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Development Of a Specialized Monitoring and Evaluation (M&E) Framework for the 1000-Days Social Cash Transfer Pilot Project in The Chipata District of Eastern Province

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Abstract

This study provides a comprehensive assessment of the 1000-Days Social Cash Transfer (SCT) Gender and Nutrition-Sensitive pilot project in Chipata District, Zambia. The research aimed to evaluate the program's implementation fidelity, its impact on maternal and child nutritional status, and its effectiveness in promoting gender equity and women's empowerment in vulnerable households. A convergent parallel mixed-methods approach was employed, utilizing quantitative questionnaires administered to 379 beneficiary households alongside qualitative insights derived from 11 Key Informant Interviews (KIIs) and 3 Focus Group Discussions (FGDs). Quantitative results were analyzed using SPSS, while qualitative data underwent thematic analysis. Key quantitative findings indicated significant improvements in nutritional outcomes and gender empowerment. For children under 24 months, 75.2% consumed solid foods 3 to 5 times daily, and 52.8% of participants reported a significant improvement in their child's nutritional status. Pregnant and breastfeeding women displayed improved dietary practices, with 96.6% consuming dark green leafy vegetables. The project increased women's economic control and decision-making power, as 88.4% of payments were made to female heads of household or spouses, and 73.9% of female respondents felt much more or somewhat more confident in making decisions about their children's nutrition and health. Inferential analysis confirmed a statistically significant positive correlation ($r=0.241$, $P<0.001$) between the SCT payment amount and maternal dietary diversity, and that caregiver's education level had a statistically significant effect on women's decision-making authority ($P < .001$). Qualitative data reinforced these findings, highlighting that strong community involvement through Community Welfare Assistant Committees (CWACs) and effective coordination with health services were critical success factors. However, key challenges identified include resistance from some male household members related to gender norms and delays in payment disbursement. The study concludes that the 1000-Days SCT pilot project was largely implemented as designed, resulting in notable improvements in maternal and child nutritional status and bolstering women's decision-making power over household resources. Recommendations include strengthening community capacity, integrating climate-resilient strategies, and leveraging technology for payment disbursement. The study contributes significantly by proposing a specialized M&E framework tailored for nutrition-sensitive SCTs.

Keywords: 1000-Days Social Cash Transfer; Dietary Diversity; Child Nutrition; Maternal nutrition; Gender Equity and Women's Empowerment; Implementation Fidelity, Zambia

1. Background of the Study

The persistent challenge of malnutrition, particularly among children under five, remains a significant impediment to economic prosperity and human capital development globally (Amadi et al., 2017; Murray et al., 2012; Reber et al., 2019).

The prevalence of child undernutrition is a critical worldwide concern, affecting those in low- and middle-income countries (LMICs) disproportionately (Richterman et al., 2023; Sadowski et al., 2024). Globally, approximately 144 million children under the age of 5 (about 21%) are estimated to be stunted (Has et al., 2024), 47 million children (about 7%) are wasted (Black et al., 2013; Sambo & Tranchant, n.d.), and 38 million children (about 6%) are overweight. The economic consequences are devastating, with estimated costs reaching $3.5 trillion per year, representing a loss of 4–5% of global GDP due to higher healthcare costs and reduced productivity (Osendarp et al., 2022). Undernutrition is closely linked to poverty, limiting access to nutritious and affordable diets and essential services in impoverished households.

Research underscores the critical opportunity presented by the first 1000 days of life, spanning from conception until a child reaches their second birthday (Beluska-Turkan et al., 2019), as this period shapes a child's future health, cognitive development, and overall well-being (Scott, 2020). During this vital phase, a child's brain experiences rapid growth, emphasizing the need for adequate nutrient intake to support neurological functioning (Derbyshire & Obeid, 2020). In the long run, poor nutrition has negative effects that are especially dire, with worsened health outcomes, including impaired cognitive development and stunted growth, often proving irreversible.

Malnutrition remains a significant global health concern and a leading cause of death among children, resulting in approximately 3.5 million child deaths annually (Amadi et al., 2017). In the regional context, Sub-Saharan Africa (SSA) bears a disproportionate burden of this global crisis, housing 40% of all stunted children worldwide (Onwuchekwa et al., 2021). To address the crisis, interventions promoting healthy practices and improving access to food, such as social cash transfers (SCTs), are essential during the first 1000 most critical days (Draper et al., 2023). SCTs, whether conditional (CCTs) or unconditional (UCTs), have emerged as a powerful tool in SSA for combating food insecurity and poverty (Gitter, 2005). These direct cash payments enhance household purchasing power, improve dietary diversity, and facilitate access to essential services for vulnerable populations. Notably, SCT programs have been found to have positive impacts on household food consumption, dietary diversity, and the nutritional status of children, particularly in regions facing high food insecurity.

