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GENDER NORMS DATA ENGINE

The Power of Community Support: Gender Norms and Young Women's Economic Empowerment in Kenya and Nigeria

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List of Acronyms

Acronym	Definition
ABYM	Adolescent Boys and Young Men
AGYW	Adolescent Girls and Young Women
CATI	Computer-Assisted Telephonic Interview
CEFM	Child, Early, and Forced Marriage
CFA	Confirmatory Factor Analysis
DHS	Demographic and Health Survey
EFA	Exploratory Factor Analysis
GNDE	Gender Norms Data Engine
IPF	Iterative Proportional Fitting
OR	Odds Ratio
RDD	Random Digit Dialing
RMSE	Root Mean Square Error
SD	Standard Deviation
SE	Standard Error
SES	Socioeconomic Status
WEE	Women's Economic Empowerment

I. EXECUTIVE SUMMARY

Decades of research highlight that gender inequality restricts the agency and choices of adolescent girls and young women (AGYW), limiting their voice and participation in their homes and communities and negatively affecting their health and life chances.[1] The global community recognizes the critical need for gender equality and has made commitments, including as part of the Sustainable Development Goals (SDGs) 2030 Agenda.[2] However, despite these commitments, progress in tackling gender inequality remains slow. The 2023 Global Gender Gap Index estimates it will take 131 years to reach full parity, a decline from the 99.5 years projected in 2020.[3]

Women's economic empowerment (WEE) is recognized as a critical lever for addressing gender inequalities but achieving it has been challenging. Harmful gender norms are partly responsible for limited progress in WEE. Gender norms deprioritize women's labor force participation and agency while prioritizing early marriage and confining women's roles to the household.[4] These norms were once considered unmeasurable and unchangeable. Recent research suggests that gender norms can be measured and are amenable to change with proper interventions and policies.[5] However, data on norms have been limited to smaller-scale studies on specific sub-groups, resulting in a limited understanding of the role gender norms play in particular behaviors and how we might change them.

The Gender Norms Data Engine (GNDE) addresses this gap by producing large-scale, population-level data on norms and behaviors across multiple themes, including WEE and agency over the timing of marriage and related aspirations and decisions. The GNDE provides individual-level data but primarily contributes by offering spatial data on population characteristics, attitudes, and behaviors at any geographic level of interest across an entire country. This is particularly useful in social norms research, as the enforcement of social norms occurs through pressure to conform to important reference groups and individuals.[6] This GNDE feature allows us to understand both an AGYW's self-perceived norms and the norms adhered to by key reference groups in her community, such as her AGYW peers, adolescent boys and young men (ABYM), and older adults in her community, and assess how they impact AGYW behaviors and outcomes.

Our analysis provides robust evidence that investing in policies and interventions to transform gender norms and foster more gender-equitable communities has the potential to significantly impact multiple domains of AGYWs' lives. While our study design does not allow for causal inference, the strength and consistency of these relationships across diverse measures offer compelling evidence of the importance of community gender norms in shaping AGYW experiences and outcomes. We find

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[1] Weber, A. M., Cislaghi, B., Meausoone, V., Abdalla, S., Mejía-Guevara, I., Loftus, P., ... & Gupta, G. R. (2019). Gender norms and health: insights from global survey data. *The Lancet*, *393*(10189), 2455-2468.
[2] United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld
[3] World Economic Forum. (2023). *Global gender gap report 2023*. Retrieved from https://www.weforum.org/reports/global-gender-gap-report-2023/
[4] Organisation for Economic Co-operation and Development. (2021). *Women's economic empowerment*. Retrieved from https://www.oecd.org/gender/women-s-economic-empowerment.htm
[5] Marcus, R., & Harper, C. (2015). *Gender justice and social norms–Processes of change for adolescent girls*. Overseas Development Institute. Retrieved from https://www.odi.org/publications/9522-gender-justice-and-social-norms-processes-change-adolescent-girls
[6] Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In *Advances in experimental social psychology* (Vol. 24, pp. 201-234). Academic Press.

consistent and positive relationships between community gender norms and a range of AGYW's WEE outcomes, including their aspirations and agency over vital life decisions like marriage timing. These associations hold after accounting for key socio-demographic factors such as education level, urban or rural residence, religious beliefs, wealth, and age. Notably, AGYW who perceive strong normative support for gender equality in their community experience positive outcomes across multiple areas: they are more likely to work outside the home, receive remuneration, control their income, spend less time on care work and household chores, have access to a financial account, and have the final say on when and whom to marry. In such environments, AGYW desire to marry at older ages, report higher motivation and perceive fewer structural barriers to achieving their WEE aspirations and goals.

The magnitude of these relationships underscores the transformative potential of improving the normative environment for both Nigerian and Kenyan AGYW. Overall, the impact is more pronounced in Nigeria than in Kenya. In Nigeria, our estimates suggest that a 10-point increase in AGYW's self-perceived community support for gender equality could increase the prevalence of workforce participation by 7.7%, enhance economic independence with a 5% rise in AGYW receiving remuneration, and significantly improve the prevalence of AGYW having control over income by 17.7%. In Kenya, a similar increase is likely to result in a 4.3% rise in the prevalence of employment and a 5% increase in both receiving remuneration and having control over income. Additionally, this perception of support reduces the time spent on care work by 13 minutes per day in Kenya and nearly 9 minutes per day in Nigeria, while raising the desired age of marriage by over 6 months in both countries, freeing up valuable time for education, work, and personal development. Notably, in Nigeria, it also increases the prevalence of AGYW having agency over when and whom to marry by 20.8% and 17.2%, respectively. These findings highlight how fostering a supportive normative environment could drive substantial progress in AGYW's economic outcomes and personal agency, creating meaningful opportunities for growth and empowerment.

Our analysis further emphasizes that support *from key reference groups* for gender equality, particularly in Nigeria, is associated with significant improvements in AGYW outcomes. In Nigeria, a 10-point increase in support correlates with substantial improvements: the prevalence of employment and remuneration increases by over 15%, control over income rises by 32%, financial account ownership grows by 22%, and time spent on care work decreases by approximately 12 minutes per day. Additionally, a 10-point increase in support for gender equality is likely to boost the prevalence of AGYW's ability to decide when and whom to marry by over 10%. These findings highlight the especially strong influence of community and elder support in Nigeria, where support from key reference groups appears even more impactful than AGYW's self-perceived support for gender equality.

In Kenya, while AGYW's self-perceived level of support for gender equality is more crucial for most outcomes, support from key reference groups is also positively associated with a few outcomes. For instance, a 10-point increase in support from AGYW peers is likely to reduce time spent on care work by 25 minutes per day and increase financial account ownership by 15%. Similarly, support from the broader community is linked to a 27-minute per day reduction in care work and a 10-month increase in the desired age at marriage. These findings suggest that targeted support from influential community groups may amplify the benefits of gender equality initiatives, demonstrating the potential for engaging key reference groups to drive meaningful improvements in AGYW's lives.

In summary, our findings underscore the crucial role that community normative support for gender equality can play in enhancing the economic empowerment of AGYW in both Kenya and Nigeria. Two key insights emerge: (1) targeting the entire community can be most effective, as it is likely to enhance both an AGYW's self-perceived support and reinforce it through backing from key reference groups, and (2) community normative support has the potential to create a cascading effect, positively impacting multiple outcomes for AGYW. Therefore, improving community support for gender equality broadly, as well as WEE in particular, by leveraging scalable gender-transformative approaches—such as mass media campaigns—combined with opportunities for community engagement, dialogue, and reflection can be a powerful and potentially cost-effective means of creating widespread change. Given that many interventions primarily focus on economic opportunities and livelihood programs, it is essential to adopt a dual approach that integrates both normative change and empowerment strategies. Moreover, aligning these gender transformative norms shifting strategies with programs and policies that address barriers to economic empowerment will enhance success by fostering a supportive environment essential for these initiatives. Ultimately, these efforts could lead to substantial improvements in AGYW's lives by nurturing their aspirations and expanding opportunities for economic empowerment.

Policy and Programmatic Implications

KEY TAKEAWAY 1: Investing in programs and policies that shift harmful gender norms and promote positive norms can transform AGYW's lives.

Supportive or more equitable gender norms can significantly shape AGYW's economic empowerment outcomes. Addressing harmful gender norms and promoting positive norms can unlock substantial potential in workforce participation, economic independence, control over earnings, and decision-making agency among AGYW.

KEY TAKEAWAY 2: Generating community normative support for gender equality can enhance *multiple* AGYW WEE outcomes, with the potential for a cascading effect across various aspects of their lives.

Living in more supportive or gender-equitable communities can enhance an AGYW's economic participation and independence, increase control and autonomy over income and marriage/partnership-related decisions, and reduce the burden of care work, among others. These changes can create more opportunities for personal and professional growth and empowerment.

KEY TAKEAWAY 3: Targeting communities could be an impactful way of shifting harmful gender norms and fostering positive ones to build more supportive environments.

Targeting entire communities has the potential to effectively shift harmful gender norms and promote positive alternatives, as both AGYW's self-perceived support and support from key reference groups play crucial roles in shaping outcomes. Leveraging scalable gender-transformative media approaches, combined with opportunities for community engagement, dialogue, and reflection, can be cost-effective and powerful in creating widespread change. Layering these initiatives with ongoing programs that address structural barriers to economic empowerment can further enhance their effectiveness by fostering the supportive environment needed for success.

II. INTRODUCTION

Overview and Research Questions

Decades of research demonstrate that gender inequality constrains or denies adolescent girls and young women (AGYW) agency and choice in their lives, limiting their voice and participation in their homes and communities. These inequalities have multi-layered, long-term negative effects on their health and life chances and on the health and development of their families and communities. They also impact future generations through intergenerational poverty and ill health transfer.

The global community recognizes the critical need for gender equality. Global commitments and norms, including those in the Sustainable Development Goals (SDGs) 2030 Agenda, underscore that development can only be sustainable if women and men benefit equally.[7] However, despite these commitments, progress in tackling gender inequality remains slow. According to the 2023 Global Gender Gap Index, at the current rate of progress, it will take 131 years to reach full parity, a decline from the 99.5 years projected in the 2020 report.[8]

Women's economic empowerment (WEE) is recognized as a key lever for overturning gender inequalities, but achieving it has been challenging in part due to harmful gender norms. These norms deprioritize women's education, labor force participation, and agency, while prioritizing early marriage and confining women's roles within the household.[9] Recent research suggests that gender norms can be measured and are amenable to change with proper interventions.[10] However, data on norms has been limited to smaller-scale studies on specific sub-groups, resulting in a limited understanding of how norms influence behaviors and how we might change them.

The Gender Norms Data Engine (GNDE) has addressed this issue by producing large-scale, population-level data on norms and behaviors across several themes, including WEE and related marital agency and aspiration norms and outcomes among AGYW in Kenya and Nigeria. The GNDE provides individual-level data but primarily contributes by offering spatial data on population characteristics, attitudes, and behaviors at any geographic level of interest across an entire country, including down to the ward level in Kenya and Nigeria. This is particularly useful in social norms research, as the enforcement of social norms occurs through pressure to conform to important others or reference groups.[11] This feature of GNDE allows us to understand both an AGYW's self-perceived norms and the norms adhered to by key reference groups in her community, such as AGYW peers, adolescent boys and young men (ABYM), older adults, and the broader community, and how that may then influence their behaviors or outcomes.

We selected these reference groups to understand AGYW behaviors because they represent key influencers in their social environment, as highlighted by the Lancet Commission on Adolescent

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[7] United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Retrieved from https://sustainabledevelopment.un.org/post2015/transformingourworld

[8] World Economic Forum. (2023). *Global gender gap report 2023*. Retrieved from https://www.weforum.org/reports/global-gender-gap-report-2023/

[9] Organisation for Economic Co-operation and Development. (2021). *Women's economic empowerment*. Retrieved from https://www.oecd.org/gender/women-s-economic-empowerment.htm

[10] Marcus, R., & Harper, C. (2015). *Gender justice and social norms–Processes of change for adolescent girls*. Overseas Development Institute. Retrieved from https://www.odi.org/publications/9522-gender-justice-and-social-norms-processes-change-adolescent-girls

[11] Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In *Advances in experimental social psychology* (Vol. 24, pp. 201-234). Academic Press.

Health and Wellbeing[12]. The full community (population aged 15–69 years) provides insight into the broader gender norms that shape AGYW opportunities and expectations. Older adults (25+ years) hold significant decision-making power within households, influencing key life outcomes such as education, employment, and marriage. AGYW peers (15–24-year-old females) directly reflect attitudes and behaviors within the same age cohort, while ABYM (15–24-year-old males) play an important role in shaping gender dynamics and relationship norms. Together, these groups can provide a comprehensive understanding of the multi-layered normative influences on AGYW behaviors and outcomes in Kenya and Nigeria, as supported by global research on adolescent development.

In this analysis, we leverage the GNDE to answer two critical questions:

1. Does an AGYW's (ages 15-24) self-perceived community support for gender-equitable norms influence their WEE-related behaviors and outcomes?

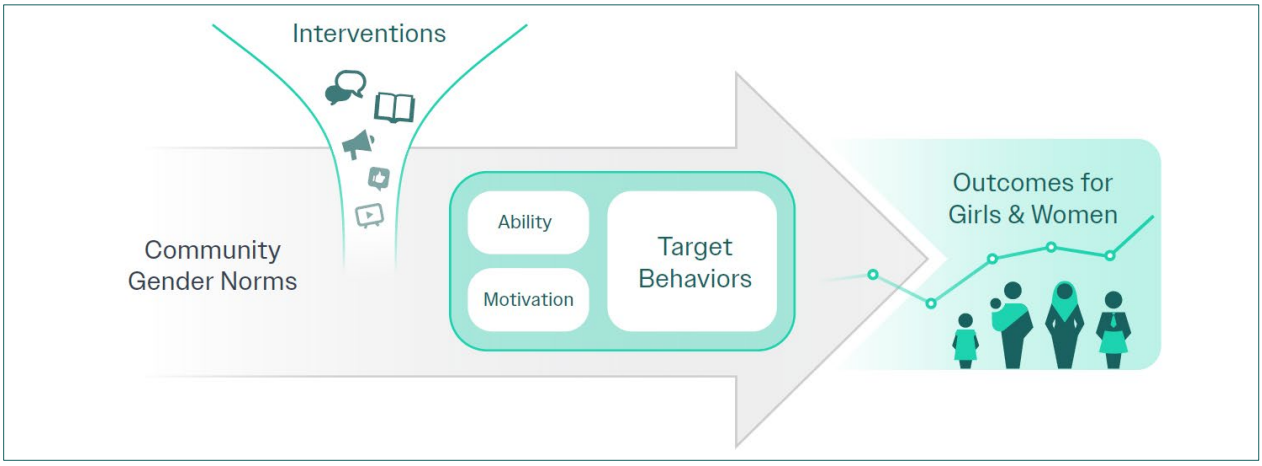
2. What is the role of normative support from key reference groups in the community? Which group matters most—whether it's the entire community (ages 15-69), adolescent girls and young women (AGYW: ages 15-24), adolescent boys and young men (ABYM: ages 15-24), or older adults (ages 25+)?

