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Unpaid Care Work Reduction Strategies and Women's Economic Empowerment Under UN Women 3R (Recognize, Reduce, Redistribute) Programme

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Abstract: *This study examined the effect of the Recognize and Reduce strategies of the UN Women Recognize, Reduce and Redistribute (3R) Programme on women's economic empowerment in Rwanda. A descriptive correlational, cross-sectional design was applied in districts where the programme operates. The target population was 307 beneficiaries and programme stakeholders; Yamane's formula gave a sample of 174, drawn through proportionate stratified random sampling and purposive selection of key informants, and 168 valid questionnaires were returned (96.55%). Structured Likert questionnaires, interview guides, observation checklists and document review supplied the data, which were analysed in SPSS Version 23 using descriptive statistics, Pearson correlation and multiple regression after diagnostic checks. Recognize ($r = .682$; $B = 0.231$, $\beta = .252$, $p < .001$) and Reduce ($r = .764$; $B = 0.418$, $\beta = .441$, $p < .001$) were each positively and significantly associated with empowerment, net of the Redistribute strategy. Reduce was the stronger predictor, notably through clean cooking stoves and nearer water points. The model explained 69.7% of the variance in empowerment, $F(3, 164) = 125.64$, $p < .001$, and both null hypotheses were rejected. The study recommends scaling time-saving infrastructure alongside livelihood support, linking awareness campaigns to household dialogue and local planning, adding time-use and empowerment indicators to monitoring systems, and conducting longitudinal research.*

Keywords: *Care, Empowerment, Gender, Recognition, Reduction, Rwanda, Women*

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1. Introduction

Unpaid care and domestic work, which includes cooking, cleaning, collecting water and fuel, and looking after children, older people and the sick, keeps households and economies running, yet it is rarely counted in labour statistics and falls mainly on women. The International Labour Organization (2024) estimated that 748 million people outside the labour force in 2023 gave care responsibilities as their reason for being there; 708 million of them were women and 40 million were men. Globally, 45% of women outside the labour force cited care, against 5% of men, and women's labour force participation stood at 48.7% compared with 73.0% for men. Ferrant et al. (2014) had earlier shown, using cross-country data, that the time women spend on unpaid care is closely associated with gender gaps in labour outcomes across developing economies. Care responsibilities are therefore a first-order explanation of why women's economic participation lags behind that of men, and not a peripheral social concern.

The imbalance is especially pronounced in Africa, where gaps in water, energy and childcare infrastructure lengthen the time that household tasks demand. UN Women (2024b) reports that women in Africa spend on average 3.5 times more time on unpaid care and domestic work than men, which restricts their education, income generation and

community leadership. The policy response most widely associated with this problem is the 3R framework popularised by Elson (2017), which calls for unpaid care work to be recognised, reduced and redistributed. Recognition makes care visible and valued in statistics, policy and household life; reduction cuts the time and effort care requires through services, infrastructure and technology; and redistribution shifts responsibility from women to men, communities, markets and the state. The International Labour Organization later extended the framework to five Rs by adding the reward and representation of paid care workers (Addati et al., 2018).

UN Women operationalised the 3R approach through the programme "Transformative approaches to recognize, reduce and redistribute unpaid care work in women's economic empowerment programming", funded by Global Affairs Canada and implemented in Rwanda, Senegal and South Africa. Its pilot phase ran from March 2021 to March 2023 and combined evidence-based policy dialogue, bottom-up solutions for rural women, local development planning, climate-resilient and time-saving technologies, and gender-transformative approaches (UN Women, 2024a, 2024b). In Rwanda, the programme works in a setting where national policy has advanced gender equality but where time-use data still show a large gap. The National Institute of Statistics of Rwanda (2024) reports that women spend on average 24 hours a week on unpaid work against 13.6 hours for men, while a 2022 UN Women baseline in eight districts found that women spend 7.1 hours a day on unpaid care work compared with 2.1 hours for men (UN Women, 2024c).