Zambia, like many of its sub-Saharan counterparts, is not immune to widespread and multifaceted malnutrition, which acts as a significant barrier to the country's socioeconomic progress. Data from the 2018 Zambia Demographic and Health Survey (ZDHS) provides stark evidence of the crisis: 35% of children under five are stunted (chronic malnutrition), 6% suffer from wasting (acute malnutrition), and 11% are underweight (Bwalya et al., 2017; Statistics Agency, 2020; Zakaria et al., 2024). These high rates persist above the WHO threshold of 20% deemed a public health concern. Furthermore, malnutrition in low-income countries like Zambia is tragically responsible for more than 45% (Sturgeon et al., 2023) of child mortality.

To directly tackle this urgent issue, the Ministry of Community Development and Social Services (MCDSS), supported by UNICEF and other partners, initiated the 1000-Days Social Cash Transfer (SCT) Nutrition Pilot. This initiative is designed as a cash-plus program that combines financial assistance (ZMW 550 bi-monthly for pilot beneficiaries) with supplementary services, such as linkages to nutrition services via the SUN-II program and community case management (Sambo & Tranchant, n.d.). The pilot specifically targets pregnant and breastfeeding women, adolescent girls, and households with children under 24 months in four districts, including the Chipata District of Eastern Province. The core goal of the program is to improve the nutrition status of mothers and children during the critical 1,000-day window.

Despite implementing Social Cash Transfers (SCTs) to address food insecurity and malnutrition, evidence regarding their impact on child nutritional outcomes remains inconsistent across African recipient households (Jalal, 2018). Studies in Malawi's Mchinji CT Programme revealed mixed results on nutritional outcomes (Aung et al., 2021; Miller et al., 2011; Rana et al., 2023), while research in Kenya found no significant impact on child nutritional status (Likhar & Patil, 2022). In Zambia specifically, the effects of SCT programs have proven complex and multifaceted (Wolkenhauer, 2023), with some benefits lasting for one year but diminishing after three years (Murray et al., 2012). The innovative 1000-Day SCT pilot project specifically targets this critical developmental window, yet its effectiveness remains largely undocumented due to inadequate monitoring and evaluation systems.

The innovative 1000-Day SCT pilot project is uniquely focused on the critical developmental window, yet its effectiveness remains largely undocumented due to inadequate monitoring and evaluation (M&E) systems. Current M&E frameworks generally focus on broader SCT programs rather than those specifically tailored to the nuances of a nutrition-sensitive, gender-sensitive intervention targeting the first 1000 days. This crucial methodological gap prevents the accurate measurement of the project's success, obstructs the identification of implementation challenges, and hinders the development of evidence-based recommendations necessary for scaling successful interventions (Sambo & Tranchant, n.d.). This research aims to bridge this methodological and empirical gap by developing and implementing a specialized monitoring and evaluation (M&E) framework tailored to Zambia's 1000-Day SCT pilot project. By addressing this gap, the study will enable more accurate measurement of the project's effectiveness, identify key implementation challenges, and provide the evidence base necessary for scaling successful, integrated interventions in Zambia and similar contexts.

2. Methodology

The study adopted a mixed-methods approach to comprehensively assess the implementation and effectiveness of the 1000-Days SCT pilot project, addressing both measurable changes ('what') and implementation processes/gender dynamics ('why' and 'how').

Research Design: A convergent parallel design was employed, involving the simultaneous collection of quantitative and qualitative data. Each data type was analyzed independently before merging the findings during the interpretation phase to achieve a more thorough understanding. The research was guided by a pragmatic philosophy, prioritizing practical solutions and allowing the use of multiple methods to gather information about the program's implementation and outcomes.

2.1 Target Population and Sample Size

The study was conducted in Chipata District, one of the four pilot districts for the 1000-Days SCT project. The overall caseload of enrolled households was 6,444. The overall sample size was estimated according to Cochran's sample size formula as follows:

$$n = \frac{z^2 p(1-p)}{e^2}$$

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2}$$

Finite population correction was done to produce a sample size that is proportional to the population; therefore, the sample size was calculated as;

$$n = \frac{n_o}{1 + \frac{(n_o - 1)}{N}}$$

Where:

n_o.= desired sample size

N=the estimate of the population size

$$n = \frac{6444}{1 + \frac{(6444 - 1)}{200}}$$

n= 384

Thus, the study drew 384 recipients of the 1000-day SCT. Purposive sampling was used for the qualitative component, where 11 Key Informant Interviews and 3 Focus Group Discussions were needed. This included representatives from the District Social Welfare office, the District Welfare Assistant Committee, officers from the Nutrition Food Coordinating Committee, and the Ward Nutrition Coordinating Committee.