Conceptual Framework

The GNDE utilizes a comprehensive conceptual framework (Figure 1), informed by social norms theory and the Fogg behavior model[13], which was developed in consultation with key stakeholders to understand the relationship between community norms and behaviors and where interventions can be leveraged to change norms.[14,15] This framework guides the measures we collect and the analysis we conduct. While this visual representation simplifies a multi-directional process, it provides a theory-backed, actionable behavior change framework.

[12] Patton, G. C., Sawyer, S. M., Santelli, J. S., & Allen, N. B. (2016). Our future: A Lancet commission on adolescent health and wellbeing. *The Lancet, 387*(10036), 2423-2478. https://doi.org/10.1016/S0140-6736(16)00579-1
[13] Fogg, B. J. (2009). *A behavior model for persuasive design*. In *Proceedings of the 4th international conference on persuasive technology* (pp. 1-7). ACM. https://doi.org/10.1145/1541948.1541999
[14] Agha, S., Morgan, B., Archer, H., Paul, S., Babigumira, J. B., & Guthrie, B. L. (2021). Understanding how social norms affect modern contraceptive use. *BMC Public Health*, *21*(1), 1061.
[15] Cislaghi, B., & Heise, L. (2020). Gender norms and social norms: differences, similarities and why they matter in prevention science. *Sociology of health & illness*, *42*(2), 407-422.

Figure 1: GNDE Conceptual Framework for Norms and Behavior Change



According to this framework, there is both a direct and indirect relationship between community gender norms and AGYW behaviors and outcomes. The indirect pathway involves norms affecting the ability and motivation of AGYW, which in turn increases or decreases their propensity for behavior change. Hence, in our analysis, we assess the relationship between norms and behaviors and outcomes, as well as ability and motivation, as they are hypothesized to be in the pathway between norms and behaviors.

III. METHODOLOGY

In this section, we discuss our data sources, key measures, and analytical strategies to examine the relationship between norms and behavior, estimating the potential impact of improving the normative environment on the behaviors and outcomes of adolescent girls and young women (AGYW).

Data Sources

We used two types of data sources for the analysis: nationally representative surveys with randomized computer-assisted telephone interviews (CATI) and spatial data aggregated at the third administrative division level in Kenya and Nigeria.

Survey Data

Fraym oversaw the implementation of nationally representative surveys in Kenya and Nigeria. The data was collected via computer-assisted telephone interviews (CATI) in November and December 2023. In Nigeria, the final sample size was 10,215 respondents aged 15-69, of whom 5,584 were adolescents and young adults aged 15-24. In Kenya, the final sample size was 6,290 respondents aged 15-69, of whom 3,363 were adolescents and young adults aged 15-24. The analysis in this report focused on the AGYW sample of 2,869 in Kenya and 4,669 in Nigeria. The surveys utilized random digit dialing (RDD) and quota sampling to optimize representativeness and address inherent limitations of CATI surveys. RDD ensures that all mobile phone subscribers in the country have an equal probability of being called and surveyed. Additionally, timing of phone calls was adjusted to ensure adequate representativeness from all demographic groups, including poorer, rural female respondents. Quota sampling helped minimize biases inherent in telephone-based surveys by setting interlocking quotas across age, gender, education levels, wealth status, and geographic areas (geopolitical zones in Nigeria, provinces in Kenya).[16]

Fraym designed quotas on the following dimensions: (1) the general population (nested by age, gender, and geopolitical zone/province); (2) socioeconomics (nested by zone/province); (3) educational attainment (nested by zone/province); and (4) urbanicity. Weighting was applied using geopolitical zone or province proportions, rather than national proportions, to correct for geographic variability.

An iterative proportional fitting (IPF) process was then used to generate survey weights, ensuring that sample proportions closely matched the ideal population sub-groups. While modest divergences were found between the sample and the general population, based on Demographic and Health Survey data from Kenya (2022) and Nigeria (2018), these were addressed through the raking process. Detailed demographic characteristics, including weighted and unweighted proportions, can be found in Tables A and B in the appendix.

[16] Sampling Techniques for Quantitative Research. (2021). 221-234. doi: 10.1007/978-981-19-5441-2_15 Moniruzzaman Sarker, Mohammed Abdulmalek AL-Muaalemi

Spatial Data

To produce spatial data estimates, Fraym utilizes machine learning techniques to generate indicators of interest at one km² resolution. This process relies on two primary types of data inputs:

Firstly, *primary data* consists of scientifically sampled, geo-referenced survey data. This includes the nationally representative CATI survey conducted among individuals aged 15-69, as described above.

Secondly, *satellite imagery and related derived data products* encompass earth observation data, gridded population information, and proximity to physical locations such as health clinics, schools, ports, and roads.

The methodology for creating spatial layers from household survey data employs a model-stacking machine learning approach to predict continuous surfaces of population indicators at one km² resolution. This method builds on established techniques for spatial data interpolation.[17] The process involves creating a model that identifies correlations between the sampled survey data from enumeration clusters and the satellite imagery and remotely sensed data from the same locations. This model is then used to predict survey data for areas that were not directly surveyed. A similar approach was pioneered by USAID's Demographic and Health Surveys program in 2015 and has since been enhanced by Fraym and others.[18]

In the machine learning process, predictions are generated from base-learner models, which are then used to train a super-learner model.[19] By employing multiple base models, the accuracy of predictions across different geographies is improved. Models are fine-tuned and assessed using industry-standard cross-validation techniques. Techniques such as boosting, bagging, and k-fold cross-validation are applied to enhance the predictive power of smaller datasets.[20] For grid cells without survey data, a model using parameters from the training and tuning process is applied to make predictions.

Fraym data scientists assess the quality of the data layers by examining standard model metrics like R-squared and Root Mean Square Error (RMSE). For instance, an RMSE value of 0.025 for a proportional question from the survey (e.g., proportion of adults with secondary education) indicates an average error of approximately 2.5 percentage points between the prediction and the actual data from enumeration areas. Additionally, at the lowest representative administrative level (e.g., regions), the spatial surface data is compared against the survey data. The survey mean is compared with the implied mean of the surface when aggregated through population-weighted zonal statistics.

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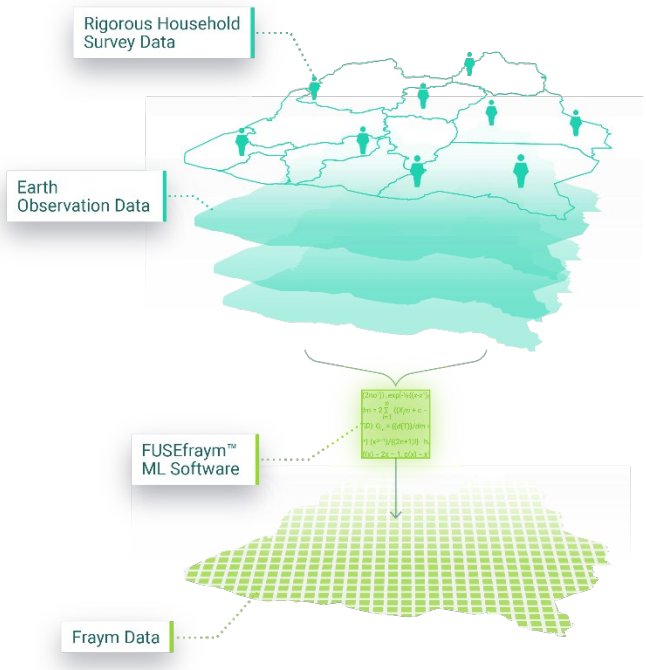
[17] Davies, M. M., & Van Der Laan, M. J. (2016). Optimal spatial prediction using ensemble machine learning. *The International Journal of Biostatistics, 12*(1), 179-201. https://doi.org/10.1515/ijb-2015-0018
[18] Gething, P., Tatem, A., Bird, T., & Burgert-Brucker, C. R. (2015). *Creating spatial interpolation surfaces with DHS data* (DHS Spatial Analysis Reports No. 11). ICF International.
[19] Davies, M. M., & Van Der Laan, M. J. (2016). Optimal spatial prediction using ensemble machine learning. *The International Journal of Biostatistics, 12*(1), 179-201. https://doi.org/10.1515/ijb-2015-0018
[20] Ghojogh, B., & Crowley, M. (2019). *The theory behind overfitting, cross-validation, regularization, bagging, and boosting: Tutorial* (arXiv preprint arXiv:1905.12787).

Figure 2: Fraym Data Production Process



Key Variables

The following paragraphs provide detailed information on the key dependent and independent variables and the socio-demographic covariates used in the analysis.

Dependent Variables

We employed several measures to examine AGYW's economic empowerment and agency, and desire to delay marriage. Additionally, we assessed behavioral attributes such as ability and motivation that are impacted by norms and, in turn, influence specific behaviors. Details on each measure are provided below.

Employment: A binary indicator was constructed to capture whether AGYW, excluding those currently in school, reported being engaged in work during the preceding seven days compared to those who did not report working.

Remuneration for Work: A binary indicator was created to capture whether AGYW, excluding those currently in school, reported being paid in cash or both cash and kind for work, excluding those who were paid only in kind, received no payment, or were not working.

Control Over Income: A binary measure was constructed to capture the degree of control AGYW, excluding those currently enrolled in school, have over how their income is spent. AGYW reported their control on a five-point scale: All, Most, Half, Some, or None of the income. The indicator was scored as 1 if AGYW controlled all or most of their income, and 0 if they controlled half, some, or none of their income, did not earn an income, or did not work outside the house.

Ownership of Financial Accounts: A binary measure was constructed to capture whether AGYW own any of three types of financial accounts in their name: a bank account or an account at a formal financial institution, a mobile money account, or an informal savings account at a savings group or club. The indicator was scored as 1 if the AGYW owned at least one financial account and 0 if they did not own any financial accounts.

Time Spent on Care Work: A continuous measure was constructed to capture the total time AGYW spend on care work and household chores daily, recorded in minutes. Outliers were adjusted by capping reports that exceeded 900 minutes (15 hours).

Agency Over When to Marry: A binary indicator was used to measure AGYW's agency over their marriage timing. It combined responses from both married and unmarried AGYW, scoring 1 if the AGYW reported having the final say and 0 otherwise. Unmarried AGYW indicated who would have the final say regarding their marriage timing, while married AGYW reported who had the final say at the time of their first marriage.

Agency Over Who to Marry: A binary indicator was used to measure AGYW's agency over their choice of spouse. It combined responses from both married and unmarried AGYW, scoring 1 if the AGYW reported having the final say and 0 otherwise. Unmarried AGYW reported who would have the final say over their choice of spouse, while married AGYW indicated who had the final say at the time of their first marriage.

Ideal Age at Marriage: A continuous indicator was created to measure AGYW's ideal age at marriage reported in years, combining responses from both married and unmarried AGYW. Unmarried AGYW reported their ideal age for marriage or living full-time with a partner, while married AGYW's indicated the age they ideally would have chosen for their marriage or partnership. Outliers were adjusted by capping responses where AGYW reported an ideal age over 40 years, standardizing the maximum at 40 years of age.

Ability: A continuous normalized score was created to measure AGYW's ability to achieve their WEE goals and delay marriage or pregnancy. This composite ability score was derived using an equally weighted summation method and normalized to a scale ranging from 0 to 100, where a higher score indicates a greater ability to achieve these goals. Ability was assessed through a series of statements evaluated on a five-point Likert scale, which measured how easy or difficult it was for AGYW to refuse early marriage, delay marriage, or plan a pregnancy in order to pursue education, achieve financial independence, find employment, and continue working outside the home after marriage.[21]

Motivation: A continuous normalized score was created to measure AGYW's motivation to achieve their WEE goals and delay marriage or pregnancy. This composite motivation score was derived using an equally weighted summation method and normalized to a scale ranging from 0 to 100, where a higher score indicates greater motivation to achieve their WEE goals. AGYW responded to a module assessing the psychological drivers influencing their behavior, rating the importance of various behaviors to them on a five-point Likert scale from 'Not at all important' to 'Extremely important.' The key aspects measured included motivation to pursue education and achieve financial

[21] Negatively worded items were reverse coded to reflect directionality, ensuring higher scores indicated greater ability.

independence before marriage, planning a pregnancy to achieve education and career goals, and engaging in household decision-making.[22]

Independent Variables

Our key independent variables assess the level of normative support for gender equality in AGYW's community based on the perceptions of AGYW themselves or the support received from specific reference groups. These reference groups include: the full community (population aged 15-69 years), older adults (25+ years old), AGYW peers (15–24-year-old females), and ABYM (15–24-year-old males). To construct these measures, we used two scales that capture different domains of gender equality. The first is the G-NORM scale, our primary measure that captures broader gender equality within the community. The second is the WEE scale, which focuses on specific norms related to women's economic empowerment and the timing of marriage. The measures were constructed as follows:

AGYW's perceived level of support for gender equality in their community: Separate continuous measures ranging from 0 to 100 were constructed using predicted factor scores derived from the scale validation process, specifically from the confirmatory factor analysis (CFA), and then normalized on a 0 to 100 scale. Higher scores on these measures indicate greater perceived community support for broader gender equality (as captured by the G-NORM scale) and positive norms around women's economic empowerment and the timing of marriage (as captured by the WEE scale).

Support from key reference groups for gender equality in their community: Separate continuous measures, ranging from 0 to 100, were developed for the G-NORM and WEE scales, with higher values indicating greater support. These measures were created for each key reference group. Predicted factor scores for the 15–69-year-old population were generated using confirmatory factor analysis (CFA). Spatial interpolation was then used to estimate hyperlocal values for each reference group, with scores aggregated to the ward level in Kenya and Nigeria. Variations in official ADM3 shapefiles affected the sample sizes analyzed: 2,869 in Kenya and 4,669 in Nigeria.