Whether programmes of this kind translate into measurable economic empowerment is, however, not settled. Koolwal and van de Walle (2013), drawing on household data from nine developing countries, found that better access to water was associated with less unpaid work for women but not with more off-farm paid work, which suggests that released time can be absorbed by other tasks rather than converted into income. Evaluations of Oxfam's Women's Economic Empowerment and Care initiative reached a more encouraging conclusion on reduced care time and local recognition, while noting that norm-focused activities needed longer and more frequent delivery to shift care hours (Leon-Himmelstine & Salomon, 2020). These mixed findings show that the link between 3R strategies and empowerment depends on context and on how released time is used.

To the best of our knowledge, quantitative evidence from Rwanda that links the Recognize and Reduce strategies of the UN Women 3R Programme to specific dimensions of women's economic empowerment, namely economic participation, financial decision-making, and income growth and sustainability, remains scarce. Programme documentation reports good practices and lessons (UN Women, 2024a, 2024b), while most wider studies are global or regional in scope and do not test strategy-level effects within a single programme. This study addresses that gap. Its findings are useful to UN Women, the Ministry of Gender and Family Promotion, local governments and development partners who must decide which care interventions to prioritise and scale, and they contribute to monitoring Sustainable Development Goal 5, which includes the recognition and valuing of unpaid care and domestic work.

1.1 Statement of the Problem

Unpaid care work continues to reduce the time women can devote to paid work, enterprise, skills development and decision-making, even where national gender policy is strong. In Rwanda, women's daily care burden is more than three times that of men (UN Women, 2024c), and women's labour force participation fell from 58.2% in 2020 to 52.2% in 2023 while men's rose (National Institute of Statistics of Rwanda, 2024). The 3R Programme was designed to relieve these constraints, yet there is little empirical evidence on which of its strategies is associated with gains in women's economic empowerment, and by how much. Without such evidence, resources for care interventions may be allocated on assumption rather than demonstrated effect. This study therefore tests whether the Recognize and Reduce strategies are significantly related to women's economic empowerment among programme beneficiaries and stakeholders in Rwanda.

1.2 Research Objectives

The study aimed to examine the influence of unpaid care work reduction strategies under the UN Women 3R Programme on women's economic empowerment in Rwanda. The specific objectives were:

1. To assess the effect of the Recognize strategy on women's economic empowerment at the UN Women 3R Programme.
2. To assess the effect of the Reduce strategy on women's economic empowerment at the UN Women 3R Programme.

1.3 Research Hypotheses

H_{01}: The Recognize strategy has no statistically significant effect on women's economic empowerment at the UN Women 3R Programme.

H_{02}: The Reduce strategy has no statistically significant effect on women's economic empowerment at the UN Women 3R Programme.

2. Literature Review

2.1 Theoretical Review

Three theories frame the study. *Social Role Theory* (Eagly, 1987) holds that differences in men's and women's behaviour arise largely from the roles society assigns to them, which are learned through socialisation and sustained by institutions and norms. Where care is assigned to women by expectation, those expectations restrict how women allocate time between unpaid and paid work. The theory is most relevant to the Recognize strategy: if care is a socially assigned role and not a natural one, then changing how care is talked about and valued in households and communities should shift women's economic agency.

Time Use and Time Poverty Theory treats time as a finite resource whose allocation shapes welfare and economic opportunity. Bardasi and Wodon (2010) define time poverty as lacking enough time for rest and leisure once paid and unpaid work, including fetching water and wood, are accounted for, and show that women are more likely than men to be time poor. The theory speaks most directly to the Reduce strategy: stoves, nearby water points and similar technologies release hours that can be redirected to productive use.

Feminist Political Economy argues that unpaid care is the foundation on which paid production rests, and that its exclusion from economic accounting reinforces inequality (Benería, 2003; Folbre, 2001). It provides the rationale for treating water, energy and childcare infrastructure as productive public investment and for making care visible in policy, and so links both strategies. Each theory has limits when used alone: Social Role Theory says little about infrastructure, Feminist Political Economy gives less attention to household-level agency, and Time Use Theory emphasises hours more than decision-making power. The study therefore adopts them jointly, using Social Role Theory to interpret recognition, Time Use and Time Poverty Theory to interpret reduction, and Feminist Political Economy to explain why both matter for policy.

