

1 **The effect of trauma counseling support and social protection on enhancing social economic**
2 **resilience in vulnerable communities. A natural experiment in Northern Uganda**

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8
9 **Abstract**

10 *The existing literature on social protection does not sufficiently address the role of traumatic*
11 *experiences in vulnerability and resilience. A failure to address trauma in highly traumatized*
12 *and vulnerable populations could suppress the potential effect of social protection programs.*
13 *This study used a natural experiment (N= 464) to explore the effectiveness of trauma*
14 *counseling and cash/in-kind transfers on enhancing social economic resilience in vulnerable*
15 *communities in Northern Uganda. The results suggest that the effect of trauma counseling is*
16 *more relevant than cash/in-kind transfers in enhancing social economic resilience. This*
17 *research adds to the existing literature by providing insights into underlying vulnerabilities,*
18 *such as trauma, as essential elements to be considered in designing and implementing social*
19 *protection programs in vulnerable communities.*

20
21 **Keywords:** social protection, safety nets, social economic resilience, trauma, Africa, Uganda

22 **JEL:** O10, I15, R1, D69, O550

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25 1 Introduction

26 As a consequence of the war in Northern Uganda, poverty, displacement, and marginalization
27 have dramatically increased, and with it, the vulnerability of communities (Lomo and Hovil,
28 2004a).¹ In many cases, survivors had reached a point of near hopelessness (Lomo and
29 Hovil, 2004a), with high levels of depression and war-related trauma. In addition, symptoms
30 of Post Traumatic Stress (PTS)² and depression are highly prevalent in Northern Uganda
31 (Vinck et al., 2007; Roberts et al., 2008; Nakimuli-Mpungu et al., 2013). When peace talks
32 began in 2006, women demanded support to address the severe trauma sustained (van Reisen
33 et al., 2018). In 2007 a Peace, Recovery, and Development Plan (PRDP) was agreed, in
34 which the various needs, including trauma, were addressed. Nevertheless, the traumatic
35 effects of the war were still present in communities in Northern Uganda in 2016, and many
36 women had not received treatment for PTS (Nakazibwe and van Reisen, 2019). The
37 recognition of trauma as a problem that needed to be addressed was no longer prevalent
38 among aid providers in 2015 (van Reisen et al., 2018), despite the women affected in the
39 region asking for more support to address it (van Reisen et al., 2018). When two elements,
40 depression and PTS, are combined, it disrupts an individual's ability to function socially,
41 interpersonally, academically, and work-wise (Milenkovic et al., 2013). This study explores
42 the effectiveness of social protection programs and psycho social trauma support programs in
43 building social economic resilience when administrated independently. The research was
44 implemented in Northern Uganda, a region that suffered years of armed conflict involving
45 abductions, killings, and displacements by the LRA.³ The study addresses two questions.
46 First, it explores the independent effect of social protection or safety net (cash/in-kind)
47 programs and trauma support programs on social economic resilience. Second, it explores
48 the synergetic effect of receiving trauma relief assistance in conjunction with social
49 protection cash/in-kind assistance. The participants in this research were people suffering
50 from PTS-like symptoms in vulnerable communities in Northern Uganda.

51 Most development studies in sub-Saharan Africa consider social economic protection
52 programs as critical instruments to reduce poverty, strengthen resilience and sustain
53 economic growth. Social protection (cash/in-kind transfers) have significantly enhanced food
54 security and decreased monetary poverty (van Kesteren et al., 2018). However, the
55 intersection between social economic protection and mental health support programmes in the
56 context of vulnerable communities has not yet been sufficiently addressed. Moreover, the
57 high level of existing (and unattended) PTS prevalent among the population of sub-Saharan
58 Africa due to its history of armed conflicts (i.e., the Lord's Resistance Army [LRA] in
59 Uganda, the Somali Civil War, the Rwandan Genocide, and Ethiopian-Eritrean War, among
60 others) is rarely connected by the literature with the social economic protection efforts
61 undertaken by diverse stakeholders.