Details of these scales and the validation process are provided in the following paragraphs:

The original G-NORM scale, developed and validated by researchers to assess gender equality more broadly, is an 18-item scale based on Connell's theory of gender and power . It captures gender equality across three domains: gendered expectations around household tasks, household power and decision-making (including who handles finances and makes final decisions, as well as men's control over women), and women's "other" orientation (referring to women prioritizing others' needs over their own, particularly around food and nutrition).[23] We conducted stakeholder discussions to ensure the relevance of these items for the Kenyan and Nigerian contexts. We then performed exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) to evaluate the reliability and validity of the scales in these contexts. Based on stakeholder feedback, we excluded four items from the original scale that focused on women's "other" orientation, as they were not deemed relevant for Kenya and Nigeria. The final scales for Kenya and Nigeria were split into descriptive and injunctive norm sub-scales, as per social norms theory. Descriptive norms refer to perceptions of what

[22] Negatively worded items were reverse coded to ensure a higher score indicated more motivation.
[23] Sedlander, E., Bingenheimer, J. B., Long, M. W., Swain, M., & Rimal, R. N. (2022). The G-NORM scale: development and validation of a theory-based gender norms Scale. *Sex roles*, *87*(5), 350-363.

behaviors are commonly practiced, while injunctive norms relate to perceptions of what behaviors are socially approved.[24] The final scales resulted in an 8-item, two-factor scale for Kenya (Table C in appendix) and a 12-item, four-factor scale for Nigeria (Table D in appendix), capturing the domains of gendered division of labor and household power and decision-making. These scales exhibited high Cronbach's alpha values, all above 0.70, indicating good internal consistency and reliable measurement of the underlying constructs.[25]

Additionally, we developed a new scale to capture norms around women's economic empowerment and delaying marriage to understand how positive norms in these areas affect AGYW behaviors and outcomes. This WEE scale was constructed using a curated set of norms and sanction items, selected through an extensive literature review and expert reviews, and tested across several survey rounds. The items cover norms related to support for women's economic empowerment and financial independence, as well as norms related to child marriage. This scale underwent a validation process similar to that of the G-NORM scale. In Kenya, it resulted in an 11-item, four-factor scale (Table E), while in Nigeria, it produced an 18-item, four-factor scale (Table F). The scales exhibited high Cronbach's alpha values (around 0.80), but the sub-scales had lower alpha values; thus, only the full scale was used for analysis.

Covariates

Several socio-demographic covariates related to both gender norms and key behaviors or outcomes were included in our analysis. The details of these measures are provided below:

Age: Age was measured as a continuous measure capturing self-reported age in years among AGYW.

Urban Residence: A binary variable indicating place of residence was created based on AGYW's self-reported geographic location, with Fraym geocoding each respondent's location using the Global Human Settlement Layer; this variable scores 1 for urban locations and 0 for rural locations.

Religion: A binary variable was constructed to measure religion among AGYW, distinguishing between Christians (including Roman Catholic, Protestant, and other Christian denominations) and others. This variable scores 1 if AGYW identified as Roman Catholic, Protestant, or another Christian denomination, and 0 if they identified as Muslims, adherents of other religious beliefs, had no religious beliefs, reported 'don't know,' or refused to respond.

Schooling: A categorical variable reflecting different levels of education among AGYW was constructed. This variable categorized their education as "None" for those without formal education, "Primary" for those with complete or incomplete primary education, "Secondary" for those with complete or incomplete secondary education, and "Higher" for those with complete or incomplete higher education.

Wealth: A categorical variable was constructed to classify individuals into low, medium, and high levels of wealth based on self-reported ownership of select assets. The asset set was chosen by

[24] Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. In *Advances in experimental social psychology* (Vol. 24, pp. 201-234). Academic Press.
[25] Fraym's white paper with details of the scale validation process is available upon request.

examining the relationship between household assets and wealth quintiles in the Demographic and Health Survey (DHS) for each country. Low wealth indicates ownership of none of the key assets, medium wealth includes ownership of one or a few target assets, and high wealth signifies ownership of all target assets.

Statistical Analyses

Analyses were conducted in steps. First, we examined the distribution and summary statistics of key variables. This was followed by bivariate analysis, where we explored associations between community gender norms and AGYW behaviors/outcomes, advancing only statistically significant relationships at the 0.05 p-value level to the multivariate analysis stage. Finally, multivariate regression models were deployed to examine the relationship between community gender norms and AGYW behaviors and outcomes, adjusting for key socio-demographic covariates: age, place of residence (urban/rural), religion, educational attainment, and wealth status.

For binary outcomes, such as AGYW's employment status, receiving remuneration for work, or control over income, we implemented multivariate logistic regression models and computed odds ratios and standard errors. For continuous outcomes, such as time spent on care work or the ideal age of marriage, we used multivariate linear regression models and calculated coefficients and standard errors. Three types of models were implemented for each behavior/outcome variable and gender norm measure (G-NORM scale and the WEE scale):

(1) AGYW's self-perceived support for gender equality;
(2) Separate models with each reference group examining the role of their support for gender equality; and
(3) A combined model that included both the reference group's score and the AGYW's self-perceived score.

All models were population-weighted and accounted for complex survey design, including clustering of data. All analyses were conducted using STATA 17 and R (4.1.0) statistical software packages.

Finally, we quantified the practical impact of improving the normative environment. For binary outcomes, we simulated a 10-point increase in the norms score and predicted the resulting probabilities using the 'predict' function in STATA following logistic regression analysis.[26] This function computes the predicted probabilities based on the estimated logistic model, allowing us to determine the likelihood of engaging in specific behaviors at different levels of the norms score.[27] The difference between the simulated probability and the baseline probability reflects the improvement in AGYW's likelihood of engaging in these behaviors, measured in percentage points. This gain is expressed as a percentage increase from the baseline by dividing the change in probability by the baseline probability. Given that prevalence reflects the proportion of individuals exhibiting a particular outcome, it is directly analogous to the probability of that outcome occurring within the population. Consequently, these findings are interpreted as changes in prevalence, which can be equated to

[26] StataCorp. (2024). *predict function*. Stata Base Reference Manual. College Station, TX: StataCorp LLC. Available from https://www.stata.com/manuals13/rpredict.pdf

changes in the predicted probability.[27] Therefore, all results are reported as survey-weighted mean percentage increases in the prevalence of the behavior relative to the baseline prevalence.

For continuous outcomes, we utilized the regression coefficients from the norm scores to assess the impact of a one-unit change in the norms score, while holding other covariates constant. To simulate a 10-point increase in the normative environment, we scaled these coefficients by a factor of 10 to estimate the resultant impact on behavior. All findings are presented as changes in survey-weighted mean units (e.g., increases in score or decreases in time spent on care work).

Limitations

Our analysis has several strengths, particularly the use of novel population-level measures on norms and integration of individual-level data with spatial data to understand the relationship between community normative environment and AGYW outcomes. However, we acknowledge a few limitations. First, our analysis is based on cross-sectional data, and the results should be interpreted as evidence of strong associations rather than causal relationships. Additionally, our individual-level data was collected via telephone surveys. While we employed techniques like random digital dialing and quota sampling to improve representativeness and used spatial data to account for socio-demographic and environmental covariates, non-phone users may have been underrepresented. Those missed are more likely to be the poorest and hardest-to-reach AGYW and their families. As a result, our models might underestimate the effects of gender norms, which could have a more substantial impact on this population subgroup.

Moreover, our analysis focuses on the direct relationship between gender norms and AGYW outcomes, but indirect effects—such as through ability, motivation, and other factors—may also be significant but were not explored in this study, potentially leading to an underestimation of the true impact of gender norms on AGYW outcomes. Finally, while our norms measures were based on existing validated tools, including the G-NORM scale, and we followed a rigorous scale validation process given the new contexts in which the scales were applied, we were unable to supplement this with qualitative research that could have further contextualized the measures.

Despite these limitations, our findings provide valuable insights and contribute to a deeper understanding of the complex interplay between community gender norms and AGYW outcomes, laying the groundwork for future research and intervention strategies.

[27] Muller CJ, MacLehose RF. Estimating predicted probabilities from logistic regression: different methods correspond to different target populations. Int J Epidemiol. 2014 Jun;43(3):962-70. doi: 10.1093/ije/dyu029. Epub 2014 Mar 5. PMID: 24603316; PMCID: PMC4052139. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4052139/

IV. DESCRIPTIVE STATISTICS RESULTS

The following paragraphs provide descriptive statistics of key variables used for the multivariate analysis in Kenya and Nigeria (Table 1-4).

Behaviors/Outcomes

A larger proportion of Nigerian AGYW currently not in school are employed (45.5%) and receive remuneration (39%) compared to their Kenyan counterparts, where 38% of AGYW work and 31% receive payment. The proportion of AGYW with control over their income is similar in both countries; however, a larger proportion of Kenyan AGYW who have earnings also have control over their income. Additionally, Kenyan AGYW have higher rates of financial account ownership and spend an average of 3.8 hours (225 minutes) daily on care work and household chores, compared to 3.7 hours (220 minutes) for their Nigerian counterparts.

Regarding marital decision-making and ideal age at marriage, Kenyan AGYW report higher levels of agency, with over 90% indicating they can decide when and whom to marry (Table 1). In Nigeria, 67% of AGYW report having agency over when to marry and 74% being able to decide whom to marry. The preferred age at marriage is 25.4 years in Kenya, compared to about a year younger in Nigeria at 24.5 years.

Overall, the scores for ability and motivation to achieve WEE goals are relatively low, ranging between 50 and 60 (out of 100) in both countries. However, Kenyan AGYW report higher levels of ability and motivation than their Nigerian peers, with average scores of 5 points higher on both measures (Table 1).

Gender Norms

Overall, Kenya provides a more supportive normative environment for gender equality than Nigeria (Table 2), although levels of support are not particularly high in either country.

In Nigeria, support for broader gender equality (G-NORM scale) was lowest among ABYM (Mean: 43.2; SD: 0.12), followed by AGYW peers (Mean: 43.4; SD: 0.09), the community overall (Mean: 44.1; SD: 0.08), and older adults (Mean: 44.5; SD: 0.09). In Kenya, support was lowest among AGYW peers (Mean: 52; SD: 0.15), followed by the community overall (Mean: 53.5; SD: 0.14), older adults (Mean: 54.6; SD: 0.14), with ABYM being the most supportive (Mean: 54.9; SD: 0.15). In both countries, there is more support for positive norms around women's economic empowerment and delaying marriage (as measured by the WEE scale) (Table 3).

Socio-Demographic Covariates

In both countries, the average age of AGYW is approximately 19 (Table 4). Nigerian AGYW are twice as likely to belong to an urban area as Kenyan AGYW. A higher percentage of Kenyan AGYW (87%) self-identify as Christian compared to Nigerians (58%). Education levels show that more Kenyan AGYW have primary and higher education, whereas a larger proportion of Nigerian AGYW report having no schooling.

V. MULTIVARIATE ANALYSIS RESULTS

This section outlines the results from the multivariate regression models. Each sub-section covers one or two related outcomes.

Employment and Remuneration for Work

The following paragraphs summarize key results from multivariate logistic regression models examining the relationship between community gender norms and an AGYW's participation in work and receiving remuneration for work in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Tables 5 and 6 present the results of separate multivariate logistic regression models predicting AGYW's participation in work and receiving remuneration for work based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale) in their community.

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their participation in work and receiving remuneration for work. In both countries, AGYW who perceive greater community support for gender equality are significantly more likely to be employed and be paid for work, even after adjusting for socio-demographic factors such as wealth, education, place of residence, and religion.

In Nigeria, a one-point increase in AGYW's self-perceived support for positive norms around women's economic activity (WEE scale) in their community increases their odds of being employed by 1% (OR: 1.01; SE: 0.003) and receiving remuneration for their work by 1% (OR: 1.01; SE: 0.003). In Kenya, a one-point increase in AGYW's self-perceived community support for broader gender equality (G-NORM scale) is associated with a 1% increase in their employment (OR: 1.01; SE: 0.003) and remuneration status (OR: 1.01; SE: 0.003).

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the resulting change in the probability—and thus the prevalence—of employment and remuneration. The percentage change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would raise AGYW employment prevalence by 7.7% in Nigeria and 4.3% in Kenya, and increase the prevalence of them receiving remuneration by 5% in Nigeria and 5.3% in Kenya.*

Impact of Key Reference Group Support for Gender Equality

Tables 5 and 6 present results from separate multivariate logistic regression models predicting AGYW's employment status and receipt of remuneration for work based on support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic activity (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (25+), AGYW peers, and ABYM.

We find a statistically significant positive association between AGYW's employment and receipt of payment for work with support from key reference groups for gender equality in Nigeria, but not in Kenya.

In Nigeria, normative support from all key reference groups for broader gender equality (G-NORM scale) increases the odds of both employment and receiving remuneration among AGYW.[28] The largest impact was observed from support by the community overall and older adults, followed by AGYW and ABYM peers. Specifically, greater support from older adults for broader gender equality (OR: 1.03; SE: 0.01) increases the odds of AGYW receiving remuneration for their work by 3%. These relationships remained significant even after including AGYW's self-perceived norms in the models (Tables 5 and 6).[29]

To understand the practical impact, we simulated a 10-point increase in the norms score of key reference groups to estimate changes in the predicted probability—and hence the prevalence—of AGYW's employment and remuneration. The percentage change from the baseline is illustrated in Figures 3 and 4. These results underscore how enhancing community support for gender equality among key reference groups could lead to substantial increases in employment and remuneration among AGYW in Nigeria.

[28] In Nigeria, support for positive WEE norms (WEE scale) from all reference groups was also positively associated with both outcomes.
[29] In Nigeria, support from key reference groups remains significant even when including AGYW's self-perceived level of community support in the models. The magnitude of the impact also remains comparable to models without adjusting for self-perceived support. In Kenya, AGYW's self-perceived community support continues to be critical, with reference groups not having an impact.