2.3 Empirical Review

2.3.1 Recognition and women's economic empowerment

Empirical evidence on the recognition of unpaid care work remains relatively limited compared with research on care service provision and time-saving interventions. This is partly because recognition functions as an enabling condition, with its effects often mediated through policy processes, institutional responses and changes in social norms. Elson (2017) argues that recognition mechanisms, particularly time-use surveys, the integration of unpaid care into national accounting frameworks and public policy debates, are instrumental in transforming unpaid care from an individual or private responsibility into a visible public policy concern. Such visibility provides the evidence base and political legitimacy necessary to advance interventions aimed at reducing and redistributing unpaid care responsibilities. Supporting this argument, Ferrant et al. (2014) demonstrate a close association between the disproportionate time women spend on unpaid care work and persistent gender inequalities in labour market outcomes. Their findings highlight the importance of making unpaid care contributions visible in order to expose their implications for women's economic participation and opportunities.

Programme-level evidence further illustrates the potential contribution of recognition interventions. The final evaluation of Oxfam's Women's Economic Empowerment and Care project in Zimbabwe and the Philippines found that, over its two-year implementation period, the project contributed to reducing women's time spent on care activities while also promoting the recognition of unpaid care work within local policy processes (Leon-Himmelstine & Salomon, 2020). However, the evaluation noted that interventions targeting social norms required longer implementation periods and more frequent engagement to generate more substantial changes in the distribution of care responsibilities and women's time use. Similarly, in Rwanda, UN Women (2024b) identifies evidence-based policy dialogue, integration of unpaid care into local development planning and gender-transformative approaches as important mechanisms for advancing recognition. Collectively, these findings suggest that recognition is essential for establishing the institutional and normative conditions necessary to address unequal care responsibilities, although its translation into measurable changes in women's time use depends on sustained policy engagement and complementary interventions.

2.3.2 Reduction and women's economic empowerment

Compared with recognition, empirical evidence on reducing unpaid care work through time-saving infrastructure is more extensive, particularly in relation to access to electricity, water and labour-saving technologies. Dinkelman (2011), examining the effects of rural electrification in South Africa, found that improved access to electricity increased women's employment, partly through the reduction of time spent on household production. This finding suggests that infrastructure investments can generate economic benefits for women by releasing time previously devoted to unpaid domestic activities. Similarly, Koolwal and van de Walle (2013), drawing on evidence from nine developing countries, found that improved access to water was associated with

reductions in women's unpaid work. However, they did not find a corresponding increase in women's participation in off-farm paid employment, indicating that reductions in unpaid work do not automatically translate into greater economic participation.

Programme evaluation findings provide further support for the contribution of time-saving infrastructure to reducing unpaid care burdens. Leon-Himmelstine and Salomon (2020) report that the introduction of new water infrastructure under Oxfam's Women's Economic Empowerment and Care project appeared to directly reduce the time women spent on certain unpaid care activities. Likewise, the independent evaluation of the UN Women 3R Programme documented a notable reallocation of women's and girls' time towards economic activities following their access to time-saving technologies in Rwanda, Senegal and South Africa (UN Women, 2024a). These findings demonstrate that infrastructure investments can reduce the time and physical effort required to undertake routine domestic and care activities. Nevertheless, the extent to which such time savings translate into economic gains varies across contexts.

Overall, the empirical literature suggests that time-saving infrastructure can make a direct contribution to reducing women's unpaid care workloads, but the economic benefits of such interventions are not automatic. While Dinkelman (2011) and UN Women (2024a) demonstrate potential links between time savings and increased economic activity, Koolwal and van de Walle (2013) show that reduced unpaid work does not necessarily result in greater participation in paid employment. This divergence highlights the importance of complementary conditions, including access to employment opportunities, labour market demand and supportive economic institutions. Thus, reducing unpaid care work is an important prerequisite for expanding women's economic opportunities, but its contribution to women's economic empowerment depends partly on whether the time released can be converted into productive and remunerative activities.