2.2 Data Collection Methods

Sampling Techniques and Data Collection:

The study employed a multistage sampling design that systematically combined cluster and stratified sampling techniques. This comprehensive approach was essential to ensure that the different geographical strata (constituencies) within the Chipata District were adequately represented, thereby accounting for regional variations in socio-economic conditions, access to services, and cultural practices that might influence nutritional outcomes. For instance, the researcher first divided the total population of households participating in the pilot project into distinct geographical strata, such as rural versus urban constituencies. Within each selected constituency, the researcher subsequently used cluster sampling to select specific wards and communities. Finally, individuals were sampled from these identified clusters to collect data on nutritional indicators and empowerment metrics. To gather in-depth, contextual data, the study employed purposive sampling for the qualitative component. This technique allowed for the deliberate selection of individuals possessing specialized knowledge or experience relevant to the study objectives.

2.3 Data Analysis

Quantitative data were analyzed using SPSS version 26.0 through descriptive statistics (frequencies, means) and inferential statistics (t-tests, chi-square, regression analysis). Qualitative data from interviews and FGDs were analyzed using thematic analysis.

2.4 Ethical Considerations

Ethical considerations were paramount throughout all phases of the research, beginning with the commitment to secure Institutional Review Board (IRB) approval from the university to safeguard the rights and welfare of all human participants. To ensure ethical conduct and proper access to the study sites, it was also essential to obtain local permissions from relevant authorities and engage with gatekeepers and community leaders. A central requirement was maintaining adherence to voluntary participation and informed consent, ensuring participants understood the general purpose and aims of the 1000-Days SCT project and were not pressured to participate, retaining the right to choose not to answer any question or stop the interview at any time. Given that the research focused on the 1000-Days SCT program, special care and consideration were specifically given to the needs of vulnerable populations, such as young children and pregnant women, who are the primary beneficiaries. Furthermore, confidentiality and privacy were strictly maintained throughout the process, involving the protection of the anonymity of individuals, roles, and incidents to avoid the disclosure of any

harmful information. Lastly, the researcher ensured accuracy and objectivity in the data analysis, avoiding the falsification of information and maintaining transparency and accountability during interpretation, while also considering ethical concerns such as addressing unintended consequences, like reinforcing traditional gender norms.

3 Study Findings and Discussion

3.1 Response Rate

The response rate table shows that the quantitative survey component achieved a near-perfect response rate, with n=379 completed questionnaires out of 384 targeted, representing 98.7%. Similarly, Key Informant Interviews (KII) achieved a 100% completion rate (n=11). However, Focus Group Discussions (FGDs) were slightly lower, with only n=3 completed out of 4 scheduled, resulting in a 75% response rate. This indicates high engagement from the beneficiary households and staff required for the quantitative analysis, and that the program was being largely implemented as designed, strictly adhering to the eligibility criteria focused on pregnant women and households with children under two years old.

Table 1: Response Rate

Characteristic	Frequency (n)	Percentage (%)
Quantitative Survey Response Rate (N=384 targeted)	n=379	98.7%
Key Informant Interviews (KII) Completion (N=11 targeted)	n=11	100%
Focus Group Discussions (FGD) Completion (N=4 targeted)	n=3	75%

3.2 Socio-Demographic Information of Respondents

The Socio-Demographic Information was collected to provide a comprehensive overview of the participants' backgrounds and understand how factors such as age, gender, and education might influence the overall effectiveness of the 1000-Days Social Cash Transfer (SCT) program on maternal and child nutritional status.

The study included 379 respondents in the quantitative data collection. The beneficiaries were predominantly female, suggesting a significant gender disparity in participation. Specifically, females represented 97.4% (n= 369) of the sample, compared to 2.6% (n=10) males only. The majority of respondents belonged to the age group between 30 and 34 years old (38.0%, n=114). The next largest group was those aged 25-29, accounting for 29.6% (n=112) of the respondents. Only 7.7% (n=29) of respondents were 50 years of age and above. More so, the majority of individuals benefiting from the 1000-Days SCT program were found to be closely related to the household head. The distribution showed that 65.4% (n=248) of respondents were spouses to the household head. Furthermore, 15.6% (n=59) of the respondents identified as the head of the household (Self (HHH)). Only 1.3% (n=5) indicated they belonged to another relationship type.