Figure 3: Reference Group's Support for Gender Equality Norms in Nigeria[30]

*A 10-point increase in each reference group's support for gender equality norms increases the prevalence of **AGYW's employment** by…*

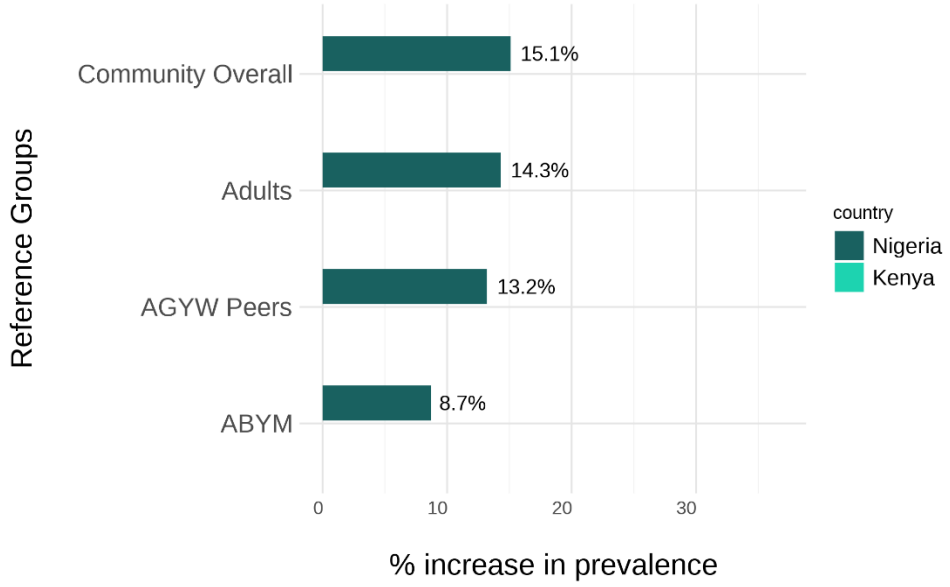
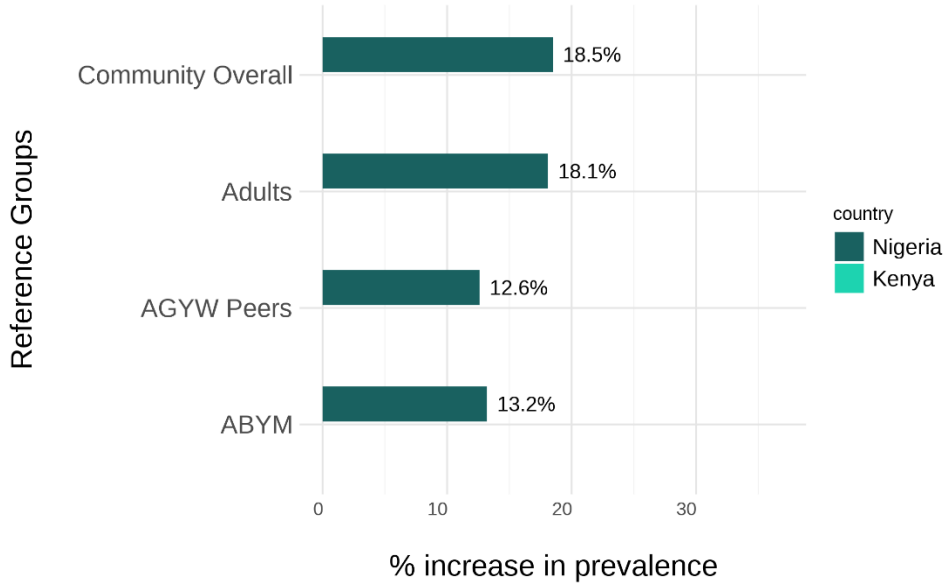


Figure 4: Reference Group's Support for Gender Equality Norms in Nigeria[31]

*A 10-point increase in each reference group's support for gender equality norms increases the prevalence of **AGYW's remuneration** by…*



[30] In Kenya, no statistically significant associations were found between AGYW's employment and the reference group gender norms.
[31] In Kenya, no statistically significant associations were found between AGYW's renumeration and the reference group gender norms.

Control Over Income

The following paragraphs summarize key results from multivariate logistic regression models examining the relationship between community gender norms and an AGYW's control over her income in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Table 7 presents the results of separate multivariate logistic regression models predicting AGYW's control over their own income based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic activity (measured by the WEE scale).

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their personal control over self-generated income in Nigeria and Kenya. In both countries, AGYW who perceive greater community support for gender equality are significantly more likely to control their income, even after adjusting for socio-demographic factors such as wealth, education, place of residence, and religion.

The magnitude of the impact is larger in Nigeria than in Kenya, and the specific norms influencing this control differ between the two countries. In Nigeria, a one-point increase in AGYW's self-perceived support for positive norms around women's economic activity (WEE scale) in their community increases their odds of controlling their income by 2% (OR: 1.02; SE: 0.004). In Kenya, a one-point increase in AGYW's self-perceived community support for broader gender equality (G-NORM scale) is associated with a 1% increase in their income control (OR: 1.01; SE: 0.003). Additionally, in Kenya, injunctive norms— what is commonly approved in their community—show a significant positive association with the odds of AGYW controlling their income.

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the change in the predicted probability—and thus the prevalence—of their control over income. The percentage change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would increase the prevalence of AGYW's control over their own income by 17.7% in Nigeria and 5% in Kenya.*

Impact of Key Reference Group Support for Gender Equality

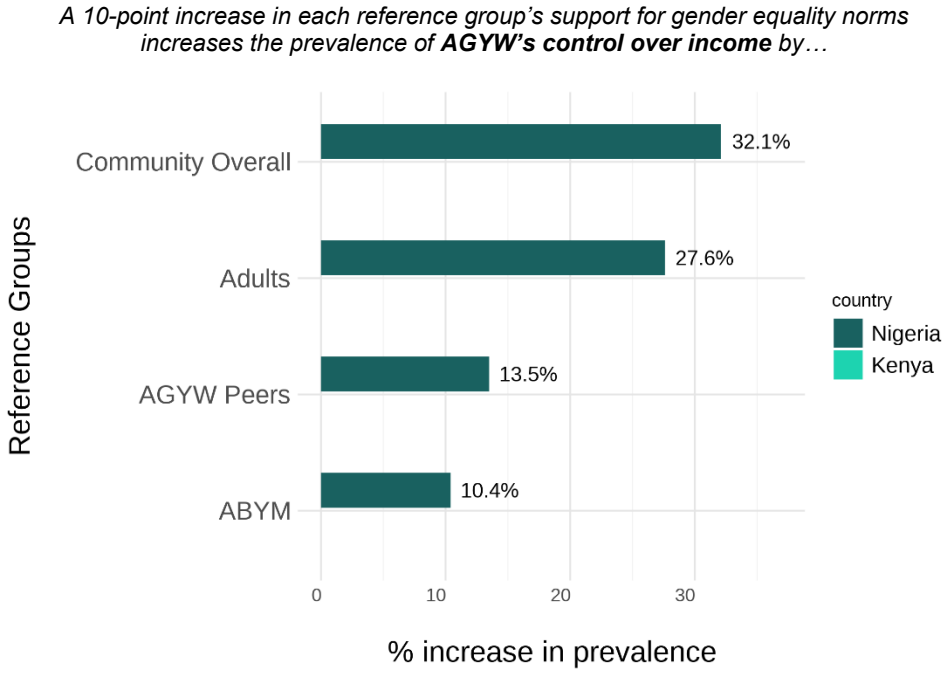
Table 7 shows results from separate multivariate logistic regression models predicting AGYW's control over their own income based on support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic activity (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (25+), AGYW peers, and ABYM.

We find a statistically significant positive association between AGYW's control over her income and support from key reference groups in her community in Nigeria, but not in Kenya. In Nigeria, normative support from all key reference groups increased the odds of an AGYW having control over

her income. The impact was largest for the community overall and older adults, followed by AGYW peers. Specifically, greater support from older adults for broader gender equality (G-NORM scale) increases the odds of an AGYW having control over her income by 4% (OR: 1.04; SE: 0.009).[32] These relationships hold even after including AGYW's self-perceived norms in the same models (Table 7).[33]

To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in the predicted probability—and thus the prevalence—of AGYW having control over their income. The percentage change from the baseline is shown in Figure 5. These results highlight how increasing community support for gender equality among key reference groups could lead to substantial improvements in AGYW's control over their income in Nigeria.

Figure 5: Reference Group's Support for Gender Equality Norms in Nigeria[34]



Ownership of Financial Accounts

The following paragraphs summarize key results from multivariate logistic regression models that examine the relationship between community gender norms and an AGYW's ownership of financial accounts[35] in Nigeria and Kenya.

[32] Greater support from older adults for women's economic empowerment (WEE scale) also increases the odds of an AGYW having control over her income by 4% (OR: 1.04; SE: 0.010).
[33] In Nigeria, support from key reference groups remains significant even when including AGYW's self-perceived level of community support in the models. The magnitude of the impact also remains comparable to models without adjusting for self-perceived support. In Kenya, AGYW's self-perceived community support continues to be critical, with reference groups not having an impact.
[34] In Kenya, no statistically significant associations were found between AGYW's control of income and the reference group gender norms.
[35] The financial ownership variable is coded as "owning" if the AGYW reports having any type of financial account, including formal bank accounts, informal savings accounts, or mobile bank accounts.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Table 8 presents the results of separate multivariate logistic regression models predicting AGYW's ownership of a financial account based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic activity (measured by the WEE scale).

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their ownership of a financial account in both Nigeria and Kenya. In both countries, AGYW who perceive greater community normative support for gender equality are significantly more likely to have a financial account in their name, even after adjusting for socio-demographic factors such as wealth, education, and religion.

In Nigeria, a one-point increase in AGYW's self-perceived support for broader gender equality (G-NORM scale) in their community increases their odds of owning a financial account by 1% (OR: 1.01; SE: 0.002). Similarly, in Kenya, a one-point increase in AGYW's self-perceived support for positive norms around women's economic activity (WEE scale) is associated with a 1% increase in the odds of owning a financial account (OR: 1.01; SE: 0.004). Additionally, in Nigeria, both supportive descriptive norms—what is commonly done in the community—and injunctive norms—what is commonly approved—increased the odds of owning an account.

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the change in the predicted probability—and hence the prevalence—of their ownership of financial accounts. The percentage change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would increase the prevalence of AGYW owning a financial account by 6% in Nigeria and 3.5% in Kenya.*

Impact of Key Reference Group Support for Gender Equality

Table 8 shows results from separate multivariate logistic regression models predicting AGYW's ownership of a financial account based on support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (25+), AGYW peers, and ABYM.

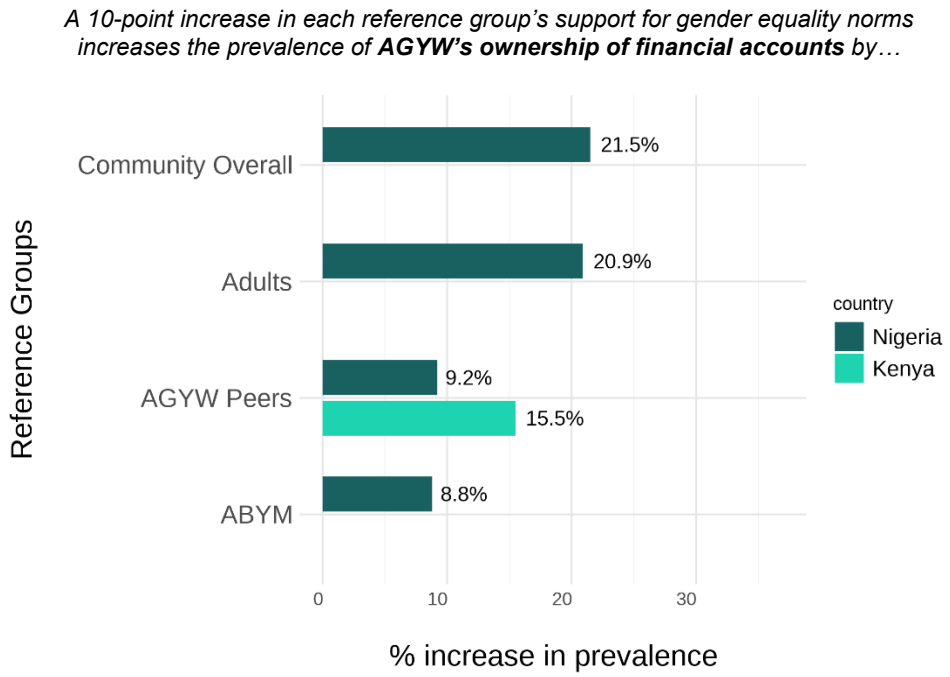
We find a statistically significant positive association between AGYW's ownership of financial accounts and support from key reference groups in her community in both Nigeria and Kenya.[36] In Nigeria, normative support from all key reference groups for gender equality increased the odds of an AGYW owning a financial account, with the largest impact observed from the community overall

[36] In Kenya, support among AGYW peers for positive norms around women's economic empowerment is marginally significant (OR: 1.03; SE: 0.01) and this association does not hold after including self-perceived norms in the same models (Table 8).

and older adults.[37] Specifically, greater support from the community overall for broader gender equality (G-NORM) increases the odds of an AGYW owning an account by 3% (OR: 1.03; SE: 0.01). These relationships remain significant even after including AGYW's self-perceived norms in the same models (Table 8). In Kenya, support from AGYW peers for positive WEE norms is marginally significantly associated with odds (OR: 1.03; SE: 0.01) of owning a financial account, but the relationship does not hold when self-perceived norms are also included in the model (Table 8).

To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in the predicted probability—and thus the prevalence—of AGYW owning financial accounts. The percentage change from the baseline is shown in Figure 6. These results highlight how increasing community support for gender equality and women's economic empowerment among key reference groups could lead to major improvements in AGYW's financial account ownership in both Nigeria and Kenya.

Figure 6: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[38]



Time Spent on Care Work

The following paragraphs summarize key results from multivariate linear regression models examining the relationship between community gender norms and the time AGYW spent on care work and household chores daily in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

[37] In Nigeria, support for positive WEE norms (WEE scale) from all reference groups was also positively associated with both outcomes.
[38] In Kenya, the impact of community overall, adults and ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's ownership of financial accounts.

Table 9 presents the results of separate multivariate linear regression models examining the association between the time AGYW spend on care work and their self-perceived level of support for broader gender equality (measured by the G-NORM scale and Descriptive and Injunctive Norm sub-scales) and positive norms around women's economic empowerment (measured by the WEE scale).

We find a statistically significant relationship between AGYW's self-perceived level of community support for gender equality and time spent on care work and household chores in both Nigeria and Kenya. In both countries, AGYW who perceive greater community support for gender equality spend significantly less time on care work, even after adjusting for socio-demographic factors such as wealth, education, and religion.

A one-point increase in AGYW's self-perceived support for positive norms around women's economic activity (WEE scale) in their community reduces time spent on care work by 1 minute and 32 seconds (β: -1.32; SE: 0.214) in Kenya, and by just under a minute (β: -0.85; SE: 0.167) in Nigeria.

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the reduction in time spent on care work. The change from the baseline is summarized below in minutes per day.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would reduce the time AGYW spend on care work by 13.2 minutes per day in Kenya (approximately 1.5 hours per week) and by 8.5 minutes per day in Nigeria (approximately 1 hour per week).*

Impact of Key Reference Group Support for Gender Equality

Table 9 shows results from separate multivariate linear regression models examining the relationship between the time AGYW spend on care work and support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (25+), AGYW peers, and ABYM.