2.4 Research Gap

The reviewed literature shows that unpaid care limits women's labour outcomes and that recognition and reduction interventions can change how time is used. It also shows three gaps. First, much of the evidence is global, regional or conceptual and does not test strategy-level effects within a single programme. Second, studies that do examine infrastructure often stop at time saved and do not measure empowerment dimensions such as decision-making and income sustainability (Koolwal & van de Walle, 2013). Third, Rwanda-specific quantitative evidence on the Recognize and Reduce strategies of the 3R Programme is limited. The present study responds to these gaps by estimating the association of both strategies with three measured dimensions of empowerment in the Rwandan programme setting.

3. Methodology

3.1 Research Design

The study used a descriptive correlational, cross-sectional design. The descriptive component established how strongly the Recognize and Reduce strategies were perceived to be implemented and the prevailing level of women's economic empowerment, while the correlational component tested the direction, strength and significance of the relationships among the variables without manipulating the programme or respondents' circumstances. This design suits research that examines naturally occurring associations between variables (Creswell & Creswell, 2023). The quantitative data were complemented by interviews, observation and document review to support triangulation.

3.2 Study Area, Population and Sampling

The study was conducted in districts of Rwanda where the UN Women 3R Programme operates. The target population was 307 people in five categories: programme beneficiaries, field facilitators, monitoring and evaluation officers, community leaders and administrative staff. A sample of 174 was determined using Yamane's (1967) formula, $n = N / (1 + Ne^2)$, with $N = 307$ and a 5% margin of error ($307 / 1.7675 \approx 174$), which is 56.68% of the population. Stratified random sampling gave each category proportionate representation, and key informants with specialised knowledge of implementation, monitoring and community leadership were selected purposively for interviews. Of 174 questionnaires administered, 168 were returned valid.

Table 1: Population, Sample and Valid Responses

Category	Population	Sample	Valid responses
Programme beneficiaries	123	70	68
Field facilitators	61	35	34
Monitoring and evaluation officers	46	26	25
Community leaders	46	26	25
Administrative staff	31	17	16
Total	307	174	168

3.3 Variables and Instruments

Structured questionnaires comprising closed-ended items measured on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) served as the primary data collection instrument. The Recognize and Reduce strategies were each measured using five items, while women's economic empowerment was assessed through multiple indicators covering economic participation, financial decision-making, and income growth and sustainability. Complementary qualitative data were collected using semi-structured interview guides for key informants, observation checklists to assess implementation practices, and a document review guide to extract relevant information from project reports, monitoring records, and policy documents.

3.4 Pilot Test, Validity and Reliability

The instruments were pre-tested with 27 respondents from a similar institution outside the study sample, and wording and structure were refined from their feedback. The pilot instrument obtained a mean of 4.12 (SD = 0.435), indicating that items were clear and relevant. Face validity was addressed through clarity checks, content validity through alignment of items with the objectives, operational definitions and conceptual framework, and construct validity through mapping items to the study constructs. Internal consistency was assessed with Cronbach's (1951) alpha, with a threshold of .70 (Nunnally & Bernstein, 1994). Triangulation across questionnaires, interviews, observation and documents strengthened convergent validity.

3.5 Data Collection and Ethical Considerations

Primary data were collected with questionnaires, interviews and observation, and secondary data from project reports, policy documents and institutional records. Permission was obtained from UN Women 3R Programme management and local administrative authorities, with an introduction letter from the university. Participation was voluntary, informed consent was obtained verbally or in writing, respondents could withdraw at any time, and anonymity and confidentiality were maintained by avoiding personal identifiers. Data were stored securely and used for academic purposes only.