The findings indicate that the 1000-Days SCT beneficiaries are fairly educated. A majority of the respondents, who were primary caregivers for children under two years, reported having completed secondary school education, 64.6% (n=245). An additional 29.6% (n=112) of respondents had completed primary school education. A smaller percentage, 5.8% (n=22), had completed tertiary education. Regarding literacy, 76.0% of the primary caregivers possessed both reading and writing abilities. However, a notable segment of the population, 16.4%, reported lacking both reading and writing skills ("Neither"). Only 3.7% could read only, while 4.0% could write only.

Table 2: Summary of Socio-Demographic Information (N=379)

Category	Characteristic	Frequency (n)	Percentage (%)
Gender Distribution	Female	369	97.4
	Male	10	2.6
Age Distribution	20 - 24 years	57	15.0
	25 - 29 years	112	29.6
	30 - 34 years	144	38.0
	35 - 49 years	37	9.8
	50 or above	29	7.7
Relationship to Household Head	Spouse	248	65.4
	Self (HHH)	59	15.6
	Parent	46	12.1
	Child	21	5.5
	Other	5	1.3
Education Level of Caregivers	Secondary School (8 - 12 grade)	245	64.6
	Primary School (1 - 7 grade)	112	29.6
	Tertiary completed	22	5.8
Literacy Levels of Primary Caregivers	Yes, both (read and write)	288	76.0
	Neither	62	16.4
	Can write only	15	4.0
	Can read only	14	3.7

3.3 Descriptive statistics

This section presents the descriptive and inferential statistics pertinent to the main objectives of the study, derived from quantitative data collected from a sample of n=379 respondents.

Changes in Key Nutritional Indicators for Children

Table 3 shows that the majority of children under 24 months (n=285, 75.2%) were reported to have consumed solid, semi-solid, or soft foods 3 to 5 times in the previous day. Furthermore, access to essential food groups was high, with a significant majority (n=330, 87.1%) consuming Vitamin A-rich fruits and vegetables in the last 24 hours. When respondents gauged the perceived impact of the SCT program, the results were overwhelmingly positive: 52.8% (n=200) reported a significant improvement in their child's nutrition status, and another 23.7% (n=90) noted a very significant change. Health-seeking behavior was also strong, as 93.4% (n=354) of children had attended the Child Monitoring Progress (GMP) in the past three months, with 84.9% (n=322) of those monitored documented as "Growing well".

Table 3: Child Nutrition (Under 24 Months, N=379)

Characteristic	Frequency (n)	Percentage (%)
Children consuming solid foods 3 to 5 times **(yesterday)**	n=285	75.2
Children consuming Vitamin A-rich fruits/vegetables **(last 24 hours)**	n=330	87.1
Perceived change in child's diet/health (Significantly improved)	n=200	52.8
Perceived change in child's diet/health (Very significant change)	n=90	23.7
Child attended Growth Monitoring Progress (GMP) in the past 3 months	n=354	93.4
GMP Outcome: Growing well	n=322	84.9

Changes in Key Nutritional Indicators for pregnant and breastfeeding women

For pregnant and breastfeeding women, dietary diversity was high in key groups, with a significant majority (n=366, 96.6%) consuming dark green leafy vegetables. Perceptions of improved dietary consumption were also high, with 48.5% (n=184) reporting a significant change and 25.6% (n=97) reporting a very significant change since enrollment in the program. Regarding healthcare utilization, a large majority of mothers reported that their health-seeking behavior had significantly improved (n=260, 68.6%) or somewhat improved (n=114, 30.1%) since participating in the program, as seen in Table 4 below.

Table 4: Maternal Nutrition and Health (Pregnant/Breastfeeding, N=379)

Characteristic	Frequency (n)	Percentage (%)
Mothers consuming dark green leafy vegetables **(last 24 hours)**	n=366	96.6
Perceived change in maternal diet (Significantly improved)	n=184	48.5
Perceived change in maternal diet (Very significant change)	n=97	25.6
Health-seeking behavior (Significantly improved) since SCT	n=260	68.6
Health-seeking behavior (Somewhat improved) since SCT	n=114	30.1

Effectiveness in Promoting Gender Equity and Women's Empowerment

Table 5 shows a high level of female economic inclusion, as 88.4% of SCT payments are received by female Household Heads (HHH) or their spouses. Regarding how the money is spent, the majority (n=235, 62.0%) reported deciding jointly with their partner, while a significant portion (n=130, 34.3%) reported the woman decides alone. When assessing the change in participation since the program started, the majority reported their involvement in household decision-making had significantly increased (n=218, 57.5%) or somewhat increased (n=116, 30.6%). Women exercise significant control over day-to-day spending, with 62.3% (n=236) making daily food purchases alone. Finally, regarding confidence in making health and nutrition decisions for children, a large majority of female respondents reported feeling much more confident (n=107, 29.0%) or somewhat confident (n=173, 46.9%) since receiving the SCT payments

Table 5: Gender Equity and Women's Empowerment (N=379).