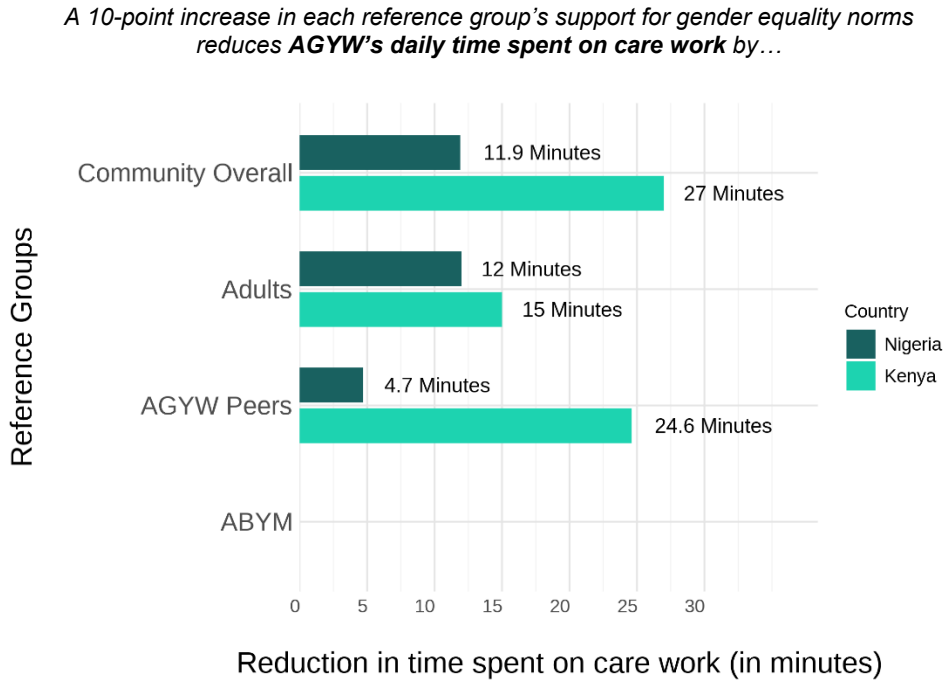
In both countries, we find a statistically significant relationship between AGYWs' time spent on care work and support for gender equality from all key reference groups other than ABYM. In Kenya, a one-point increase in support for positive WEE norms (WEE scale) among AGYW peers significantly reduces the time spent on care work by 2 minutes and 46 seconds (β: -2.46; SE: 0.981), while support from community overall marginally reduces it by 3 minutes (β: -2.70; SE: 1.45).[39] In Nigeria, a one-point increase in support for broader gender equality (measured by the G-NORM scale) from the community overall and from older adults reduces the time an AGYW spends on care work by approximately 1 minute and 20 seconds (Table 9).[40] These relationships remain significant when AGYW's self-perceived norms are included in the Nigerian models.

To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in the time AGYW spend on care work. The change from the baseline is summarized in minutes per day in Figure 7. These results highlight how increasing

[39] When we include self-perceived norms into the model, AGYW peers are no longer significant in Kenya.
[40] Support for positive WEE norms among community overall and older adults also significantly reduces time AGYW spend on care work.

community support for gender equality and women's economic empowerment among key reference groups could lead to substantial reductions in the time AGYW spend on care work daily in both countries, with a larger impact observed in Kenya.

Figure 7: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[41]



Agency Over When and Who to Marry

The following paragraphs summarize key results from multivariate logistic regression models examining the relationship between community gender norms and an AGYW's ability to decide when and whom to marry in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Tables 10 and 11 present the results of separate multivariate logistic regression models predicting AGYW's ability to make decisions about when and whom to marry, based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale).

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their ability to make decisions regarding their own marriage in both Nigeria and Kenya. In both countries, AGYW who perceive greater community support for gender equality are significantly more likely to have a say in when and whom they marry, even after adjusting for socio-demographic factors such as wealth, education, and religion.

[41] In both Nigeria and Kenya, the impact of ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's time spent on care work.

In Nigeria, a one-point increase in AGYW's self-perceived support for broader gender equality (measured by the G-NORM scale) increases their odds of deciding both the timing of their marriage (OR: 1.02; SE: 0.002) and whom they marry by 2% each (OR: 1.02; SE: 0.002).[42] In Kenya, a one-point increase in the G-NORM score increases the odds of deciding both the timing of marriage and whom to marry by 1% each (Tables 10 and 11).[43] Additionally, both injunctive norms—what is commonly approved in their community—and descriptive norms—what is commonly done—improve the odds of both behaviors.

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the change in the predicted probability—and thus the prevalence—of AGYW deciding when and whom to marry. The percentage change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would raise the prevalence of AGYW deciding the timing of their marriage by 20.8% and whom to marry by 17.2% in Nigeria. In Kenya, the same increase leads to only a 1% change due to the high baseline prevalence.*

Impact of Key Reference Group Support for Gender Equality

Tables 10 and 11 show results from separate multivariate linear regression models predicting AGYW's ability to decide when and whom to marry based on support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (ages 25+), AGYW peers, and ABYM.

We find a statistically significant positive association between AGYW's marital decision-making ability and support from key reference groups in her community in both Nigeria and Kenya. In Nigeria, normative support from all key reference groups increases the odds of AGYW deciding when and whom to marry. The impact was largest for the community overall and older adults, followed by AGYW peers and ABYM. Specifically, greater support from the full community for broader gender equality (measured by the G-NORM scale) increases an AGYW's ability to decide about their marriage timing and whom to marry by 6% each. These relationships hold even after including AGYW's self-perceived norms in the same models in Nigeria (Tables 10 and 11).

In Kenya, support from AGYW peers for broader gender equality significantly increases an AGYW's ability to decide on the timing of her marriage by 3% (OR: 1.03; SE: 0.017). Support from both AGYW peers and the broader community marginally improves her ability to decide on whom to marry by 4%. However, once self-perceived norms are included in the model, they become the predominant factor (see Tables 10 and 11).

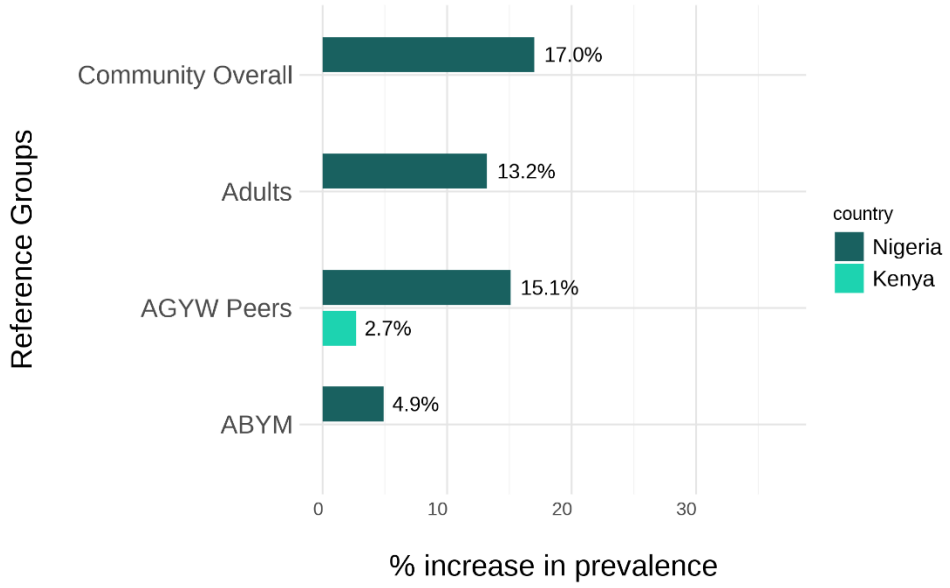
To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in the predicted probability—and thus the prevalence—of AGYW

[42] In Nigeria, a one-point increase in the WEE scale increases the odds of AGYW participating in decisions about both the timing of marriage and whom to marry by 7% each (Tables 10 and 11).
[43] In Kenya, a one-point increase in the WEE scale increases the odds of AGYW participating in decisions about whom to marry by 4% (Tables 10 and 11).

having the agency to decide when and whom to marry. The percentage change from the baseline is shown in Figures 8 and 9. These results highlight how increasing community support for gender equality and women's economic empowerment could lead to significant improvements in AGYW's marital decision-making ability in Nigeria. In Kenya, while norms are strongly associated with AGYW's ability to make marital decisions, the practical impact is smaller due to a larger proportion of AGYW already reporting high agency over their marital decisions (Table 1).

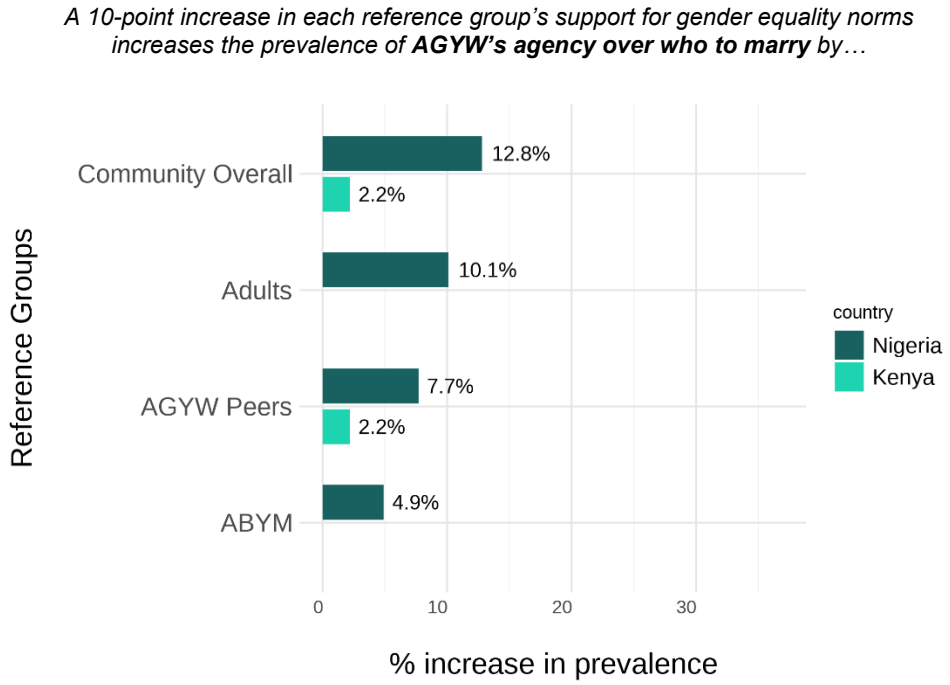
Figure 8: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[44]

*A 10-point increase in each reference group's support for gender equality norms increases the prevalence of **AGYW's agency over when to marry** by…*



[44] In Kenya, the impact of community overall, adults and ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's agency over when to marry.

Figure 9: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[45]



Ideal Age at Marriage

The following paragraphs summarize key results from multivariate linear regression models examining the relationship between community gender norms and an AGYW's desired ideal age at marriage in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Table 12 presents the results of separate multivariate linear regression models predicting AGYW's desired ideal age at marriage based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale).

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their desired ideal age at marriage in both Nigeria and Kenya. In both countries, AGYW who perceive greater community support for gender equality are significantly more likely to desire a higher ideal age at marriage, even after adjusting for socio-demographic factors such as wealth, education, and religion. A one-point increase in AGYW's self-perceived support for positive norms around women's economic empowerment (WEE scale) increases their desired ideal age at marriage by 0.07 years (about 26 days) in Nigeria[46] and by 0.05 years (about 18 days) in Kenya.

[45] In Kenya, the impact of adults and ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's agency over who to marry.
[46] The G-NORM score is also positively associated with ideal age at marriage in Nigeria (β: 0.01; SE: 0.003).

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the change in AGYW's ideal age at marriage. The change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would increase AGYW's desired ideal age at marriage by 8.7 months in Nigeria and 6.1 months in Kenya.*

Impact of Key Reference Group Support for Gender Equality

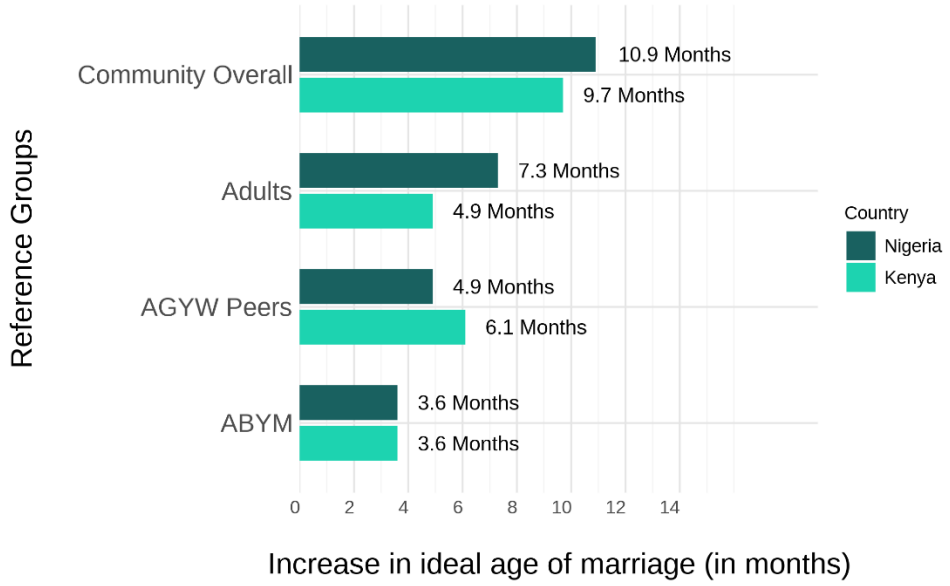
Table 12 presents results from separate multivariate linear regression models that examine the relationship between AGYW's desired ideal age at marriage and support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale). The key reference groups analyzed include the community overall (ages 15–69), older adults (ages 25+), AGYW peers, and ABYM.

We observe a statistically significant positive association between AGYW's desired ideal age at marriage and support from all key reference groups in both Nigeria and Kenya, with the strongest impact from the community overall. For instance, in Nigeria, a one-point increase in support for broader gender equality (as measured by the G-NORM scale) from the community overall corresponds to an increase of 0.09 years (approximately 33 days) in AGYW's desired ideal age at marriage (β: 0.09; SE: 0.015). These relationships persist even when AGYW's self-perceived norms are included in the models. In Kenya, support from the community overall for positive norms around women's work (as measured by the WEE scale) is associated with an increase in the ideal age at marriage by 0.08 years (approximately 29 days). However, these associations are no longer significant when self-perceived norms are included in the models (see Table 12).

To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in AGYW's ideal age at marriage, measured in months. The change from the baseline is summarized in Figure 10. These results highlight how increasing community support for gender equality and women's economic empowerment among key reference groups would lead to substantial increases in AGYW's ideal age at marriage in both countries.

Figure 10: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya

*A 10-point increase in each reference group's support for gender equality norms increases **AGYW's ideal age at marriage** by…*



Behavioral Attributes: Ability and Motivation to Achieve WEE Goals

The following paragraphs summarize key results from multivariate linear regression models examining the relationship between community gender norms and an AGYW's ability and motivation to achieve their WEE aspirations in Nigeria and Kenya.

