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Visual Identities and Gendered Communication in Tanzanian Social Media: The Influence of Photo Lab Technology on Boys' and Girls' Verbal and Non-Verbal Expressions

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ABSTRACT: *In This study investigates how Tanzanian youth utilise Photo Lab, an AI-powered image editing application, to construct digital identities and engage in gendered communication across social media platforms. With the proliferation of smartphones and increasing access to visual editing tools, young people are curating stylised self-representations that reflect, reinforce, or challenge societal gender norms. Drawing on a mixed-methods approach, which encompasses 638 social media images and qualitative interviews with students from three Tanzanian institutions, the study reveals distinct patterns in verbal and nonverbal expression. Girls were found to favour romantic filters and emotive captions, often tied to self-worth and beauty ideals, while boys gravitated towards bold, humorous edits aligned with dominance and status. While many users report increased confidence and digital creativity, the research also identifies concerns around dependency on edited imagery, emotional manipulation, and psychological vulnerability. Photo Lab functions simultaneously as a creative outlet and a mirror of cultural expectations, allowing for both conformity and resistance within evolving digital youth cultures. The findings underscore the importance of media literacy and ethical engagement in AI-enhanced self-presentation practices.*

KEYWORDS: Photo Lab, Gendered Communication, AI Image Editing, Tanzanian Youth, Social Media Expression

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Introduction

Photo Lab technology represents a significant advancement in the application of artificial intelligence (AI), offering young people a unique platform to explore visual creativity and science in their daily social media engagement (cf. Okkonen and Kotilainen, 2019; Lee *et al.*, 2022; Ozimek *et al.*, 2023). The democratisation of advanced image-processing tools has enabled non-experts to produce stylised, impactful digital imagery. This accessibility stimulates curiosity and digital literacy among youth (Chae, 2017; Cui *et al*., 2025). However, the shift from creative exploration to psychological dependency is subtle but concerning. As users increasingly rely on digital enhancements for self-worth and social validation, authentic self-acceptance may be replaced by a pursuit of algorithmic perfection. Scholars such as Wang and Gu (2022) have shown that such platforms often exacerbate self-comparison and anxiety. Hence, while Photo Lab reflects the marvels of AI, it also poses notable psychological risks.

In Tanzania, the surge in smartphone usage and social media activity has led to the widespread popularity of visual editing applications, with Photo Lab being a favourite among young users. These individuals use the platform to create idealised images for online sharing, reflecting a broader cultural shift towards digital self-representation. Photo Lab not only enhances aesthetics but also facilitates nuanced communication through images, captions, emojis, and hashtags. This study does not focus on professional or commercial uses of the app but rather examines its role in personal identity construction and gendered communication. Despite its rising popularity, little scholarly research exists on the implications of Photo Lab use among Tanzanian youth. This paper thus aims to fill that gap, offering foundational insights into the social and psychological impact of visual editing technologies in the Tanzanian context.

Problem Statement

While Photo Lab technology has transformed how Tanzanian youth engage with artificial intelligence and digital creativity, its growing influence on identity construction and social communication, particularly along gender lines, remains underexplored. The increasing use of Photo Lab by boys and girls on social media platforms reflects a deeper shift toward curated visual identities and mediated self-expression (Cui *et al*., 2025). However, little is known about how this tool shapes gendered patterns of verbal and non-verbal communication, such as the use of filters, emojis, captions, or aesthetic choices that signal emotion, status, or identity (Wang and Gu, 2022). Despite the cultural prominence of Photo Lab in Tanzania's youth digital culture, academic literature has yet to critically examine the intersection between gender, image-editing technology, and online self-presentation. The psychological implications, such as emotional dependency, performative identity, and social comparison, are widely documented in broader digital contexts (Kuss and Griffiths, 2017)but remain poorly studied within the Tanzanian setting. This lack of evidence constrains understanding of how boys and girls differently interpret, construct, and communicate their digital selves. Recent studies have shown that AI-based visual tools can reinforce social hierarchies, identity anxiety, and gendered expectations in youth behaviour online (Donisi *et al.*, 2024). Therefore, there is an urgent need to investigate how Photo Lab not only reflects but potentially reinforces gendered norms and behaviours in online interactions among Tanzanian youth.