3.6 Data Analysis

Data were coded, cleaned and analysed in SPSS Version 23. Means, standard deviations, frequencies and percentages summarised responses; mean scores were interpreted as very low (1.00–1.80), low (1.81–2.60), moderate (2.61–3.40), high (3.41–4.20) or very high (4.21–5.00). Before inferential testing, assumptions were checked: normality through skewness (within ±2) and kurtosis (within ±7) following Curran et al. (1996) and the Shapiro–Wilk test (Shapiro & Wilk, 1965); multicollinearity through tolerance (> .10) and variance inflation factor (VIF) values (Field, 2018); heteroskedasticity through the Breusch–Pagan test (Breusch & Pagan, 1979); and autocorrelation through the Durbin–Watson statistic (Durbin & Watson, 1951), with values of 1.50 to 2.50 judged acceptable. Pearson correlation measured the strength and direction of associations, and multiple linear regression estimated effects using the model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where Y is women's economic empowerment, X_1 is the Recognize strategy, X_2 is the Reduce strategy, X_3 is the Redistribute strategy included as a control, and ε is the error term. Because the Redistribute strategy is held constant, the coefficients for X_1 and X_2 show the effect of each strategy net of redistribution. Hypotheses were tested

at the 5% level of significance, with a null hypothesis rejected where $p < .05$.

4. Results and Discussion

Results are presented under the two research questions. The section first reports the response rate, respondent profile, reliability and assumption checks, then descriptive and inferential findings for the Recognize and Reduce strategies, and finally discusses each finding against the literature.

4.1 Response Rate and Respondent Profile

Of the 174 questionnaires administered, 168 were validly completed and returned, representing a response rate of 96.55%. This high response rate minimised the potential for non-response bias and ensured representation across different stakeholder groups, including beneficiaries (40.48%), field facilitators (20.24%), monitoring and evaluation officers (14.88%), community leaders (14.88%) and administrative staff (9.52%), thereby providing a balanced basis for assessing the study variables. Women constituted the majority of respondents (73.81%), reflecting their central role in experiencing the burden under investigation, while men accounted for 26.19%, providing additional perspectives on shared care responsibilities. Regarding age, 71.43% were between 30 and 49 years, representing a population likely to balance income-generating activities with substantial family responsibilities. Educational attainment varied from no formal education (10.71%) to tertiary education (21.44%), highlighting the importance of delivering awareness messages through accessible community-based channels. Furthermore, 91.67% of respondents had participated in the programme for at least one year, indicating sufficient exposure to its interventions to provide informed assessments.

4.2 Reliability and Assumption Tests

All constructs were internally consistent, with Cronbach's alpha between .829 and .891, above the .70 threshold (Table 2). Skewness (−0.785 to −0.412) and kurtosis (0.114 to 0.892) were within the limits adopted, and Shapiro–Wilk significance values ranged from .124 to .231, so normality was not rejected. Tolerance values were .485 for Recognize, .392 for Reduce and .421 for Redistribute, with VIF values of 2.062, 2.551 and 2.375, which indicates that the strategies, although related, were distinct enough to estimate separately. The Breusch Pagan test was not significant, $\chi^2 = 4.182$, $p = .242$, so constant error variance was retained, and the Durbin Watson statistic of 1.894 fell within the acceptable range. The data therefore satisfied the assumptions for parametric analysis.

Table 2: Reliability and Normality Results for Study Constructs

Construct	Items	Cronbach's α	Skewness	Kurtosis
Recognize strategy	5	.842	-0.412	0.114
Reduce strategy	5	.876	-0.563	0.486
Redistribute strategy (control)	5	.829	-0.785	0.892
Women's economic empowerment	5	.891	-0.641	0.573

4.3 Descriptive Findings

4.3.1 The Recognize Strategy

Respondents rated the Recognize strategy highly overall (composite $M = 4.00$; Table 3). Awareness campaigns recorded the highest mean ($M = 4.21$, $SD = 0.812$), with 88.10% agreeing or strongly agreeing that they had raised the perceived economic value of care work, and household dialogues, rated at $M = 4.16$ ($SD = 0.865$), were seen by 85.12% as increasing women's voice in financial decisions. The lowest item concerned the tracking of care-recognition metrics in local frameworks ($M = 3.69$, $SD = 1.120$; 66.67% agreement), and it also showed the widest spread of opinion. Recognition at the level of attitudes and dialogue therefore appears to be running ahead of its formal institutionalisation.