62 The underlying assumption of social protection programs is that individuals can spend
63 the received economic (or in-kind) support wisely or invest it in their future (Gentilini and
64 Omamo, 2011; Fiszbein et al., 2014). However, the presence of PTS hinders a person's
65 ability to operate rationally in everyday life (Lerner and Kennedy, 2000; Kidane and
66 Stokmans, 2019), exacerbating the cycle of poverty in which vulnerable people can find
67 themselves (World Bank, 2001; Roberts et al., 2008; Gentilini and Omamo, 2011;
68 Milenkovic et al., 2013; Fiszbein et al., 2014; Winkler et al., 2015). This can cause a
69 misalignment of values and objectives at different administrative governance levels, resulting
70 in ambiguous and ineffective programs and policies (Zahariadis and Exadaktylos, 2015).

71 This study examines the problem of misalignment of social protection programs by
72 conducting a natural experiment. The experiment compared pre-existing groups participating
73 in either trauma support programs, social protection safety nets programs, both trauma

74 support and social protection safety net programs, as well as those not receiving any support
75 (control group). The project developed a statistically reliable tailor-made scale to capture the
76 social economic resilience of participants (their perceptions about coping with and recovering
77 from past hazards, such as war). The findings suggest that recipients of trauma counseling
78 support programs improved their social economic resilience significantly.

79 The study contributes to the literature on socio economic development and inclusive
80 growth, as it addresses the question whether a sole focus on economic input for social
81 protection programs is adequate. This study investigates whether trauma, which is common
82 in vulnerable communities in sub-Saharan Africa, affects the social economic integration
83 efforts being undertaken, a connection rarely made in the literature. The findings are
84 expected to be of interest to local and national policymakers and international organizations.

85 The next section (section 2) introduces the key concepts and definitions used in the
86 study, followed by the methodology in section 3. Section 4 describes the research
87 instruments and their reliability. Section 5 presents the results of the empirical analysis;
88 section 6 contains a discussion of the main findings, and, finally, section 7 presents the
89 conclusions and discussion.

90 **2 Key concepts and definitions**

91 This section presents the key concepts and definitions used in the study.

92 **2.1 Vulnerability**

93 Vulnerability is a critical concept used to describe the target groups for social protection and
94 resilience programs. It refers to “conditions that make [individuals or] communities
95 susceptible to harm” (Bergstrand et al., 2015, p. 2).

96 **2.2 Social economic resilience**

97 Resilience focuses on “coping with and recovering from a hazard that has already occurred”
98 (Bergstrand et al., 2015, p. 2). In this study, the unit of analysis is the individual, and social
99 economic resilience is understood as a characteristic related to the individual’s beliefs about
100 coping with and improving their social and economic domain. This definition resembles
101 Bandura’s (1997; 2001) definition of self-efficacy, in which self-efficacy is a person’s belief
102 in their ability to succeed in a particular situation.

103 Although not richly addressed in the literature, there are several indicators developed
104 for social economic resilience (Cutter et al., 2010; UNISDR, 2015; Platt et al., 2016; Khazai
105 et al., 2018). This study used three main components of social economic resilience at the
106 individual level: psychological, social, and economic (van Reisen and Mawere, 2017).⁴ The
107 psychological component encompasses individual abilities conceptualized according to three
108 indicators: ‘capability’ (perceived ability to manage everyday life, to pay bills, get
109 information, and acquire skills (including communication skills), ‘empowerment’ (perceived
110 ability to act independently and out of free will; self-esteem and perceived control over
111 everyday life issues), and ‘worriedness’ (worries about income security, integration or
112 embeddedness in the community, and safety, among other things). The social component is
113 related to social embeddedness with two indicators: ‘social embeddedness’ (perceived
114 embeddedness or integration of an individual with his/her family, his/her community, and the
115 community’s leadership) and ‘trust in the system’ (which captures an individual’s trust in the
116 government, tapping into rights and access to services). The economic component is
117 perceived as ‘income’ security (perceived financial security, financial status, income, and

118 employment opportunities). Figure 1 presents a conceptualization of the indicators of social
119 economic resilience.

120

Figure 1 about here

121 **2.3 Social protection**

122 Social protection is regarded as the human right to receive protection in times of vulnerability
123 (Ulriksen and Plagerson, 2014).⁵ When specifically orientated to the protection of risk-
124 exposed populations, it is defined as “the set of policies, [programs,] and actions which
125 enhance the capacity of poor and vulnerable people to escape from poverty and enable them
126 to manage better risks and shocks” (OECD, 2009, p. 13).