Literature Review

Photo Lab Technology and AI-Driven Visual Editing

Developed by Linerock Investments in 2024, Photo Lab has become a leading AI-powered image editing application among youth globally, including in Tanzania (LinerockInvestments, 2024). The app transforms personal photographs into artistic images using various filters, face montages, and AI effects. Its widespread appeal stems from its user-friendly interface and visually striking outputs(AppEight, 2023). AIChief (2023) and AI Know Zone (2023) underscore how such technologies make professional-level editing accessible, enhancing youth engagement with digital creativity.

Beyond aesthetics, AI tools like Photo Lab shape digital culture by encouraging users to experiment with their self-presentation, thus amplifying the performative nature of online engagement (Van Dijck, 2013; Cui *et al*., 2025). Nevertheless, these technologies come with psychological costs. Wang and Gu (2022) argue that overuse can lead to social comparison, perfectionism, and dependence on digital validation. Similarly, Aydın and Göncü (2025) highlight the potential for addiction and excessive reliance on social media platforms.

Constructing Online Identity through Visual Editing

The creation of online identity increasingly occurs through visual content. Scholars such as Van Dijck (2013) and Rettberg (2017) argue that curated images serve as digital artefacts of identity. These images are not merely decorative but function as visual narratives, expressing personal, social, and aspirational elements of the self. Photo Lab plays a critical role in this process by offering tools that align user appearance with dominant aesthetic standards.
In the Tanzanian context, visual editing enables youth to articulate social status, gender identity, and a sense of belonging. These digital performances are dynamic and shaped by evolving social media trends and technological capabilities. Rettberg (2017) notes that visual identities are adaptive and responsive to both global media culture and local societal values. Thus, image editing is a complex, culturally embedded act that reflects both personal creativity and broader social norms.

Verbal and Non-Verbal Communication in the Digital Space

Digital platforms foster multimodal communication, where verbal and non-verbal elements merge to convey layered meanings. Kress and van Leeuwen (2006) describe this as a blend of images, text, typography, and symbols. In Photo Lab, verbal elements such as captions and hashtags provide emotional and contextual depth to edited images, enabling users to express pride, humour, desire, or introspection.

Gender plays a significant role in shaping these communication styles. Tannen (1990) notes that girls tend to use more expressive and emotive language, while boys adopt styles that emphasise competition and status. Mulac *et al.* (2001) confirm that female communication is affiliative and emotionally expressive, whereas male communication is assertive and independent. These patterns are evident in how boys and girls use Photo Lab: girls often favour romantic filters with sentimental captions, while boys prefer bold imagery that signals humour or dominance.

These gendered digital practices create nuanced online performances shaped by both global and local cultural scripts. As Tanzanian youth engage with these platforms, they negotiate complex identities that reflect societal expectations and personal expression.

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Digital Culture and Youth in Tanzania

Tanzania's digital landscape has evolved rapidly, marked by increased mobile phone access and widespread use of visual-based platforms like TikTok, Instagram, and Facebook. This shift has facilitated a surge in youth-led mobile creativity. Tripp (2004) contextualises these changes within the broader socio-cultural framework of gender expectations. Girls are often pressured to conform to beauty norms and modesty, while boys are encouraged to display assertiveness.

Photo Lab use thus reflects and reinforces these gendered expectations. Yet, it also offers spaces for resistance. Some girls use the app to challenge traditional ideals of beauty, and some boys explore non-traditional aesthetics. Regardless of intention, Photo Lab enables a dynamic form of self-expression shaped by both global trends and local values. It becomes a cultural mirror through which youth negotiate gender roles and identity within a rapidly changing digital environment.

Gap in Literature and Rationale for the Study

Despite the widespread use of Photo Lab in Tanzania, there is a dearth of academic studies exploring its cultural and psychological implications. While broader research exists on youth, gender, and digital media in Africa, focused studies on AI-mediated visual identity construction remain limited. This study addresses this gap by providing a gender-sensitive, communication-focused analysis of how Tanzanian youth engage with Photo Lab. It explores the psychological, social, and cultural dimensions of digital image editing, thereby contributing to the growing field of digital youth culture and gendered communication in East Africa.