Table 3: Descriptive Results for the Recognize Strategy

Statement	Agree (%)	*M*	*SD*	Interpretation
Awareness campaigns have raised the perceived economic value of care work	88.10	4.21	0.812	Very high
Local leaders formally validate women's care contributions in planning sessions	79.77	3.98	0.924	High
Recognition has reduced stigma around men performing domestic work	77.39	3.95	1.031	High
Household dialogues have increased women's voice in financial decision-making	85.12	4.16	0.865	High
Care-recognition metrics are tracked in local administrative or community frameworks	66.67	3.69	1.120	High

4.3.2 The Reduce Strategy

The Reduce strategy obtained the highest rating among the strategies (composite $M = 4.21$; Table 4). Clean cooking stoves and improved proximity to water points each scored $M = 4.37$, with 91.07% and 90.48% agreement respectively, and 86.90% of respondents agreed that time saved from domestic chores was redirected into income-generating activities ($M = 4.21$, $SD = 0.852$). Labour-saving processing equipment received the lowest score ($M = 3.98$, $SD = 0.963$), though still in the high range. Respondents thus experienced the Reduce strategy not only as a convenience but as a source of usable time.

Table 4: Descriptive Results for the Reduce Strategy

Statement	Agree (%)	*M*	*SD*	Interpretation
Clean cooking stoves have reduced daily firewood collection time	91.07	4.37	0.741	Very high
Closer water supply points have minimised daily fetching hours	90.48	4.37	0.785	Very high
Time saved from domestic chores is redirected into income-generating activities	86.90	4.21	0.852	Very high
Labour-saving processing equipment has increased women's agricultural productivity	79.17	3.98	0.963	High
Reduced physical care fatigue has improved wellbeing and business focus	84.52	4.14	0.887	High

4.3.3 Women's Economic Empowerment

Women's economic empowerment was rated high (composite $M = 4.14$; Table 5). Expanded participation in micro-enterprises and cooperatives had the highest mean ($M = 4.35$, $SD = 0.762$), followed by independent control of business revenue and savings ($M = 4.16$) and leadership in major family investment decisions ($M = 4.09$). Sustainable income opportunities scored lowest ($M = 3.95$, $SD = 1.008$). Empowerment was thus perceived to be strongest in participation and control of resources and weaker in the durability of income.

Table 5: Descriptive Results for Women's Economic Empowerment

Statement	Agree (%)	*M*	*SD*	Interpretation
Enrolled women have expanded participation in micro-enterprises and cooperatives	91.06	4.35	0.762	Very high
Women independently control business revenue and savings	85.11	4.16	0.871	High
Women lead decisions on major family investments	82.73	4.09	0.903	High
Women have experienced improved and sustainable income opportunities	76.78	3.95	1.008	High

4.4 Inferential Findings

Pearson correlations showed that women's economic empowerment was strongly and significantly related to both the Recognize strategy (r = .682, p < .01) and the Reduce strategy (r = .764, p < .01) (Table 6). The two strategies were themselves moderately correlated (r = .584), consistent with the VIF results that allowed them to enter one model.

Table 6: **Pearson Correlations Among Study Variables**

Variable	1	2	3	4
1. Recognize strategy	1.000			
2. Reduce strategy	0.584**	1.000		
3. Redistribute strategy (control)	. 0.521**	.612**	1.000	
4. Women's economic empowerment	0.682**	0.764**	0.715**	1.000

Note. ** p < .01 (two-tailed). Source:

The regression model was statistically significant, $F(3, 164) = 125.639$, p < .001 (regression sum of squares = 30.418; residual = 13.235; total = 43.653). The multiple correlation was R = .835, and the predictors jointly explained 69.7% of the variance in empowerment (R^2 = .697; adjusted R^2 = .692; standard error of the estimate = 0.2841). Table 7 shows that, holding the other strategies constant, the Recognize strategy had a significant positive effect (B = 0.231, β = .252, t = 4.442, p < .001) and the Reduce strategy had a larger one (B = 0.418, β = .441, t = 7.207, p < .001). The fitted equation was $Y = 0.412 + 0.231X_1 + 0.418X_2 + 0.276X_3$.