Characteristic	Frequency (n)	Percentage (%)
Recipient of SCT payment: Female HHH/spouse	-	88.4%
Decision on SCT money use: Jointly	n=235	62.0%
Decision on SCT money use: Woman alone	n=130	34.3%
Change in household decision-making (Significantly increased)	n=218	57.5%
Change in household decision-making (Somewhat increased)	n=116	30.6%
Involvement in Daily food purchases: Woman alone	n=236	62.3%
Confidence in children's health/nutrition decisions (Much more confident) **(N=369 females)**	n=107	29.0%
Confidence in children's health/nutrition decisions (Somewhat confident) **(N=369 females)**	n=173	46.9%

3.4 Inferential Statistical

The inferential statistics were used to evaluate statistically significant changes, relationships, and predictability among variables associated with maternal and child nutritional status and women's empowerment among the 1000-Days Social Cash Transfer (SCT) beneficiary households.

Table 6: Summary of Inferential Statistical Findings (N=379)

Test Name	Variables Compared	Key Result	Conclusion
Independent Samples T-Test	Household Dietary Diversity (Urban vs. Rural)	Statistically Significant Difference: t(377) = 6.205, P < .001	There is a significant difference in household dietary diversity between urban and rural beneficiaries; the difference is a true difference in the population, with one group (Urban) having a higher score.
Chi-Square Test	SCT Amount Received (ZMW 150 vs. ZMW 550) and Child's Dietary Improvement	Statistically Significant Association: χ 2 (1) =8.585, P<.003	There is a statistically significant association between the amount of SCT received and the perceived improvement in the child's diet.
Mann-Whitney U Test	Recipient Gender (Male vs. Female HHH/Spouse) and Household Food Security	Not Statistically Significant: P = .197	The gender of the SCT recipient does not significantly influence household food security outcomes.
Pearson Correlation	SCT Payment Amount and Maternal Dietary Diversity	Positive Correlation: r = 0.241, P < .001	A positive and statistically significant correlation exists: higher SCT payment amounts are associated with improved maternal dietary diversity.
One-Way ANOVA	Caregiver Education Level (Primary, Secondary, Tertiary) vs. Dietary Diversity	Significant Effect on Household Diet: P < .001. Significant Effect on Maternal Diet: P < .001. No Significant Effect on Child Diet: P = .601	Education level significantly affects household and maternal dietary diversity scores, but the effect on the child's diet was insufficient to be deemed statistically significant.
Multiple Linear Regression	Factors Predicting Women's Decision-Making Authority (Model Fit: P<.001)	Education Level: β=0.33, P<.001. Amount Received: P=.58. Who Decides: P=.9	The caregiver's education level had a positive and statistically significant effect on women's decision-making authority, while the SCT amount and who decides how to use the money did not show significant effects.

Table 6 above shows that the Independent Samples T-test confirmed a statistically significant difference in household dietary diversity scores, indicating that the observed gap between groups (Urban vs. Rural) is likely a true population difference and not due to chance. Also, the Chi-Square test established a statistically significant association between receiving the higher SCT payment amount (ZMW 550) and a reported improvement in the child's diet, suggesting that the amount received directly influences perceived nutritional outcomes. Although the SCT program predominantly targets women, the Mann-Whitney U test found that the gender of the recipient does not statistically influence overall household food security outcomes, implying other factors are more critical determinants of food security in these households. Moreover, the Pearson Correlation confirmed a positive correlation between the SCT payment amount and maternal dietary diversity, meaning higher payments are associated with improved maternal diets, reinforcing the program's intended outcome.

Regarding the role of Education in Diet, the ANOVA test found that higher caregiver education levels (Primary, Secondary, Tertiary) led to significantly higher household and mother dietary diversity scores, though this effect was not statistically significant for the child's specific diet (consumption of solid foods). The Multiple Linear Regression analysis concluded that the education level of the caregiver had a positive and significant effect on women's decision-making authority. This factor was the strongest predictor of improved empowerment, while the size of the cash transfer or who initially decided how to use it did not show a predictive effect on increased authority.