127 In Uganda, social protection refers to public and private interventions that address
128 risks and vulnerabilities that expose individuals to income insecurity and social deprivation⁶
129 (Ministry of Gender Labour and Social Development, 2015). The social protection programs
130 implemented by the Government of Uganda in the last few years have had two pillars: (i)
131 social security (a preventive measure to mitigate income shocks) and (ii) social care and
132 support services (a wide range of services for people living in poverty and vulnerability)
133 (Ministry of Gender Labour and Social Development, 2015). From this perspective, social
134 protection in Uganda is a tool for inclusive development, as it is targeted at vulnerable people
135 and focuses on more than just economic growth (Gupta et al., 2015). Since 2004, social
136 protection has been recognized by the Government of Uganda as an obligation and is
137 included as a component of all national policies (Ministry of Gender, Labour and Social
138 Development, 2011, cited in van Reisen et al. (2019)). It is assumed that social protection
139 programs help recipients to build capacity, allowing them to overcome their vulnerability
140 (National Planning Authority, 2013; Ministry of Gender Labour and Social Development,
141 2015).

142 The empirical literature shows that sufficiently large cash and in-kind transfers,
143 together with regular and reliable payments, are determining factors in ensuring food security
144 (Berhane et al., 2014; Tiwari et al., 2016). Cash transfers are a useful and widely used tool to
145 alleviate short-term deprivation, regularize consumption and reduce the adoption of negative
146 coping strategies, as they immediately boost economic access to food (Burchi et al., 2018).
147 In the case of Uganda, direct income support is the core of the national social protection
148 system and provides regular and reliable, small transfers (cash, cash-vouchers, and in-kind) to
149 vulnerable people and households that can be spent at their discretion.

150 **2.4 Trauma**

151 Trauma refers to psychological injuries that “violate the familiar ideas and expectations about
152 the world of an individual or society, plunging them into a state of extreme confusion and
153 uncertainty” (Aydin, 2017, p. 127). If not treated, these injuries reconfigure a traumatized
154 person’s brain (Kidane and Stokmans, 2019) so that they continue to organize their lives as if
155 the traumatic event is ongoing. This restricts the spontaneous involvement of traumatized
156 individuals in their own lives (Chrousos and Gold, 1992; Tsigos and Chrousos, 2002; van der
157 Kolk, 2014). The repeated or constant activation of the emotional stress response by, for
158 example, cues that trigger traumatic memories is referred to as PTS, which creates a state of
159 constant fear, hopelessness, and even horror (Yehuda, 2002).

160 The strong adverse emotional reaction that accompanies PTS is so overwhelming that
161 individuals with PTS live on an emotional rollercoaster that takes over their daily lives. The
162 literature indicates that traumatic experiences harm a traumatized person’s cognitive
163 processes and functioning (Lerner and Kennedy, 2000; Kidane and Stokmans, 2019). This
164 impacts the person in three ways. Firstly, the negative state affects their decision-making

165 process, as feelings significantly influence their judgment (Schwarz and Clore, 2007; Cohen
166 et al., 2008; Schwarz, 2011; Kidane and Stokmans, 2019; van Reisen et al., 2019). For
167 example, in a negative state of mind, people cannot act on opportunities to enhance their
168 income as they look at the world from a negative perspective. Secondly, PTS reduces the
169 ability to process information (Shiv and Fedorikhin, 1999; Schwarz and Clore, 2007; Cohen
170 et al., 2008; Schwarz, 2011; Kidane and Stokmans, 2019; van Reisen et al., 2019), resulting
171 in feelings being substituted for substantive information, as feelings require less cognitive
172 resources to process (Avent et al., 2012). Consequently, the daily decisions of people
173 affected by PTS are strongly governed by negative feelings and not by (objective)
174 information about (income) opportunities. Thirdly, the strong uncontrollable negative
175 emotions that accompany PTS result in the belief that one has no control over one's own life
176 or environment. Such beliefs reflect low self-efficacy, and people with low levels of self-
177 efficacy tend to give up very quickly (Bandura, 1997; 2001).

178 **3 Methodology**

179 This research explored the effect of trauma support programs, as an element of social
180 protection programs, to achieve reintegration and empowerment while addressing vulnerable
181 communities. The project ran from 2015 to 2017 in Northern Uganda, a region that suffered
182 years of armed conflict involving abductions, killings, and displacements by the LRA.⁷ The
183 data analysis reported in this paper pertains to the study's first wave conducted from March
184 to May 2016. The research design follows a mixed method in a natural experiment
185 (Leatherdale, 2019). A natural experiment investigates a treatment or intervention in a real-
186 life situation. The study was implemented as a Posttest-Only Control Group Design, in which
187 there were four groups, one of which did not receive any treatment -the control group (Frey,
188 2018).