Table 7: Multiple Regression of Women's Economic Empowerment on the 3R Strategies

Predictor	*B*	*SE*	β	*t*	*p*	95% CI for *B*
(Constant)	0.412	0.128	--	3.219	.002	[0.159, 0.665]
Recognize strategy	0.231	0.052	.252	4.442	< .001	[0.128, 0.334]
Reduce strategy	0.418	0.058	.441	7.207	< .001	[0.303, 0.533]
Redistribute strategy (control)	0.276	0.055	.288	5.018	< .001	[0.167, 0.385]

Both null hypotheses were rejected at the 5% level (Table 8). Each effect was statistically significant and positive, and the Reduce strategy had the larger standardised effect, roughly one and three-quarter times that of the Recognize strategy. The confidence intervals for the two unstandardised coefficients overlap slightly (0.303 to 0.334), so the ranking is best read as indicative, not as a proven difference.

Table 8: Hypothesis Test Decisions

Hypothesis	*t*	*p*	Decision
H_{01}: The Recognize strategy has no significant effect on women's economic empowerment	4.442	< .001	Rejected
H_{02}: The Reduce strategy has no significant effect on women's economic empowerment	7.207	< .001	Rejected

4.5 Discussion

The Recognize Strategy and Women's Economic Empowerment

The finding that recognition is significantly and positively related to empowerment, even after accounting for the Redistribute strategy and the Reduce strategy, supports the argument by Elson (2017) that making unpaid care visible is a foundation for change and not merely a symbolic step. The pattern of item scores suggests how the effect works. The strongest items concerned campaigns that shifted views of care as economic work and household dialogues that strengthened women's voice in financial decisions. That is the pathway predicted by Social Role Theory (Eagly, 1987): when care stops being regarded as a natural, private obligation of women, women have a stronger basis on which to negotiate how time and money are used. It also matches Kabeer's (1999) view that empowerment depends on agency as well as resources, since dialogue appears to widen women's agency in decisions before any physical burden is lifted.

The result is consistent with programme evidence that recognition and local policy engagement were among the visible outcomes of Oxfam's care initiative (Leon-Himmelstine & Salomon, 2020) and with the emphasis that UN Women (2024b) places on policy dialogue and gender-transformative approaches in Rwanda. It also fits the link established by Ferrant et al. (2014) between unpaid care time and labour outcomes, which gives recognition its evidential purpose. The standardised effect of recognition (β = .252) was smaller than that of reduction (β = .441), which suggests that recognition acts mainly as an enabling, normative condition and not as a direct releaser of time.

The weakest item, the tracking of care-recognition metrics in local frameworks (M = 3.69), points to a Feminist Political Economy concern: attitudes can change faster than the planning and statistical systems that would lock the change in (Benería, 2003; Folbre, 2001). Awareness campaigns should therefore not stand alone but be tied to household dialogue, local planning and measurable indicators. This finding rests on perceptions and a cross-sectional design, so it shows association and not proof that recognition caused empowerment.

The Reduce Strategy and Women's Economic Empowerment

Reduction had the strongest correlation with empowerment (r = .764) and the largest standardised regression effect (β = .441). This agrees with Time Use and Time Poverty Theory, which treats time as a scarce resource: where stoves shorten fuel collection and water points shorten fetching trips, women gain discretionary hours (Bardasi & Wodon, 2010). Respondents' agreement that saved time was redirected to income-generating activity (86.90%) indicates that the freed hours were reported as being used productively. The result is consistent with Dinkelman (2011), who found that rural electrification raised women's employment in South Africa, and with the observation of the independent UN Women evaluation that women's and girls' time was substantially reallocated towards economic activity once time-saving technologies reached them (UN Women, 2024a).