AGYW's Self-Perceived Level of Community Support for Gender Equality

Tables 13 and 14 present the results of separate multivariate linear regression models examining the association between AGYW's ability and motivation based on their self-perceived level of support for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale).

We find a statistically significant positive relationship between AGYW's self-perceived level of community support for gender equality and their ability and motivation to achieve their WEE aspirations in Nigeria and Kenya. In both countries, AGYWs who perceive greater community support for gender equality have significantly higher motivation and ability, even after adjusting for socio-demographic factors such as wealth, education, and religion.

The magnitude of the impact is larger in Nigeria than in Kenya. In Nigeria, a one-point increase in AGYW's self-perceived support for positive norms around women's economic empowerment (WEE scale) in their community increases their ability score by 0.64 points (β: 0.64; SE: 0.027) and their

motivation score by 0.45 points (β: 0.45; SE: 0.025).[47] In Kenya, the ability score increases by 0.28 points (β: 0.28; SE: 0.029) and the motivation score increases by 0.20 points (β: 0.20; SE: 0.026).[48]

To translate these positive associations into practical implications, we simulated a 10-point increase in AGYW's norms score to estimate the resulting changes in their ability and motivation scores related to pursuing economic empowerment. The change from the baseline is summarized below.

***KEY TAKEAWAY**: A 10-point increase in community support for gender equality would significantly boost AGYWs' ability and motivation to pursue economic aspirations, raising scores by 6.4 and 4.5 points in Nigeria, and 2.8 and 2.0 points in Kenya, respectively.*[49]

Impact of Key Reference Group Support for Gender Equality

Tables 13 and 14 show results from separate multivariate linear regression models examining the association between an AGYW's ability and motivation to achieve their WEE goals and support from key reference groups in their community for broader gender equality (measured by the G-NORM scale) and positive norms around women's economic empowerment (measured by the WEE scale). The key reference groups include the community overall (ages 15–69), older adults (25+), AGYW peers, and ABYM.

We find a statistically significant positive association between AGYW's ability and motivation and support from key reference groups in both Nigeria and Kenya. In Nigeria, normative support from all reference groups increases both ability and motivation scores, with the impact being more substantial for community support. Specifically, greater support from the community overall for broader gender equality (G-NORM scale) boosts the ability score by 0.51 points (β: 0.51; SE: 0.029) and the motivation score by 0.54 points (β: 0.54; SE: 0.064). These relationships remain significant even when self-perceived norms are included in the models (see Tables 13 and 14).

In Kenya, support from AGYW peers significantly positively affects their ability (β: 0.36; SE: 0.02) and has a marginally significant association with motivation (β: 0.14; SE: 0.73). Support from the community overall is marginally significantly associated with AGYW's ability (β: 0.35; SE: 0.2). In combined models that include self-perceived norms, these norms emerge as the most significant factor.

To understand the practical impact, we simulated a 10-point increase in the key reference groups' norms score to estimate changes in AGYW's ability and motivation scores. The change from the baseline is summarized in Figure 10. These results highlight how increasing community support for gender equality and women's economic activities among key reference groups would enhance AGYW's ability and motivation to achieve economic empowerment in both countries.

[47] In Nigeria, one point increase in the G-NORM scale also increases ability score by 0.13 points (β: 0.13; SE: 0.020) and motivation score by 0.12 points (β: 0.12; SE: 0.016).
[48] In Kenya, one point increase in G-NORM also increases motivation score by 0.06 points (β: 0.06; SE: 0.018).
[49] The WEE ability and motivation scores range from 0 to 100.

Figure 11: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[50]

*A 10-point increase in each reference group's support for gender equality norms increases **AGYW's motivation to achieve WEE goals** by…*

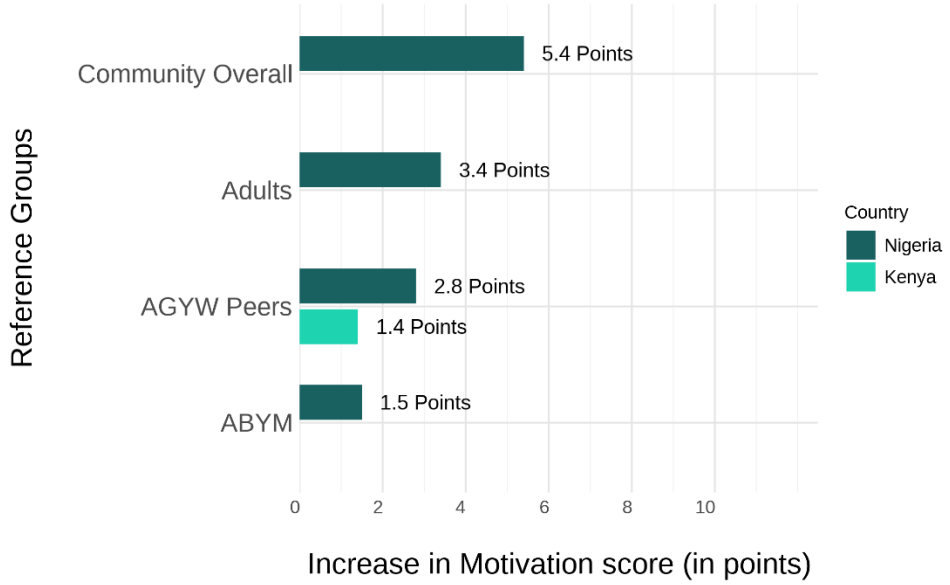
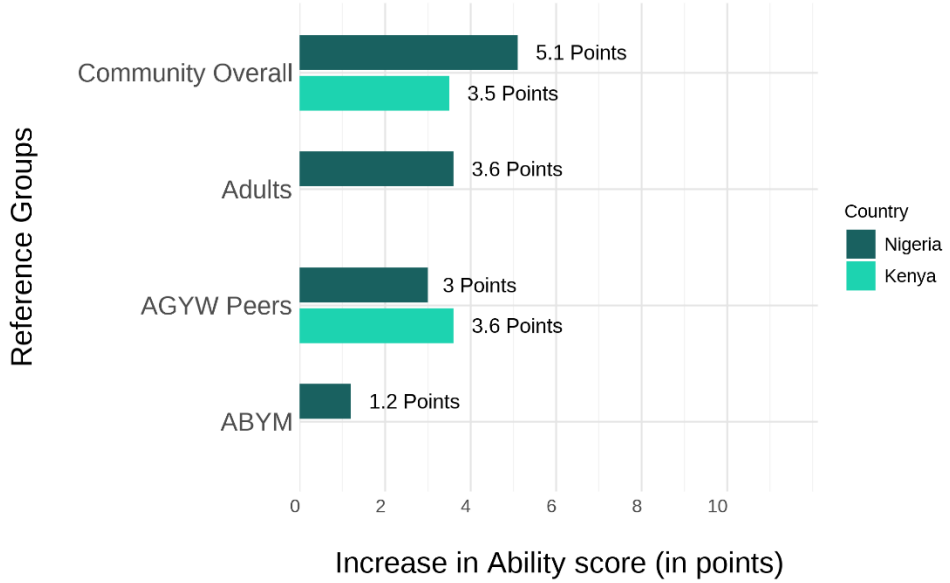


Figure 12: Reference Group's Support for Gender Equality Norms in Nigeria and Kenya[51]

*A 10-point increase in each reference group's support for gender equality norms increases **AGYW's ability to achieve WEE goals** by…*



[50] In Kenya, the impact of community overall, adults and ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's motivation to achieve WEE goals.
[51] In Kenya, the impact of adults and ABYM support for broader gender equality norms did not exhibit a statistically significant relationship with AGYW's ability to achieve WEE goals.

DISCUSSION AND CONCLUSION

Women's economic empowerment (WEE) is critical for addressing gender inequalities; however, achieving it remains challenging due to persistent harmful gender norms. These norms often devalue women's labor force participation and agency, favor early marriage, and confine women to household roles. While once viewed as unmeasurable and immutable, recent evidence suggests otherwise. Nevertheless, the lack of large-scale population data has hindered progress. The Gender Norms Data Engine (GNDE) addresses this gap by providing extensive, population-level data on norms, behaviors and outcomes, including for WEE and agency and aspirations over marriage.

Leveraging the GNDE, we find strong evidence that investing in policies and interventions to transform gender norms and build gender-equitable communities can enhance AGYW's economic empowerment outcomes, including their aspirations and agency over vital life decisions such as marriage timing and aspirations around age at marriage in both countries.

Overall, Nigeria shows a stronger relationship in terms of magnitude. AGYW's direct WEE outcomes—such as participation in the workforce, receiving remuneration for work, having control over their incomes, owning a financial account, time spent on care work—along with their agency over when and whom to marry and aspirations for marrying at an older age, are closely associated with supportive community norms. Both AGYW's self-perceived support and support from key reference groups play important roles, with the backing of the broader community and older adults being more influential.

In Kenya, while most outcomes are linked to community support, the strength of these associations is generally weaker, especially for marital agency over when and whom to marry. This limited effect may stem from the high prevalence of reported agency among AGYW in Kenya, where many indicate having significant decision-making power regarding when and whom to marry. In Kenya, AGYW's self-perceived support is particularly significant. Notably, while AGYW peers impact some outcomes, such as time spent on care work and ownership of financial accounts, the most substantial influence comes from self-perceived support.

Our findings also suggest that norms influence ability and motivation to achieve WEE goals and aspiration among AGYW in both countries. In more supportive environments, AGYW report higher levels of both ability and motivation to achieve their WEE aspirations and goals, indicating potential indirect effects of norms on behaviors through ability and motivation.

In summary, our findings underscore the crucial role that community normative support for gender equality can play in enhancing the economic empowerment, life aspirations, and agency of AGYW in both Kenya and Nigeria. Two key insights emerge: (1) targeting the entire community can be most effective, as it can enhance both AGYW's self-perceived support and reinforces it through backing from key reference groups, and (2) community normative support has the potential to create a cascading effect, positively impacting multiple outcomes for AGYW. Therefore, improving community support for gender equality broadly, and WEE in particular, by leveraging scalable gender-transformative approaches—such as mass media campaigns combined with opportunities for community engagement, dialogue, and reflection—can be a powerful and cost-effective means of creating widespread change. Given that many interventions primarily focus on economic

opportunities and livelihood programs, it is essential to adopt a dual approach that integrates both normative change and empowerment strategies. Moreover, aligning these gender transformative norms shifting strategies with programs and policies that address barriers to economic empowerment will enhance success by fostering a supportive environment. Ultimately, these efforts could lead to substantial improvements in AGYW's lives by nurturing their aspirations and expanding opportunities for economic empowerment.

VI. APPENDIX

Table A: Survey Sample Characteristics, Weighted and Unweighted (Kenya)[52]

	Weighted Proportion	Unweighted Count	Unweighted Proportion
Gender			
Male	50.5%	1,945	30.9%
Female	49.5%	4,345	69.1%
Age			
15-24	12.0%	1,092	17.4%
25-34	23.2%	2,271	36.1%
35-44	23.9%	1,128	17.9%
45-54	20.1%	920	14.6%
55-69	11.7%	514	8.2%
Socioeconomic Status			
Low SES	37.4%	2,007	31.9%
Medium SES	30.2%	1,995	31.7%
High SES	32.3%	2,288	36.4%
Education			
No formal education	9.3%	352	5.6%
Incomplete primary	17.2%	1,057	16.8%
Complete primary	20.1%	1,234	19.6%
Incomplete secondary	14.5%	1,253	19.9%
Complete secondary	21.5%	1,337	21.3%
Higher Education	17.6%	1,057	16.8%
Urban[54]			
Urban	37.1%	2,318	36.9%
Rural	62.8%	3,971	63.1%

[52] Females were intentionally oversampled respective to their proportional share of the total population for data production and research analysis purposes. The associated unweighted figures should be interpreted accordingly.
[53] Fraym defines socioeconomic status through an asset ownership approach based on the 2022 DHS, selecting the two assets which best tracked DHS national wealth index trends. In Kenya, respondents who have neither a bank account nor television are considered Low SES. Respondents who have only one of the two assets are considered Medium SES and respondents who own both assets are considered High SES.
[54] The unweighted count does not sum to the total number of observations due to three respondents reporting “Don’t Know” or “Refused” for this question.

Province			
Central	12.7%	736	11.7%
Coast	9.2%	595	9.5%
Eastern	14.4%	940	14.9%
Nairobi	11.5%	695	11.0%
Northeastern	4.1%	226	3.6%
Nyanza	12.5%	773	12.3%
Rift Valley	25.9%	1,663	26.4%
Western	9.7%	662	10.5%
Total	-	**6,290**	-

Table B: Survey Sample Characteristics, Weighted and Unweighted (Nigeria)[55]

	Weighted Proportion	Unweighted Count	Unweighted Proportion
Gender			
Male	51.3%	3,244	31.8%
Female	48.7%	6,971	68.2%
Age			
15-24	12.0%	1,776	17.4%
25-34	23.9%	3,808	37.3%
35-44	25.1%	1,821	17.8%
45-54	18.2%	1,333	13.0%
55-69	11.6%	822	8.0%
Socioeconomic Status			
Low SES	34.9%	4,639	45.4%
Medium SES	23.3%	2,479	24.3%
High SES	41.8%	3,097	30.3%
Education			
No formal education	26.5%	2,477	24.2%
Incomplete primary	3.0%	345	3.4%
Complete primary	14.1%	1,412	13.8%
Incomplete secondary	9.0%	1,417	13.9%
Complete secondary	30.2%	2,990	29.3%
Higher Education	17.1%	1,574	15.4%
Urban[57]			
Urban	33.3%	3,052	29.9%
Rural	66.6%	7,159	70.1%

[55] Females were intentionally oversampled respective to their proportional share of the total population for data production and research analysis purposes. The associated unweighted figures should be interpreted accordingly.
[56] Fraym defines socioeconomic status through an asset ownership approach based on the 2018 DHS, selecting the two assets which best tracked DHS national wealth index trends. In Nigeria, respondents who have neither a bank account nor television are considered Low SES. Respondents who have only one of the two assets are considered Medium SES and respondents who own both assets are considered High SES.
[57] The unweighted count does not sum to the total number of observations due to three respondents reporting “Don’t Know” or “Refused” for this question.