3.5 Qualitative Data (KIIs and FGDs)

The qualitative data collected through Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs) provided rich, contextual insights into the implementation, challenges, and perceived effectiveness of the 1000-Days Social Cash Transfer (SCT) pilot program, focusing on three primary thematic areas.

Implementation Fidelity of the 1000-Days SCT Program

The qualitative findings confirmed that the program was largely implemented as designed, adhering to its core goal as a cash-plus initiative aimed at improving the nutritional status of mothers and children during the critical first 1000 days of life.

Design and Process: The program deliberately targets households with pregnant women, breastfeeding mothers, and children under 24 months. The implementation process strictly followed established steps, including community sensitization, registration of eligible households, conducting the Proxy Means Test (PMT), verification, and routine monitoring.

Coordination: Implementation fidelity was reinforced by close coordination with existing health and nutrition services, linking beneficiaries to antenatal care, growth monitoring, immunizations, and nutrition counseling.

Challenges and Adaptations: Implementers noted that practical and social challenges tested adherence to the original design. These challenges included logistical issues, limited access to health facilities, and deeply entrenched cultural norms. Adaptations, such as integrating outreach services and strengthening collaboration with local health workers, were necessary to overcome these obstacles.

Gender Equity and Women's Empowerment

The project aimed to be gender-sensitive by empowering women and raising awareness of proper nutrition uptake to address existing gender inequalities. Participants observed a noticeable increase in women's decision-making power, particularly concerning household spending and seeking health services. The financial assistance component was viewed as having the potential to empower women by increasing their control over household resources.

Gender Challenges and Community Response

The primary challenge noted was resistance from some male household members who viewed the focus on women (direct cash transfers and reproductive health services) as a threat to their traditional roles and authority. Women sometimes faced restrictions on how to use the money or were discouraged from attending support groups without their partner's approval. Through consistent sensitization and involvement of local leaders, the community response gradually improved, fostering a growing recognition that empowering women leads to better outcomes for the entire family.

Critical Success Factors and Areas of Improvement

Key stakeholders and beneficiaries identified specific factors contributing to success and highlighted operational areas needing adjustment before scaling the program.

Successful Factors: Critical success factors included strong community involvement through CWACs and local leaders, which fostered acceptance and ownership. The effective coordination of the cash transfer with health facilities and essential services was highlighted as crucial. Beneficiaries also reported that the holistic approach, including interactive cooking demonstrations and educational materials, was highly valuable.

Areas for Improvement: The most frequent criticism related to operational issues particularly the frequency of delays and uncertainty in the disbursement of monies. Recommendations included increasing payment amounts and changing the frequency to monthly rather than bi-monthly for better budgeting and planning. For stronger nutrition outcomes, respondents suggested scaling up food cooking demonstrations, increasing community sensitization on feeding practices, and encouraging male involvement in caregiving roles.

3.6 Discussion of Findings

Implementation Fidelity of the 1000-Days Social Cash Transfer Program

The study found that the 1000-Days Social Cash Transfer (SCT) pilot project is largely being implemented as designed, adhering to its core elements as a cash-plus initiative focused on gender and nutrition sensitivity. The implementation process strictly followed eligibility criteria targeting pregnant women and households with children under two years old, involving community sensitization, registration, and routine monitoring. A significant qualitative finding was the strong coordination with existing health and nutrition services, ensuring beneficiaries' access to essential services like antenatal care and nutrition counseling. However, challenges were noted, including logistical issues, limited access to health facilities, and cultural resistance from some male household members to the program's focus on women.

The rigorous adherence to the program's design, particularly the integrated "cash-plus" component, ensures the project can be accurately evaluated against its goals, strengthening the evidence base for nutrition-sensitive social protection interventions in Zambia. Community involvement through CWACs and local leaders was vital, enhancing local acceptance and confirming the project's relevance to community needs. The identification of operational and social challenges (logistical issues, cultural norms) necessitates dynamic adaptations such as strengthening collaboration with health workers and increasing community sensitization, which is crucial for achieving long-term effectiveness.

The findings regarding the critical importance of maintaining fidelity align with global studies indicating that fidelity is essential for the success of SCT programs (Arriagada et al., 2018). The strong emphasis on local involvement mirrors the success factors found in previous Zambian initiatives, such as the Kalomo SCT (Chiwele, 2010), which stressed the need for community adherence. Conversely, the challenges faced, such as logistical barriers and resource constraints, reflect common implementation issues documented in Sub-Saharan Africa (Haushofer et al., 2014; Jain et al., 2019; Kumar et

al., 2022). However, some studies indicate that fidelity varied in Sub-Saharan Africa due to policy guidelines and resource constraints (Kumar et al., 2019). Findings highlight issues in coordination, communication, monitoring, funding flows, and challenges or successes in delivering priority interventions (PIs).