189 The research used two scales to measure PTS and social economic resilience of the
190 populations studied: the Impact of Events Scale-Revised (IES-R) and the Social Economic
191 Resilience (SER)-scale respectively. The IES-R is a cross-culturally validated tool (Horowitz
192 et al., 1979; Weiss and Marmar, 1997; Motlagh, 2010), which allows an assessment of the
193 degree of traumatic stress, but is not a diagnostic tool of PTSD. The IES-R and SER scales
194 were administered during the research period and, therefore, after study participants had
195 participated in psycho-social trauma support programs, but while they were receiving social
196 protection cash/in kind support, which started at least during the last year before the data
197 were collected.

198 The study included 465 respondents. The respondents were asked to respond to the
199 questionnaire. The questionnaires for both scales were read to the respondents in their local
200 language by 20 trained interviewers. This data was prepared for statistical analysis and
201 processed in a way that ensured the anonymity of the respondents. The research was
202 complemented with semi-structured interviews (n= 20), of which the participants were
203 randomly selected from the 465 respondents. The interviews were analyzed with an open
204 coding-labeling technique (Nakazibwe and van Reisen, 2019). A detailed description of the
205 research procedure is described in van Reisen et al. (2018) and Kidane (2021).

206 The study received the approval of local authorities in all of the sites where the research
207 was conducted, as well as the NGO, Isis-WICCE and its local subsidiaries. Arrangements
208 were made with local providers of psycho-social support and mental health clinics to follow
209 up on any participants identified by the team as in need of additional support. Ethical
210 clearance was obtained through the University of Mbarara (letter Dec 4, 2017) and Tilburg
211 University (REC 2017/16, REDC# 2020I01). The participants were asked to give written
212 consent for participation in the study.

213 3.1 Research questions and hypotheses

214 The research addresses the following two questions: (i) Do social protection (cash/in-kind
215 transfers) and trauma support programs enhance social economic resilience? (ii) Do trauma
216 support programs enhance the effect of cash/in-kind transfers on social economic resilience?
217 These questions are addressed by three hypotheses: (i) social protection (cash/in-kind
218 transfers) have a positive effect on social economic resilience; (ii) psycho-social trauma relief
219 programs have a positive effect on social economic resilience; and (iii) psycho-social trauma
220 support programs enhance the effect of social protection (cash/in-kind transfers), interaction
221 effect, on social economic resilience.

222 3.2 Study sites

223 The research was undertaken in four districts: Kitgum, Lira, Katakwi, and Amuria, which the
224 Government of Uganda classifies as areas affected by the armed rebellion and part of the
225 Uganda Peace Recovery and Development Plan. The research team collaborated with the
226 Non-Governmental Organisation (NGO) Isis-Women's International Cross-Cultural
227 Exchange (Isis-WICCE), which provided trauma support in the following sites: (i) Kitgum
228 through Kitgum Women Peace Initiative (KIWEPI), (ii) Lira through Women Peace
229 Initiative-Uganda (WOPI-U), and (iii) Katakwi and Amuria through Teso Women Peace
230 Activists (TEWPA). The selection of districts allowed the sample to represent different
231 ethnic groups living in Northern Uganda, i.e., Acholi, Langi, and Teso. Table 1 presents
232 basic information on the study sites.

233 **Table 1 About here**

234 3.3 Social protection cash transfer and psycho-social trauma support programs

235 The social protection cash/in-kind transfer programs analyzed in this research were provided
236 by the Government of Uganda under the National Direct Income Support Program. During
237 the field research period, specific programs were running in the research locations, namely:
238 (i) Uganda National Agricultural Advisory Services (NAADS) I and II through a Household
239 Income Support Program (HISP); (ii) Northern Uganda Social Action Fund (NUSAF); (iii)
240 Uganda Social Assistance Grants for Empowerment (SAGE); (iv) restocking program; (v)
241 Community-Driven Development Program (CDDP); (vi) Uganda Women Entrepreneurship
242 Programme (UWEP), and (vii) Youth Livelihood Program (YLD). These programs provide
243 unconditional regular cash/in-kind support to individuals to guarantee a minimum income.⁸