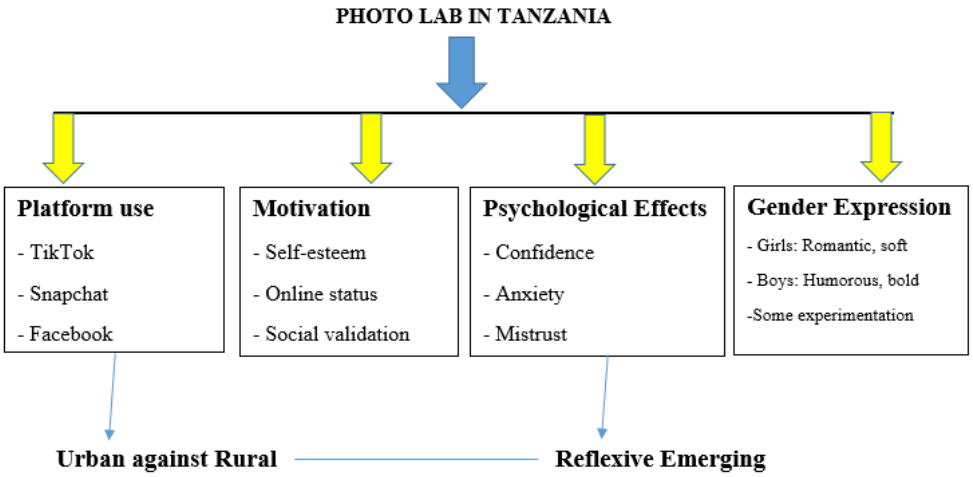
Methodology

This study employed a mixed-methods approach, combining quantitative surveys with qualitative interviews. Although the research focused on Tanzanian youth, the sample was deliberately limited to young people in tertiary education who had access to smartphones and could be reliably reached by the researcher for follow-up qualitative engagement. A stratified sampling technique was used to ensure balanced representation of both male and female participants across different regions and age groups.

A structured questionnaire was disseminated via Google Forms and WhatsApp polls to gather data on usage patterns, verbal and non-verbal expressions, and associated psychological effects. In addition, semi-structured interviews were conducted with twelve participants drawn from three institutions: Mkwawa University College, Ruaha Catholic University, and Kleruu Training College, found in Iringa region (comprising two males and two female participants from each institution).

Findings, Data Analysis, and Discussion

While considering the Photo Lab representation and communication among the Tanzanian youth, it is worth conceptualising with the following mind sketch diagram on the trend of its uses in Tanzania categorised in the type of the social media platform, its motivation, pychological effects and gender expression:



Patterns of Use: Platform Preferences and Gender Distribution

From the dataset comprising 638 images sourced from six major social media platforms (Facebook, Instagram, WhatsApp, TikTok, Snapchat, and X), a significant 324 images, over 50%, had been altered using Photo Lab filters or enhancements. This suggests that Photo Lab has a substantial penetration into youth digital practices, especially among Tanzanian users. TikTok emerged as the dominant platform for showcasing these edited images, aligning with global trends that link TikTok to visual performance and personal branding (cf. Liu *et al*., 2003; Omar and Dequan, 2020). Snapchat and Facebook followed closely, both platforms known for their visual storytelling features and semi-private sharing cultures.

Gender differences were also conspicuous in platform usage and editing frequency. Girls contributed a higher volume of Photo Lab-edited images than boys. This skew reflects not only heightened visual self-presentation practices among young women but also supports global research that suggests girls are often socialised to place greater emphasis on appearance and visual affirmation. Boys, while present in the dataset, were more selective in their editing use, aligning their image alterations with humour, exaggeration, or dominance-based expression.

Motivations Behind Photo Lab Use: Confidence, Curiosity, and Commerce

The qualitative interviews revealed a range of nuanced motivations behind Photo Lab usage. Among the most common was the desire to enhance self-confidence. Many girls reported using filters to meet perceived beauty standards, smoother skin, lighter tone, symmetrical features, which they believed improved their reception on social media. For these users, edited images became tools to combat body image dissatisfaction or social anxiety, aligning with psychological frameworks such as the Social Comparison Theory (Festinger, 1954), where individuals evaluate themselves against curated online personas.