Based on these findings, the author deduced that implementing any nutrition- and gender-sensitive project must involve a structured process adhering to a specific design focused on vulnerable populations. The program's design, targeting criteria, and enrollment process reflect efforts to follow established protocols closely.

Changes in Key Nutritional Indicators among Mothers and Children

The study revealed notable positive changes in nutritional indicators for beneficiaries. For children under 24 months, 75.2% were consuming solid foods 3 to 5 times daily. Furthermore, 76.5% of participants reported a significant (52.8%) or very significant (23.7%) improvement in their child's nutrition status and general health since enrolling. For pregnant and breastfeeding mothers, a highly significant percentage (96.6%) consumed dark green leafy vegetables, demonstrating improved dietary diversity. Inferential statistics showed a statistically significant positive correlation ($r=0.241$, $P<0.001$) between the SCT payment amount and maternal dietary diversity, suggesting higher payments correlate with better maternal diets. Also, a large majority (98.7%) of mothers reported that their health-seeking behavior had significantly or somewhat improved. These results confirm that the "cash-plus" model successfully addresses immediate nutritional needs by improving household resource allocation and promoting targeted healthy behaviors. The reported increase in the consumption of nutrient-rich foods is vital for combating chronic malnutrition and protecting the critical window of development during the first 1,000 days. The improved health-seeking behavior among mothers (68.6% reported significant improvement) suggests that the program effectively reduced financial barriers to accessing essential healthcare services.

The results of this study align with global evidence that SCTs enhance dietary diversity and food security, with studies such as (Manley et al., 2013, 2020, 2022), demonstrating a 2.1% reduction in stunting. Additionally, in Zambia, the Child Grant Programme reported increased food consumption but noted insignificant effects on stunting (Bonilla et al., 2017; de Groot et al., 2017; Natali et al., 2016; Peterman et al., 2019). Nevertheless, the positive outcomes of the 1000-Days SCT correspond with (Tiwari et al., 2016), who found that consistent transfers improve food quality. However, mixed results regarding growth indicators (Lucas et al., 2008) and the need for complementary interventions (de Groot et al., 2017) indicate that payment delays in the 1000-Days SCT may hinder its nutritional impact, as irregular transfers diminish effectiveness (Wilcox et al., 2024). This indicates the program is perceived as positively influencing maternal dietary habits.

Based on these findings, the author deduced that the 1000-Days SCT program has a positive impact on child and maternal nutrition and health-seeking behavior. The results also indicate that higher SCT payment amounts are associated with improvements in child dietary uptake and maternal dietary diversity, with the size of the SCT payment and the caregiver's educational level serving as key predictors of better dietary outcomes.

Effectiveness in Promoting Gender Equity and Women's Empowerment

The program demonstrated strong outcomes in gender empowerment. Over 88.4% of SCT payments were received by female household heads or spouses, positioning women as primary recipients. Regarding decision-making over the funds, 62.0% reported deciding jointly with their partner, while a substantial 34.3% reported that the woman decided alone. A significant majority (87.5%) reported their overall involvement in household decision-making had increased since the program began. Furthermore, 73.9% of female respondents felt much more or somewhat more confident in making decisions about their children's nutrition and health. Inferential analysis confirmed that the caregiver's education level had a positive and statistically significant effect on women's decision-making authority ($P < 0.001$). thus, the strategic decision to designate women as the primary cash recipients directly translated into economic empowerment and enhanced agency, fulfilling a core objective of the gender-sensitive design. The increased joint decision-making and high confidence levels regarding children's health are crucial, as empowered women typically make better resource allocation choices for child welfare, leading to improved nutritional outcomes for society.

The study findings align with those of other scholars who noted the SCT program that targets women to enhance child well-being (Kirkwood et al., 2021) and empowerment (García-Guerra et al., 2019). Similarly, Bonilla et al. (2017) found that the Child Grant Program improved women's decision-making, though gender norms limit its impact (Natali et al., 2016). Furthermore, other African studies indicate positive qualitative empowerment effects (Galiè et al., 2019), but ongoing cultural barriers present challenges noted in Kenya (Haushofer et al., 2014). Some unexpected effects reported in other studies include women planning new pregnancies and individuals not anticipating the transfers to cease. Specifically, some women, including mothers and mothers-in-law from both intervention and control villages, mentioned hearing of non-beneficiary women getting pregnant in hopes of being included in the program the following year, despite no further cash transfers being planned.