244 The psycho-social trauma support programs included in the research took a non-
245 medical approach to deal with PTS, working with self-help groups to support women to
246 achieve healing through collective counselling. All of them had a theatre component as a
247 means of counseling, followed by public dialogue and debate on the issues addressed,
248 allowing the participants to talk about their trauma and receive support (van Reisen et al.,
249 2019). Another common element was the inclusion of religious leaders in the trauma support
250 programs. Their presence emphasized the need for forgiveness and contributed to
251 understanding and acceptance (van Reisen et al., 2019).

252 The approach used by Isis-WICCE breaks the isolation of war survivors by organizing
253 women-friendly spaces in which women can share their experiences, pain, and the ordeals
254 they have gone through, as well as how they have coped (and are coping). This enables
255 women to speak out and counsel each other. Isis-WICCE has also organized specialist-
256 facilitated training for selected women leaders and health workers from affected districts on
257 trauma management. This has enabled the leaders and health workers to understand what
258 PTS does to a person and gain skills to identify and manage PTS at the individual, family,

259 and community level. On returning to their communities, the trained women leaders support
260 women who have returned from captivity or been affected by the war. Their programs are
261 firmly anchored in the communities involved to enhance ownership of the program. Such an
262 informal coaching trajectory teaches the participants to understand and control the strong
263 emotions they are experiencing due to PTS.

264 **3.4 Selection of participants**

265 All study participants were female, of which 87% were farmers. The selection of female
266 respondents was made, as women and girls are among the most vulnerable groups affected by
267 the armed conflict. During the conflict, they were abducted, [gang-]raped, maimed,
268 [sexually] enslaved, forced to enlist, and their property looted (Nakazibwe and van Reisen,
269 2019). Local authorities⁹ provided the researchers with a list of women participating in the
270 different social protection (cash-in kind transfers) programs in the study areas, and the NGO,
271 Isis-WICCE, provided the researchers with a list of persons that had participated in the
272 psycho-social trauma support programs it implemented in the Northern Uganda region.

273 Based on the information about social support provided by local authorities and Isis-
274 WICE, respondents were assigned to one of four groups: (i) recipients of social protection
275 (cash/in-kind transfers) only; (ii) recipients of psycho-social trauma support program only;
276 (iii) recipients of both social protection (cash/in-kind transfers) and psycho-social trauma
277 support; and (iv) a control group in which no financial support or psycho-social trauma
278 support was given. Table 2 presents the geographic location of participants over the four
279 groups.

280 **Table 2 About here**

281 The control group consisted of participants who did not participate in any program and
282 who were in the vicinity of locations where the study was conducted.

283 **3.5 Descriptive characteristics of respondents**

284 The average age of the respondents was 42 years (SD 15.55). An analysis of variance (one-
285 way ANOVA) shows that the treatment groups differ in ages ($F(3,459)=5,52, p< 0,05$). On
286 average, the members who only received social protection (cash/in-kind transfers) were
287 significantly older than the members of the other groups. Most respondents had only
288 attended primary school or had never been to school. The Chi-square test revealed that
289 education levels were not equally distributed across the treatment groups (Chi-square =
290 20,08, SD = 9, $p< 0,05$). The two groups that received psycho-social trauma support had a
291 slightly higher education. **Error! Reference source not found.** shows that most respondents
292 were farmers, and a Chi-square test revealed that occupations were also not equally
293 distributed across the treatment groups (Chi-square = 18,71, $df = 9, p< 0,05$). Participants of
294 the two groups who received psycho-social trauma support were more likely to have a
295 business (about 10% compared to about 4% of the group that only received social protection
296 (cash/in-kind) support and 3% for the group that received no support at all). Most participants
297 were married and part of a male-headed household. The Chi-square test found that marital
298 status was similar across the four different groups (Chi-square = 10,96, $df = 9, p> 0,10$).

299 **Table 3 About here**

300 **4 Research instruments**

301 Two instruments were used for the quantitative part of the research, the IES-R and SER-tool,
302 which are discussed below.