Zone			
North Central	14.9%	1,505	14.7%
North East	12.4%	1,321	12.9%
North West	22.6%	2,316	22.7%
South East	12.0%	1,166	11.4%
South South	15.8%	1,634	16.0%
South West	22.2%	2,273	22.3%
Total	**-**	**10,215**	**-**

Table C: Final G-NORM Scale for Nigeria and Kenya

Norms Item	Nigeria	Kenya
Descriptive		
There are times when a husband beats (hits) his wife.		
Taking care of children is only the woman's job.	✓	✓
Husbands make the decision about buying major household items.	✓	✓
Only men are the ones who earn money for the family.	✓	✓
Women eat last, after all the family members have eaten.		
Women eat whatever is left over after all the rest of their family has finished eating.		
Women obey their husbands in all matters.	✓	
Women ask permission from their husbands to get medical treatment of any kind.	✓	
Only men make decisions about household income and expenses.	✓	✓
Injunctive		
Women should be beaten in certain circumstances.		
It should only be a woman's job to take care of the children.	✓	✓
Husbands should make the decision about buying major household items.	✓	✓
Men should be the only ones who earn money for the family.	✓	✓
Women should eat last, after all the family members have eaten.		
Women should eat whatever is left over after the rest of their family has eaten.		
Women should obey their husbands in all matters.	✓	
Women should ask permission from their husbands to get medical treatment of any kind.	✓	
Only men should be responsible for household income and expenses.	✓	✓
Cronbach's Alpha		
Overall Scale	84.37	78.56
Descriptive Norms Sub-Scale	71.40	61.03
Injunctive Norms Sub-Scale	72.85	72.02

Table D: Final WEE Scale for Nigeria and Kenya

Norms Item	Nigeria	Kenya
Descriptive		
Women earn their own income	✓	✓
Women have their own savings.	✓	✓
A married woman has the same rights to work outside the home as her husband.	✓	✓
Boys are more likely to complete higher education as compared to girls.		✓
Adolescent girls and young women obey their parents over decisions regarding marriage.	✓	
Adolescent girls and young women remain virgins until they marry.	✓	
Parents marry their daughter before she turns 20.	✓	✓
Injunctive		
Women should earn their own income.	✓	✓
Women should have their own savings.	✓	✓
A married woman should have the same rights to work outside the home as her husband.	✓	✓
Pursuing higher education is more important for a boy than for a girl.		✓
Adolescent girls and young women should obey their parents over decisions regarding marriage.	✓	
Adolescent girls and young women should remain virgins until they marry.	✓	
Parents should marry their daughters before they turn 20.	✓	
Sanctions		
People in your community think it is shameful or embarrassing for a man to do caregiving or domestic work.		
A married woman who works outside the home will be criticized for neglecting her role as a wife and mother.		✓
Having sex as a teen will bring disgrace and shame to a young woman and her family.	✓	
If a girl refuses a marriage before she turns 18, most people in your community will say she is doing the right thing for her future.	✓	
Cronbach's Alpha		
Overall Scale	72.06	74.50

Table 1: Descriptive Statistics of Key Outcomes amongst AGYW [58]

	Nigeria (n = 4,692)	Kenya (n = 2,882)
	Percentage / Mean (SD)	**Percentage / Mean (SD)**
WEE Behaviors		
Working[59]	45.5%	37.9%
Paid work[57]	38.6%	31.4%
Control over Income[57]	29.2%	29.2%
Own a financial account	35.7%	50.4%
Time Use – Care Work (in minutes)	220.1 (2.17 hrs)	224.6 (3.61 hrs)
CEFM Behaviors		
Agency over when to marry	66.8%	91.1%
Agency over who to marry	73.6%	93.1%
Ideal Age of Marriage (in years)	24.5 (0.06)	25.4 (0.08)
Behavioral Attributes		
Motivation score	56.9 (0.30)	61.9 (0.33)
Ability Score	54.3 (0.36)	58.7 (0.46)

[58] Scores are reported in terms of mean (M) and standard deviation (SD); other variables are reported in terms of percentages. Estimates were adjusted for survey weights.
[59] Sample excludes AGYW who are currently students. Sample size excluding students: Kenya = 1769, Nigeria = 3467.

Table 2: Descriptive Statistics of G-NORM Scores among AGYW [58]

	Nigeria (n = 4,692)	Kenya (n = 2,882)
	Mean (SD)	**Mean (SD)**
Self-Perceived Score		
Overall score	43.4 (0.33)	51.9 (0.46)
Descriptive norms score	43.4 (0.33)	52.1 (0.48)
Injunctive norms score	43.5 (0.34)	51.5 (0.48)
Reference Group Scores		
Full population (15 – 69)		
Overall score	44.1 (0.08)	53.5 (0.14)
Descriptive norms score	43.9 (0.08)	53.4 (0.13)
Injunctive norms score	44.3 (0.08)	53.5 (0.15)
Adults (25 – 69)		
Overall score	44.5 (0.09)	54.6 (0.14)
Descriptive norms score	44.5 (0.09)	54.3 (0.14)
Injunctive norms score	44.7 (0.09)	54.9 (0.14)
AGYW (15 – 24 females)		
Overall score	43.4 (0.09)	52 (0.15)
Descriptive norms score	43.3 (0.10)	52.2 (0.16)
Injunctive norms score	43.4 (0.09)	51.7 (0.14)
ABYM (15 – 24 males)		
Overall score	43.2 (0.12)	54.9 (0.15)
Descriptive norms score	43.4 (0.12)	54.6 (0.15)
Injunctive norms score	43.5 (0.12)	55.1 (0.16)

Table 3: Descriptive Statistics of WEE Scores among AGYW and their Reference Groups[58]

	Nigeria (n = 4,692)	Kenya (n = 2,882)
	Mean (SD)	**Mean (SD)**
Self-Perceived Score		
WEE Score	59.6 (0.22)	69.5 (0.35)
Reference Group		
Full population (15 – 69)	59.7 (0.08)	69.2 (0.09)
Adults (25 – 69)	60.1 (0.08)	69.5 (0.13)
AGYW (15 – 24 females)	59.3 (0.11)	69.4 (0.1)
ABYM (15 – 24 males)	57.5 (0.12)	69.6 (0.08)

Table 4: Descriptive Statistics of Socio-Economic Characteristics among AGYW [58]

	Nigeria (n = 4,692)	Kenya (n = 2,882)
	Percentage / Mean (SD)	**Percentage / Mean (SD)**
Age	19.4 (0.05)	19.9 (0.07)
Urban	54.4%	23.0%
Religion		
Christianity	58.2%	87.2%
Others	41.8%	12.8%
Schooling		
None	31.5%	16.6%
Primary	24.8%	41.0%
Secondary	36.6%	30.3%
Higher	7.1%	12.1%
Wealth		
High	30.3%	19.9%
Middle	42.8%	28.3%
Low	26.9%	51.7%

Table 5: Multivariate Regression Results on the Impact of Gender Norms on Employment among AGYW [60]

	Nigeria (n = 4,692) [61]		Kenya (n = 2,882) [61]
	G-NORM	WEE	G-NORM
	Odds Ratio (SE) [62]	Odds Ratio (SE) [62]	Odds Ratio (SE) [62]
Self-Perceived Normative Support			
Model 1: AGYW Overall Norms Score		1.01 (0.003) ***	1.01 (0.003) **
Model 1.1: AGYW Descriptive Norms Score			1.01 (0.003) **
Model 1.2: AGYW Injunctive Norms Score			1.01 (0.003) *
Reference Group Normative Support [63]			
Model 2: Community Overall			
Overall Norms Score	1.03 (0.01) **	1.03 (0.009) **	
Model 3: Adults			
Overall Norms Score	1.03 (0.008) **	1.03 (0.009) ***	
Model 4: AGYW Peers			
Overall Norms Score		1.02 (0.007) **	
Model 5: ABYM			
Overall Norms Score	1.02 (0.006) **	1.02 (0.006) **	
Combined Models: Reference Groups & AGYW's Self-Perceived Support			
Model 6: Community Overall & AGYW Self			
Community Overall Norms Score	1.03 (0.01) **	1.03 (0.009) **	
AGYW's Self-Perceived Norms Score			1.01 (0.003) **
Model 7: Adults & AGYW Self			
Adults Overall Norms Score	1.03 (0.008) **	1.03 (0.009) **	
AGYW Self-Perceived Norms Score			1.01 (0.003) **
Model 8: AGYW Peers & AGYW Self			
AGYW Peers Overall Norms Score	1.02 (0.008) **	1.02 (0.007) **	
AGYW Self-Perceived Norms Score			1.01 (0.003) **
Model 9: ABYM & AGYW Self			
ABYM Overall Norms Score	1.02 (0.006) **	1.02 (0.006) **	
AGYW Self-Perceived Norms Score			1.01 (0.003) **

[60] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. For Kenya, no models were significant for the WEE scale.
[61] Sample excludes AGYW currently enrolled in school.
[62] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[63] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 6: Multivariate Regression Results on the Impact of Gender Norms on Receiving Remuneration among AGYW [64]

	Nigeria (n = 4,692) [65]		Kenya (n = 2,882) [65]
	G-NORM	WEE	G-NORM
	Odds Ratio (SE) [66]	Odds Ratio (SE) [66]	Odds Ratio (SE) [66]
Self-Perceived Normative Support			
Model 1: AGYW Overall Norms Score		1.01 (0.003) **	1.01 (0.003) **
Model 1.1: AGYW Descriptive Norms Score			1.01 (0.003) **
Model 1.2: AGYW Injunctive Norms Score			1.01 (0.003) **
Reference Group Normative Support [67]			
Model 2: Community Overall			
Overall Norms Score	1.03 (0.01) **	1.04 (0.009) ***	
Model 3: Adults			
Overall Norms Score	1.03 (0.009) **	1.04 (0.009) ***	
Model 4: AGYW Peers			
Overall Norms Score	1.02 (0.008) **	1.03 (0.008) ***	
Model 5: ABYM			
Overall Norms Score	1.02 (0.006) **	1.03 (0.007) ***	
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly			
Model 6: Community Overall & AGYW Self			
Community Overall Norms Score	1.03 (0.01) **	1.03 (0.01) **	
AGYW's Self-Perceived Norms Score			1.01 (0.003) **
Model 7: Adults & AGYW Self			
Adults Overall Norms Score	1.03 (0.009) ***	1.03 (0.01) **	
AGYW Self-Perceived Norms Score			1.01 (0.003) **
Model 8: AGYW Peers & AGYW Self			
AGYW Peers Overall Norms Score	1.03 (0.008) **	1.03 (0.008) ***	
AGYW Self-Perceived Norms Score			1.01 (0.003) **
Model 9: ABYM & AGYW Self			
ABYM Overall Norms Score	1.02 (0.006) **	1.02 (0.007) ***	
AGYW Self-Perceived Norms Score		1.01 (0.004) *	1.01 (0.003) **

[64] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. For Kenya, no models were significant for the WEE scale.
[65] Sample excludes AGYW currently enrolled in school.
[66] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$
[67] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 7: Multivariate Regression Results on the Impact of Gender Norms on Control over Income among AGYW [68]

	Nigeria (n = 4,692) [69]		Kenya (n = 2,882) [69]	
	G-NORM	WEE	G-NORM	WEE
	Odds Ratio (SE) [70]	Odds Ratio (SE) [70]	Odds Ratio (SE) [70]	Odds Ratio (SE) [70]
Self-Perceived Normative Support				
Model 1: AGYW Overall Norms Score		1.02 (0.004) ***	1.01 (0.003) **	
Model 1.1: AGYW Descriptive Norms Score			1.01 (0.003) *	
Model 1.2: AGYW Injunctive Norms Score			1.01 (0.003) **	
Reference Group Normative Support [71]				
Model 2: Community Overall				
Overall Norms Score	1.04 (0.011) ***	1.05 (0.01) ***		
Model 3: Adults				
Overall Norms Score	1.04 (0.009) ***	1.04 (0.01) ***		
Model 4: AGYW Peers				
Overall Norms Score	1.02 (0.009) **	1.04 (0.011) ***		
Model 5: ABYM				
Overall Norms Score		1.01 (0.007) **		
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly				
Model 6: Community Overall & AGYW Self				
Community Overall Norms Score	1.05 (0.011) ***	1.03 (0.011) **		
AGYW's Self-Perceived Norms Score		1.02 (0.004) ***	1.01 (0.003) **	
Model 7: Adults & AGYW Self				
Adults Overall Norms Score	1.04 (0.009) ***	1.03 (0.01) **		
AGYW Self-Perceived Norms Score		1.02 (0.004) ***	1.01 (0.003) **	
Model 8: AGYW Peers & AGYW Self				
AGYW Peers Overall Norms Score	1.02 (0.009) **	1.02 (0.009) **		
AGYW Self-Perceived Norms Score		1.02 (0.004) ***	1.01 (0.003) **	1.01 (0.005) *
Model 9: ABYM & AGYW Self				
ABYM Overall Norms Score				
AGYW Self-Perceived Norms Score		1.02 (0.004) ***	1.01 (0.003) **	

[68] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. For Kenya, no models were significant for the WEE scale.
[69] Sample excludes AGYW currently enrolled in school.
[70] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[71] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 8: Multivariate Regression Results on the Impact of Gender Norms on Ownership of Financial Accounts among AGYW [72]

	Nigeria (n = 4,692)		Kenya (n = 2,882)
	G-NORM	WEE	WEE
	Odds Ratio (SE) [73]	Odds Ratio (SE) [73]	Odds Ratio (SE) [73]
Self-Perceived Normative Support			
Model 1: AGYW Overall Norms Score	1.01 (0.002) **	1.01 (0.004) **	1.01 (0.004) *
Model 1.1: AGYW Descriptive Norms Score	1.01 (0.002) **		
Model 1.2: AGYW Injunctive Norms Score	1.01 (0.002) **		
Reference Group Normative Support [74]			
Model 2: Community Overall			
Overall Norms Score	1.03 (0.01) **	1.03 (0.009) ***	
Model 3: Adults			
Overall Norms Score	1.03 (0.009) ***	1.03 (0.009) **	
Model 4: AGYW Peers			
Overall Norms Score	1.01 (0.008) *	1.02 (0.008) **	1.03 (0.017) *
Model 5: ABYM			
Overall Norms Score		1.01 (0.007) **	
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly			
Model 6: Community Overall & AGYW Self			
Community Overall Norms Score	1.03 (0.01) **	1.03 (0.01) **	
AGYW's Self-Perceived Norms Score	1.01 (0.002) **		1.01 (0.004) *
Model 7: Adults & AGYW Self			
Adults Overall Norms Score	1.03 (0.009) **	1.03 (0.01) **	
AGYW Self-Perceived Norms Score	1.01 (0.002) **	1.01 (0.004) *	1.01 (0.004) *
Model 8: AGYW Peers & AGYW Self			
AGYW Peers Overall Norms Score		1.02 (0.008) **	
AGYW Self-Perceived Norms Score	1.01 (0.002) **	1.01 (0.004) *	
Model 9: ABYM & AGYW Self			
ABYM Overall Norms Score		1.01 (0.006) *	
AGYW Self-Perceived Norms Score	1.01 (0.002) **	1.01 (0.004) **	1.01 (0.004) *

[72] Models examined the association between AGYW's ownership of at least one financial account (mobile money account, bank account or informal savings account) and community gender norms. Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. Only models with significant results are listed. For Kenya, no models were significant for the G-NORM scale.