Based on the above findings, the author deduced that the 1000-Days SCT program appears to be contributing to increased women's empowerment and gender equity in Chipata District. The high proportion of female recipients directly receiving the cash benefits seems linked to their economic empowerment and greater equality within the household. While joint decision-making on the use of funds is common, the notable percentage of women deciding alone also points to enhanced agency. The increased confidence among mothers in making decisions about their children's health and nutrition further supports the idea that the program is empowering them in critical areas of family well-being, with this empowerment

strongly correlated with the caregiver's educational attainment.

Critical Success Factors and Areas of Improvement

Critical Success Factors identified qualitatively included strong community involvement (CWACs/local leaders), effective coordination between the program and health/nutrition services (the cash-plus approach), and the predictable nature of the regular bimonthly cash transfers. The focus on early childhood development and nutrition, alongside integrated services (counseling/cooking demonstrations), was highly valued by beneficiaries. Key areas hindering effectiveness and requiring improvement were identified as frequency delays and uncertainty in the disbursement of monies, resistance from some male household members due to gender norms, and the need to scale up nutrition education and male involvement in childcare. Recommendations included shifting to monthly payments and linking beneficiaries to agricultural activities for long-term resilience.

These findings are consistent with other studies that emphasized community engagement and clear targeting as key SCT success factors for the SCT program (Daidone et al., 2015). For instance, Zambia's Child Grant Programme showed regular payments enhance well-being (Seidenfeld et al., 2015), supporting the 1000-Days SCT's findings. However, irregular payments, a noted issue, align with literature indicating they increase stress and reduce impact (Handa et al., 2016). Recommendations for nutrition education and agricultural integration echo Tiwari et al. (2016) and (Richterman et al., 2023), who advocate for multi-sectoral approaches to sustain nutrition gains.

Based on the findings, the author deduced that the 1000-Days SCT pilot project had multifaceted impacts, extending beyond simple cash provision. The "cash-plus" nature, combining financial aid with complementary services, was seen as crucial for addressing the underlying causes of malnutrition and achieving lasting improvements in these vulnerable households. It can be inferred further that factors like strong community engagement, effective coordination with health services, and the integrated support services (nutrition education, cooking demonstrations, health linkages) are key to the program's effectiveness. These elements work together with the cash transfers to promote better health and nutrition practices.

4 Conclusion and Recommendations

4.1 Conclusions

The study concludes that the 1000-Days Social Cash Transfer (SCT) pilot project in Chipata District has achieved its primary goals by demonstrating significant positive impacts on maternal and child nutritional status and women's decision-making power. The cash-plus design, integrating financial aid with nutrition services and community engagement, proved to be a critical success factor, addressing underlying causes of malnutrition beyond mere poverty. Despite encountering challenges such as payment delays and resistance stemming from entrenched gender norms, the program successfully made notable progress toward improved health outcomes and gender equity. The development of a specialized M&E framework, structured around monitoring, evaluation, and learning, is necessary to ensure the accountability, sustainability, and effective scaling of this nutrition-sensitive intervention.

4.2 Recommendations

Based on the study findings and the challenges identified, the following recommendations are proposed to enhance the effectiveness and scalability of the 1000-Days SCT program:

1) Strengthen Community Capacity: Expand training for Community Welfare Assistance Committees (CWACs) and volunteers in data collection and gender-sensitive programming to ensure sustainability and empower local leaders.
2) Integrate Climate-Resilient Strategies: Incorporate climate-smart agriculture training and support households in accessing inputs to mitigate climate shock risks and build household resilience.
3) Enhance Gender Norm Interventions: Scale up community dialogues engaging men and traditional leaders to address entrenched gender norms and promote shared responsibilities in childcare.
4) Leverage Technology: Adopt the use of mobile money and banking services for payment disbursements to reduce delays, ensuring prompt and efficient receipt of funds for beneficiaries.
5) Policy Advocacy: Utilize M&E findings to advocate for national scaling of nutrition-sensitive SCTs, aligning with Zambia's national food and nutrition strategy.

4.3 Recommendations for Future Studies

Long-Term Nutrition Impacts: Investigate the sustained effects of cash transfers on stunting and wasting beyond the 1,000-day window, addressing gaps in the 2020 SCT Pilot's two-year timeframe.

Gender Norm Dynamics: Explore the long-term impact of community dialogues on intrahousehold gender roles, building on qualitative findings from the Child Grant Program (2017).

Declaration of Competing Interests

The authors declare that they are not aware of any competing financial interests or personal relationships that may have influenced the work described in this document.

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Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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