The finding needs one qualification that the literature makes plain. Koolwal and van de Walle (2013) found that better water access reduced women's unpaid work but did not increase off-farm paid work, which shows that saved time can be absorbed elsewhere. In the present study, the more modest score for labour-saving processing equipment (M = 3.98) and the lower rating of sustainable income (M = 3.95) suggest that the step from saved time to durable income is less secure than the step from infrastructure to saved time. Rwanda's gender gap in unpaid work (24 compared with 13.6 hours weekly; National Institute of Statistics of Rwanda, 2024) and the rise in women's formal non-bank savings from 44% to 53% by 2024, which still trails the 65% recorded for men (National Institute of Statistics of Rwanda, 2024), are consistent with both the opportunity and the remaining gap.

From a Feminist Political Economy perspective, the result supports treating water, energy and labour-saving technology as productive public investment, because it directly addresses the time constraint that prevents women from using available economic opportunities. In practice,

reduction should be paired with access to markets, savings groups, skills and finance so that released time becomes income.

4.6 Limitations and Further Research

Several limitations should be considered when interpreting the findings. First, the cross-sectional and correlational research design established statistically significant associations but could not demonstrate causal relationships among the 3R strategies and women's economic empowerment. Second, the study relied on self-reported perceptions, which may have been influenced by social desirability bias, while the high and negatively skewed composite scores may have limited the variability of responses. Additionally, women constituted approximately three-quarters of the respondents, while direct beneficiaries accounted for only 40.48%, meaning that the findings reflect a combination of beneficiary and stakeholder perspectives rather than beneficiaries alone. The study also could not fully isolate the influence of the UN Women 3R Programme from other empowerment interventions in which respondents may have participated.

Future research should employ longitudinal and quasi-experimental designs to establish the extent to which the observed relationships translate into sustained improvements in women's economic empowerment. Further studies should also examine the independent contribution of the Redistribute strategy, compare programme outcomes across rural and urban settings, and assess how participation in other empowerment initiatives influences programme outcomes. Such research would provide a deeper understanding of the effectiveness, sustainability and broader applicability of the 3R approach in addressing unpaid care work and advancing women's economic empowerment.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that the Recognize, Reduce and Redistribute (3R) strategies under the UN Women 3R Programme are positively and significantly associated with women's economic empowerment. Specifically, the Recognize strategy demonstrated a significant positive relationship with economic empowerment (r = .682; B = 0.231, β = .252, p < .001), leading to the rejection of the first null hypothesis. This suggests that awareness campaigns and household dialogues play an important role in increasing the recognition of unpaid care work and strengthening women's participation in financial decision-making, although limited integration of care recognition into local institutional frameworks remains a challenge. The Reduce strategy exhibited an even stronger positive relationship (r = .764; B = 0.418, β = .441, p < .001), resulting in the rejection of the second null hypothesis. Interventions such as clean cooking stoves and improved access to water points were particularly effective in reducing time spent on unpaid care activities, allowing women to redirect saved time towards income-generating activities. Overall, the three strategies jointly explained 69.7% of the variation in women's economic empowerment, demonstrating the importance of addressing unpaid care work as both a gender equality and economic development priority. However, the extent to which these interventions translate into sustainable economic gains depends on the availability of livelihood opportunities and stronger institutional support for care-related interventions. Given the cross-sectional design and reliance on self-reported data, the findings establish significant associations rather than definitive causal relationships.

5.2 Recommendations

Based on the findings from this study, the following recommendations were established:

1. UN Women, the Ministry of Gender and Family Promotion and district authorities should connect awareness campaigns and household dialogues to local development planning and performance monitoring, so that recognition becomes institutional and not temporary. Care-recognition and time-use indicators should be added to district planning and reporting systems, and campaigns should be linked to measurable empowerment outcomes such as participation in income-generating activity and financial decision-making.
2. Implementers and local governments should scale clean cooking stoves, nearby water points and labour-saving equipment, giving priority to households and communities with the heaviest care burden. These investments should be paired with savings groups, cooperatives, skills training and market access so that released time becomes income. Monitoring and evaluation should record the hours saved and how they are used, and the Ministry of Finance and Economic Planning should treat care-reducing infrastructure as productive investment within gender-responsive budgeting.

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