[73] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.

[74] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 9: Multivariate Regression Results on the Impact of Gender Norms on AGYW's Time Spent on Care work (in minutes) [75]

	Nigeria (n = 4,692)		Kenya (n = 2,882)	
	G-NORM	WEE	G-NORM	WEE
	Coefficient (SE) [76]	Coefficient (SE) [76]	Coefficient (SE) [76]	Coefficient (SE) [76]
Self-Perceived Normative Support				
Model 1: AGYW Overall Norms Score	-0.54 (0.12) ***	-0.85 (0.167) ***	-0.33 (0.147) **	-1.32 (0.214) ***
Model 1.1: AGYW Descriptive Norms Score	-0.54 (0.12) ***		-0.35 (0.153) **	
Model 1.2: AGYW Injunctive Norms Score	-0.51 (0.118) ***		-0.28 (0.138) **	
Reference Group Normative Support [77]				
Model 2: Community Overall				
Overall Norms Score	-1.19 (0.482) **	-1.09 (0.41) **		-2.7 (1.452) *
Model 3: Adults				
Overall Norms Score	-1.2 (0.404) **	-0.98 (0.41) **		-1.5 (0.881) *
Model 4: AGYW Peers				
Overall Norms Score		-0.47 (0.279) *		-2.46 (0.981) **
Model 5: ABYM				
Overall Norms Score				
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly				
Model 6: Community Overall & AGYW Self				
Community Overall Norms Score	-0.81 (0.490) *			
AGYW's Self-Perceived Norms Score	-0.52 (0.124) ***	-0.83 (0.178) ***	-0.36 (0.153) **	-1.37 (0.219) ***
Model 7: Adults & AGYW Self				
Adults Overall Norms Score	-1.00 (0.407) **			
AGYW Self-Perceived Norms Score	-0.52 (0.123) ***	-0.83 (0.173) ***	-0.38 (0.151) **	-1.39 (0.221) ***
Model 8: AGYW Peers & AGYW Self				
AGYW Peers Overall Norms Score				
AGYW Self-Perceived Norms Score	-0.55 (0.125) ***	-0.87 (0.172) ***	-0.37 (0.155) **	-1.36 (0.224) ***
Model 9: ABYM & AGYW Self				
ABYM Overall Norms Score				
AGYW Self-Perceived Norms Score	-0.55 (0.122) ***	-0.86 (0.169) ***	-0.38 (0.150) **	-1.4 (0.22) ***

[75] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights.
[76] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[77] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 10: Multivariate Regression Results on the Impact of Gender Norms on Agency on When to Marry among AGYW [78]

	Nigeria (n = 4,692)		Kenya (n = 2,882)
	G-NORM	WEE	G-NORM
	Odds Ratio (SE) [79]	Odds Ratio (SE) [79]	Odds Ratio (SE) [79]
Self-Perceived Normative Support			
Model 1: AGYW Overall Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **
Model 1.1: AGYW Descriptive Norms Score	1.02 (0.002) ***		1.01 (0.004) **
Model 1.2: AGYW Injunctive Norms Score	1.02 (0.002) ***		1.01 (0.003) **
Reference Group Normative Support [80]			
Model 2: Community Overall			
Overall Norms Score	1.06 (0.009) ***	1.05 (0.008) ***	
Model 3: Adults			
Overall Norms Score	1.04 (0.008) ***	1.05 (0.008) ***	
Model 4: AGYW Peers			
Overall Norms Score	1.05 (0.007) ***	1.04 (0.006) ***	1.03 (0.017) **
Model 5: ABYM			
Overall Norms Score	1.02 (0.006) **	1.02 (0.005) ***	
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly			
Model 6: Community Overall & AGYW Self			
Community Overall Norms Score	1.04 (0.008) ***		
AGYW's Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **
Model 7: Adults & AGYW Self			
Adults Overall Norms Score	1.03 (0.007) ***		
AGYW Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **
Model 8: AGYW Peers & AGYW Self			
AGYW Peers Overall Norms Score	1.01 (0.006) **	1.01 (0.007) *	
AGYW Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **
Model 9: ABYM & AGYW Self			
ABYM Overall Norms Score			
AGYW Self-Perceived Norms Score	1.12 (0.056) **	1.07 (0.004) ***	1.01 (0.004) **

[78] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. Only models with significant results are listed. For Kenya, no models were significant for the WEE scale.
[79] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[80] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 11: Multivariate Regression Results on the Impact of Gender Norms on Agency on Who to Marry among AGYW [81]

	Nigeria (n = 4,692)		Kenya (n = 2,882)	
	G-NORM	WEE	G-NORM	WEE
	Odds Ratio (SE) [82]	Odds Ratio (SE) [82]	Odds Ratio (SE) [82]	Odds Ratio (SE) [82]
Self-Perceived Normative Support				
Model 1: AGYW Overall Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **	1.04 (0.006) ***
Model 1.1: AGYW Descriptive Norms Score	1.02 (0.002) ***		1.01 (0.005) **	
Model 1.2: AGYW Injunctive Norms Score	1.02 (0.002) ***		1.01 (0.004) **	
Reference Group Normative Support [83]				
Model 2: Community Overall				
Overall Norms Score	1.06 (0.01) ***	1.06 (0.009) ***	1.04 (0.021) *	
Model 3: Adults				
Overall Norms Score	1.04 (0.008) ***	1.06 (0.009) ***		
Model 4: AGYW Peers				
Overall Norms Score	1.03 (0.008) ***	1.03 (0.007) ***	1.04 (0.02) *	
Model 5: ABYM				
Overall Norms Score		1.02 (0.006) **		
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly				
Model 6: Community Overall & AGYW Self				
Community Overall Norms Score	1.04 (0.01) ***			
AGYW's Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **	1.04 (0.006) ***
Model 7: Adults & AGYW Self				
Adults Overall Norms Score	1.03 (0.008) ***	1.02 (0.009) *		
AGYW Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **	1.04 (0.006) ***
Model 8: AGYW Peers & AGYW Self				
AGYW Peers Overall Norms Score	1.01 (0.008) *			
AGYW Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **	1.04 (0.007) ***
Model 9: ABYM & AGYW Self				
ABYM Overall Norms Score				
AGYW Self-Perceived Norms Score	1.02 (0.002) ***	1.07 (0.004) ***	1.01 (0.004) **	1.04 (0.006) ***

[81] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights.
[82] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[83] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 12: Multivariate Regression Results on the Impact of Gender Norms on AGYW's Ideal Age of Marriage (in years) [84]

	Nigeria (n = 4,692)		Kenya (n = 2,882)	
	G-NORM	WEE	G-NORM	WEE
	Coefficient (SE) [85]	Coefficient (SE) [85]	Coefficient (SE) [85]	Coefficient (SE) [85]
Self-Perceived Normative Support				
Model 1: AGYW Overall Norms Score	0.01 (0.003) ***	0.07 (0.004) ***		0.05 (0.005) ***
Model 1.1: AGYW Descriptive Norms Score	0.01 (0.003) ***			
Model 1.2: AGYW Injunctive Norms Score	0.01 (0.003) ***			
Reference Group Normative Support [86]				
Model 2: Community Overall				
Overall Norms Score	0.09 (0.015) ***	0.1 (0.013) ***		0.08 (0.03) **
Model 3: Adults				
Overall Norms Score	0.06 (0.012) ***	0.08 (0.014) ***		0.04 (0.021) *
Model 4: AGYW Peers				
Overall Norms Score	0.04 (0.011) ***	0.05 (0.011) ***		0.05 (0.022) **
Model 5: ABYM				
Overall Norms Score		0.03 (0.009) ***		0.03 (0.021) *
Combined Model: Reference Groups & AGYW Self-Perceived Support, jointly				
Model 6: Community Overall & AGYW Self				
Community Overall Norms Score	0.08 (0.015) ***	0.05 (0.014) ***		
AGYW's Self-Perceived Norms Score	0.01 (0.003) **	0.07 (0.004) ***	0.01 (0.004) *	0.05 (0.005) ***
Model 7: Adults & AGYW Self				
Adults Overall Norms Score	0.05 (0.012) ***	0.04 (0.014) **		
AGYW Self-Perceived Norms Score	0.01 (0.003) ***	0.07 (0.004) ***	0.01 (0.004) **	0.05 (0.005) ***
Model 8: AGYW Peers & AGYW Self				
AGYW Peers Overall Norms Score	0.03 (0.011) **	0.02 (0.009) **		
AGYW Self-Perceived Norms Score	0.01 (0.003) **	0.07 (0.004) ***	0.01 (0.004) *	0.05 (0.005) ***
Model 9: ABYM & AGYW Self				
ABYM Overall Norms Score				
AGYW Self-Perceived Norms Score	0.01 (0.003) ***	0.07 (0.004) ***	0.01 (0.004) **	0.05 (0.005) ***

[84] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights.
[85] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[86] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

Table 13: Multivariate Regression Results on the Impact of Gender Norms AGYW's Ability Score (0 – 100) [89]

	Nigeria (n = 4,692)		Kenya (n = 2,882)
	G-NORM	WEE	WEE
	Coefficient (SE) [87]	Coefficient (SE) [87]	Coefficient (SE) [87]
Self-Perceived Normative Support			
Model 1: AGYW Overall Norms Score	0.13 (0.02) ***	0.64 (0.027) ***	0.28 (0.029) ***
Model 1.1: AGYW Descriptive Norms Score	0.13 (0.02) ***		
Model 1.2: AGYW Injunctive Norms Score	0.12 (0.019) ***		
Reference Group Normative Support [88]			
Model 2: Community Overall			
Overall Norms Score	0.51 (0.082) ***	0.59 (0.074) ***	0.35 (0.2) *
Model 3: Adults			
Overall Norms Score	0.36 (0.07) ***	0.48 (0.074) ***	
Model 4: AGYW Peers			
Overall Norms Score	0.3 (0.067) ***	0.37 (0.063) ***	0.36 (0.151) **
Model 5: ABYM			
Overall Norms Score	0.12 (0.047) **	0.2 (0.05) ***	
Combined Models: Reference Groups & AGYW Self-Perceived Support, jointly			
Model 6: Community Overall & AGYW Self			
Community Overall Norms Score	0.42 (0.082) ***		
AGYW's Self-Perceived Norms Score	0.12 (0.02) ***	0.63 (0.028) ***	0.27 (0.029) ***
Model 7: Adults & AGYW Self			
Adults Overall Norms Score	0.32 (0.069) ***		
AGYW Self-Perceived Norms Score	0.12 (0.02) ***	0.64 (0.027) ***	0.27 (0.029) ***
Model 8: AGYW Peers & AGYW Self			
AGYW Peers Overall Norms Score	0.2 (0.067) **		
AGYW Self-Perceived Norms Score	0.12 (0.02) ***	0.63 (0.028) ***	0.27 (0.029) ***
Model 9: ABYM & AGYW Self			
ABYM Overall Norms Score	0.11 (0.047) **		
AGYW Self-Perceived Norms Score	0.13 (0.02) ***	0.64 (0.027) ***	0.28 (0.029) ***

[87] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.

[88] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.

[89] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights. Only models with significant results are listed. For Kenya, no models were significant for the G-NORM scale.

Table 14: Multivariate Regression Results on the Impact of Gender Norms AGYW's Motivation Score (0 – 100) [90]

	Nigeria (n = 4,692)		Kenya (n = 2,882)	
	G-NORM	WEE	G-NORM	WEE
	Coefficient (SE) [91]	Coefficient (SE) [91]	Coefficient (SE) [91]	Coefficient (SE) [91]
Self-Perceived Normative Support				
Model 1: AGYW Overall Norms Score	0.12 (0.016) ***	0.45 (0.025) ***	0.06 (0.018) **	0.2 (0.026) ***
Model 1.1: AGYW Descriptive Norms Score	0.12 (0.016) ***		0.07 (0.018) ***	
Model 1.2: AGYW Injunctive Norms Score	0.12 (0.016) ***		0.04 (0.017) **	
Reference Group Normative Support [92]				
Model 2: Community Overall				
Overall Norms Score	0.54 (0.064) ***	0.53 (0.058) ***		
Model 3: Adults				
Overall Norms Score	0.34 (0.055) ***	0.4 (0.06) ***		
Model 4: AGYW Peers				
Overall Norms Score	0.28 (0.051) ***	0.28 (0.047) ***	0.14 (0.078) *	
Model 5: ABYM				
Overall Norms Score	0.15 (0.034) ***	0.23 (0.037) ***		
Reference Groups & AGYW Self Normative Support, jointly				
Model 6: Community Overall & AGYW Self				
Community Overall Norms Score	0.46 (0.063) ***	0.19 (0.057) **		
AGYW's Self-Perceived Norms Score	0.11 (0.016) ***	0.43 (0.026) ***	0.06 (0.019) **	0.2 (0.026) ***
Model 7: Adults & AGYW Self				
Adults Overall Norms Score	0.29 (0.055) ***	0.12 (0.056) **		
AGYW Self-Perceived Norms Score	0.11 (0.016) ***	0.44 (0.025) ***	0.06 (0.019) **	0.19 (0.026) ***
Model 8: AGYW Peers & AGYW Self				
AGYW Peers Overall Norms Score	0.19 (0.05) ***	0.07 (0.038) *		
AGYW Self-Perceived Norms Score	0.11 (0.017) ***	0.44 (0.025) ***	0.05 (0.019) **	0.2 (0.027) ***
Model 9: ABYM & AGYW Self				
ABYM Overall Norms Score	0.03 (3.88) *	0.1 (0.033) **		
AGYW Self-Perceived Norms Score	0.12 (0.016) ***	0.44 (0.025) ***	0.06 (0.019) **	0.19 (0.026) ***

[90] Separate models were implemented with the G-NORM scale and the WEE scale. All models were adjusted for key socio-demographic covariates such as age, urbanicity, religion, education, and wealth, and were weighted using survey weights.
[91] Standard errors are in parentheses. Only significant results are reported, with the level of significance indicated by *** for $p < 0.001$, ** for $p < 0.05$, and * for $p < 0.10$.
[92] Reference groups are defined as people living in AGYW's third administrative division (ADM3): Wards in Kenya and Nigeria. Reference groups included: a) Community Overall (ages 15-69), b) Adults (ages 25-69), c) AGYW (females aged 15-24), and d) Adolescent Boys and Young Men (ABYM) (males aged 15-24). Due to differences in administrative divisions reported in the survey and official list of ADM3 in each country, sample sizes for models with reference groups are Kenya = 2,869 and Nigeria = 4,669.