic distress all conspire against women engaging fully in and progressing through ICT education and associated careers.

Constraints of a cultural nature in Jolo demand that traditional gender role allocation prevails, whereby men are more inclined to pursue higher educational forms of study and women remain encumbered by the demands of home. Such pressures play a significant role in turning away a number of women from seeking and pursuing educational and career opportunities in technology. To make matters worse, there is no institutional support for faculty members within SUCs. The inadequate ICT infrastructure, lack of access to standard, updated learning materials, and no gender-sensitive policies make it difficult for female students and faculty members to thrive.

Moreover, the general security compliance in Jolo severely limits women's mobility, which makes it difficult for them to attend their classes regularly, involve themselves in extracurricular academic activities, and even participate in professional networking events. The economic constraints aggravate these issues, and several families cannot bear the cost of ICT tools—laptops, stable internet connection, or other digital learning tools—leaving many women out of the circle to enter into the education system in its fullest sense.

Yet in spite of these barriers, the study also pointed to hopeful signs of progress. Certain participants recounted supportive families and communities that motivated them to pursue ICT education. However, the changing perception of women in technology presents an opportunity for institutions and policymakers to strengthen and expand this support, allowing women to thrive in the ICT space.

Acknowledging the interlinked nature of these challenges, a holistic and context-specific approach to women's empowerment in ICT initiatives at SUCs in Jolo is imperative. Developing and implementing gender-sensitive policies that strengthen inclusivity should be the first step for the institutions. Mentorship programs, leadership opportunities, and scholarships for women in ICT are just a few ways in which this

can be accomplished.

Investment languages in ICT infrastructure should also be reorganized. By upgrading facilities, such as equipment and internet access, we can create a more conducive environment for learning, especially for the girls who will not have access to such resources outside school. These institutional improvements need to be complemented by intentional engagement with local communities. Local educational institutions should work along with local government units and kaso, engaged in the transformation of gender relations through integration and recognition of the importance of women in the development of ICT and the region. Meeting a separate challenge in Jolo, security concerns require specific answers. Also, universities should engage with local authorities as needed to prepare secure learning environments for female students. We can combat the threat of mobility restrictions by applying on-campus ICT workshops and leveraging virtual learning. Tackling economic barriers is equally important. Institutions should set up financial assistance schemes, such as scholarships and grants targeting women in ICT, and offer free or subsidized access to core digital tools and learning materials.

Establishing partnerships with ICT companies and industry leaders can also facilitate internships and mentorship programs for female students and faculty. Such opportunities not only improve hands-on skills but also give exposure to industry networks, making them more employable after graduation. Additionally, implementing a process of regular evaluation and assessment of these projects will be vital in determining their success and identifying areas for improvement.

It is important to address these barriers with a comprehensive approach to empower women in information communication technology in state universities and colleges in Jolo, Sulu. The longer-term, sustainable measures that need to be taken to encourage women to pursue careers in ICT will ensure women have a greater chance of success in this field. By doing so, they are not only bridging the gender gap in technology but also making considerable contributions towards the region's socio-economic development. This statement is intended to be a wake-up call to institutions and leaders to advocate for gender equity in ICT education and create a meaningful impact for generations of women to come, inside Jolo and outside.

## REFERENCES

1. Burke, Q., & Venkatesh, V. (2018). Gender and ICT: Understanding the influence of culture on technology adoption. *Information Systems Research, 29*(2), 456–470. https://doi.org/10.1287/isre.2018.0795
2. Cruz, M. L., & Santos, R. D. (2020). Barriers to women's participation in ICT programs in state universities and colleges in the Philippines. *Philippine Journal of Educational Measurement, 5*(1), 22–35.
3. De Guzman, A. B., & Oracion, E. G. (2021). Socioeconomic barriers to ICT access and use among Filipino women in rural areas. *Asian Journal of Women's Studies, 27*(4), 503–520. https://doi.org/10.1080/12259276.2021.1926634
4. International Telecommunication Union. (2020). *Measuring digital development: Facts and figures 2020*. ITU. https://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx
5. Lopez, C. D., & Dela Cruz, F. M. (2021). Enhancing women's participation in ICT: A policy review of Gender and Development (GAD) programs in the Philippines. *Philippine Public Administration Review, 63*(2), 34–51.
6. Philippine Commission on Women. (2020). *Gender equality and women empowerment in the Philippines: Progress and challenges.* Philippine Commission on Women. https://pcw.gov.ph

7. United Nations Educational, Scientific and Cultural Organization. (2019). *Cracking the code: Girls' and women's education in STEM*. UNESCO. https://unesdoc.unesco.org
8. United Nations Educational, Scientific and Cultural Organization. (2020). *Gender equality in science, technology, engineering, and mathematics (STEM) education*. UNESCO. https://unesdoc.unesco.org
9. Yin, R. K. (2013). *Case study research: Design and methods* (5th ed.). SAGE Publications.