Conversely, several boys expressed using Photo Lab for entertainment or strategic manipulation of their image to appear "cool" or more confident. In some cases, these edits were used to increase attractiveness to potential romantic partners or boost online influence, particularly among those aspiring to become "influencers" or monetise their social media presence. The study has gone a milestone with the following thematic table to uncover the ongoing trends on the uses of photo Lab with connection to verbal and non-verbal communication as follows:

Theme	Girls	Boys
Use intensity	Higher frequency	Moderate use
Visual style	Romantic, pastel, aesthetic filters	Bold, comic, exaggerated filter
Caption style	Sentimental, poetic, affirming	Humorous, status-oriented, pop-cultural
Motivations	Beauty enhancement, emotional self-presentation	Social appeal, humour, performance
Risks Noted	Emotional dependency, validation-seeking	Mistrust, reduced offline confidence
Notable Deviations	Use of surreal filters to critique norms	Use of soft filters for experimentation

Importantly, a subset of both boys and girls used Photo Lab to mask their real identity. This was especially relevant in rural-urban contexts, where youth from conservative families or restrictive social environments felt safer expressing alternate selves online through stylised or animated avatars.

Psychological and Social Consequences: Between Empowerment and Distortion

While Photo Lab was often praised by participants for offering aesthetic pleasure and a sense of creative control, the darker side of digital enhancement emerged through recurring themes of emotional manipulation, mistrust, and dissatisfaction with offline appearance. Several participants described how the disparity between edited and real-life images led to awkward encounters, embarrassment, or interpersonal tension.

For girls in particular, there was a rising fear that reliance on "perfected" images would create dependency on artificial beauty. One respondent described her reluctance to post unedited photos because "the likes go down" and she feared being "unfollowed." Such responses support Wang and Gu's (2022) findings on algorithmic validation replacing authentic self-acceptance, and hint at emerging aesthetic anxieties among Tanzanian youth, especially young women.

Interestingly, some participants, especially from more digitally literate university cohorts, expressed awareness of this dichotomy. A few even reported deliberately using exaggerated filters (e.g., cartoon or fantasy effects) as self-aware commentary on digital aesthetics, indicating emerging reflexivity in youth digital practices.

Verbal and Non-Verbal Dynamics: Gendered Communication in Visual Cultures

The communication embedded in Photo Lab usage was deeply multimodal. While the edited image served as the primary unit of meaning, accompanying captions, emojis, and hashtags acted as powerful verbal anchors, infusing sentiment, irony, or social cues into the visual post. Girls tended to use expressive captions, often poetic, affectionate, or melancholic, paired with romantic or pastel-themed filters. Their visual communication was affiliative, soft, and emotionally revealing. Consider the following visual comparison table created as the result of this study:

Influence of Photo Lab Technology on Girls and Boys		
Verbal Expressions *(Caption accompanying edited images)*	**Girls**	**Boys**
	Expressive language	Concise language
	Conveying emotions, romance, or introspection	Highlighting achievement, status, or humour
Non-verbal Expressions *(Stylistic choices in edited images)*	Romantic filters • Beauty • Sentimentality	Bold filters • Humour • Dominance

Boys, in contrast, chose edits with humorous distortion, exaggerated masculinity, or cinematic drama. Their captions leaned toward banter, idioms, or pop culture references, signifying independence, social confidence, or dominance. This reinforces findings from Tannen (1990) and Mulac et al. (2001), where male communication is more assertive and performative, while female expression is more emotionally embedded and relational.

These gendered stylistic choices reflect both global digital trends and local Tanzanian norms, where expressions of femininity and masculinity remain culturally coded. However, deviations were observed; some girls used horror filters or "dark fantasy" edits to signify rebellion, while some boys employed soft-focus or "angelic" filters, suggesting gender fluidity and experimentation within safe digital confines.

Cultural Contextualisation: Youth, Resistance, and Negotiated Identities

The Tanzanian sociocultural backdrop exerts a tangible influence on how youth use and interpret Photo Lab. As Tripp (2003) argued, gender norms in Tanzania still promote modesty, deference, and reserved femininity for girls, while expecting confidence, assertiveness, and public authority from boys. Yet, Photo Lab's AI-based transformation tools allow youth to engage in digital subversion of these expectations.

Some girls used hyper-stylised or even surreal filters to parody traditional beauty expectations, thus resisting dominant norms while remaining within the bounds of acceptable digital play. Boys who chose fantasy or "soft" filters often explained it as "just jokes," providing socially sanctioned cover for engaging in gender-nonconforming expressions. These digital performances thus reflect gender negotiation, not just replication of norms. Also, this study has created the infographic concept to capture exactly the angle of belonging and usage of Photo Lab with connection to verbal and non-verbal communication as follows:

Section	Key insights
Most used platforms	TikTok>Snapchat>Facebook
Photo-Lab use by gender	65% images from girls, reflecting visual sensitivity
Motivations	Boost self-confidence, conceal identity, attract attention
Verbal communication	Girls: caption with emotion & romance Boys: humour, memes, dominance
Non-verbal communication	Visual cues like filters imply beauty, status, identity
Cultural layering	Filters used to align with or resist traditional beauty and gender norms.
Emerging challenges	Self-image distortion, emotional manipulation, dependency on edits
Positive outcomes	Empowerment, exploration, safe gender performance

Moreover, urban and rural differences were evident. Youth from Dar es Salaam and Arusha showed higher experimentation and irony in their visual edits, while rural-based youth, especially female participants, were more conservative in their filter use, indicating regional variations in digital comfort and cultural latitude.

Semiotic Analysis: Visual Symbolism and Identity Projection

A closer semiotic reading of Photo Lab-edited photos reveals that these images are not just aesthetic choices but intentional symbols of selfhood. A popular example among girls was the "fairy wings" or "halo" filter, which subtly communicated moral virtue, innocence, or spiritual alignment, particularly potent in a society where religious and moral ideals are socially significant. Boys, meanwhile, frequently used superhero filters or film-themed edits, signalling aspirational identities of power, humour, or rebellion.

These symbolic layers reinforce Kress and van Leeuwen's (2006) argument on multimodal meaning-making, wherein visual and verbal signs interact to build rich narratives. For Tanzanian youth, these tools become low-stakes arenas to imagine alternate versions of self, versions that are sometimes aligned with social ideals and at other times disruptive of them.

Ambivalence and Emerging Digital Reflexivity

Across both surveys and interviews, one thematic thread was ambivalence: youth simultaneously appreciated the power of digital editing while recognising its risks. Participants often expressed a "love-hate" relationship with Photo Lab, acknowledging that it made them feel more confident online but insecure offline. This ambivalence may signal the beginning of a broader digital reflexivity, wherein users not only consume but critically assess the tools that shape their self-presentation.

This emerging awareness underscores the need for media literacy interventions, as recommended in this study's conclusion—not to limit digital creativity, but to empower youth with critical frameworks for understanding the psychological and social dimensions of AI-driven image production.

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Conclusion

This study has explored the multifaceted role of Photo Lab technology in shaping visual identities and gendered communication among Tanzanian youth. While Photo Lab promotes creativity and engagement with AI, it also introduces complex psychological and social dynamics. Young people actively construct digital identities through stylised imagery, employing verbal and non-verbal cues to communicate nuanced self-representations.

Gendered usage patterns reflect both global digital trends and local cultural expectations. Girls often use Photo Lab to enhance attractiveness or subvert beauty norms, while boys use it for status or humorous expression. Although the platform fosters empowerment and identity exploration, it also raises ethical concerns, including identity falsification and unrealistic portrayals that can harm relationships and self-image.

Ultimately, Photo Lab functions as both a tool for creativity and a medium for reproducing or challenging gender norms. It reflects broader societal transformations and the ongoing negotiation of identity in a digital era.

Recommendations for Further Research

Further research should explore the long-term psychological impacts of AI-powered editing tools on young people's mental health, particularly regarding self-esteem and interpersonal relationships. Comparative studies across different visual editing applications are needed to assess whether the patterns observed with Photo Lab reflect broader digital behaviours. Additionally, research should adopt intersectional frameworks to examine how gender intersects with factors such as class, religion, and geographic location in shaping digital identity. There is a pressing need to investigate how media literacy and ethical education can be effectively integrated into school curricula to foster responsible engagement with visual editing technologies. Finally, future studies should consider how altered digital identities influence offline relationships, including romantic, familial, and professional interactions among youth.

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