303 **4.1 Impact of Events Scale-Revised**

304 The IES-R was used to test the assumption of this research that the study sample consisted of
305 people with PTS. The original IES is the most widely adopted measure of PTS (Horowitz et
306 al., 1979). In this study, the revised version of the scale, the IES-R (Weiss and Marmar,
307 1997; Motlagh, 2010), was used, as it also includes hyperarousal items (a major symptom
308 cluster of PTS). According to Creamer et al. (2003), test-retest reliability ($r = 0.89$ to 0.94)
309 and internal consistency (Cronbach's) for each subscale of the IES-R is good (intrusion =
310 0.87 to 0.94 ; avoidance = 0.84 to 0.897 ; hyperarousal = 0.79 to 0.91).¹

311 The IES-R consists of 22 items grouped into 3 subscales: 'intrusion' (with 8 items),
312 'avoidance' (with 8 items), and 'hyperarousal' (with 6 items). Participants were asked to
313 report the degree of distress experienced during the last seven days on a five-point scale: not
314 at all (0); a little bit (1); moderately (2); quite a bit (3); and extremely (4). Internal
315 consistency was high for each of the three subscales in this study (intrusion: 0.948 ;
316 avoidance: 0.916 ; hyperarousal: 0.951).

317 Following Weiss and Marmar (1997), Creamer et al. (2003), and Motlagh (2010),
318 instead of adopting the raw sum, the research adopted the sum of the means of each subscale,
319 resulting in a minimum value of 0 and a maximum of 12. The higher the value, the higher
320 the level of PTS-like symptoms.

321 **4.2 Social Economic Resilience Scale**

322 The Social Economic Resilience (SER) scale was used to provide an index of the
323 multidimensional construct of social economic resilience. This scale was developed for the
324 project and inspired by the literature on ecological (Gunderson, 2000), community (Paton and
325 Johnston, 2001; Norris et al., 2008), and economic (Hallegatte et al., 2016) resilience and the
326 sustainable livelihood framework of (Mensah, 2012). The items in the SER scale were
327 adapted to the research population in this study, who are traumatized and vulnerable women
328 living in Northern Uganda. In addition, the scale was tested in a pilot study to check the
329 relevance and comprehensibility of the scale items and adapted accordingly.

330 The SER scale consists of 6 subscales: (i) 'capability' (with 6 items); (ii)
331 'empowerment' (with 12 items); (iii) 'worriedness' (with 10 items); (iv) 'social
332 embeddedness' (with 5 items); (v) 'trust in the system' (with 2 items); and (vi) 'income
333 security' (with 13 items). The SER scale makes use of the Likert scale, ranging from 1
334 (strongly disagree) to 5 (strongly agree)². Table 4 presents the main aspects captured by the
335 SER scale.

336 **Table 4 about here**

337 **4.3 Reliability of scales**

338 The reliability of the scales was tested by conducting Cronbach's alpha tests. See Equation
339 (1), where k = the number of items; \bar{c} = the average of all covariance between item-pairs;
340 and, \bar{v} = the average variance of each item.

341 **Equation (1): Cronbach's alpha test**

342
$$\alpha = \frac{(k * \bar{c})}{(\bar{v} + (k - 1) * \bar{c})}$$

343
344 The corrected item-total correlation indicated that only two items in the 'worriedness'
345 subscale did not meet the lower limit of 0.35 and, hence, were excluded from the scale,

346 leaving eight items. The subsequent Cronbach's alpha test (see Table 5, row 1) shows that
347 the 'social embeddedness' and 'worriedness' scales were less homogeneous than the rest,
348 although exceeding the lower limit acceptability with a value of above 0.70, indicated by Hair
349 et al. (2014).

350 **Table 5 about here**

351 Table 5 shows that the 'social embeddedness' and 'worriedness' subscales are not correlated
352 with the other scales ($p < 0.05$). The 'capability' subscale is correlated with the 'income
353 security,' 'empowerment,' and 'trust in the system' subscales ($p > 0.05$). Empowerment is
354 correlated with 'income security' and 'trust in the system'.

355 **4.4 Analysis of covariance**

356 The relatively low correlations between the SER subscales justified conducting an ANCOVA
357 separately for each of the subscales to explore the effect of cash/in-kind and trauma relief
358 programs on social economic resilience and controlling for age, educational level, and
359 employment. ANCOVA is an extension of the analysis of variance (ANOVA) to
360 accommodate independent metric variables. ANCOVA tests differences between groups. It
361 provides a tool to judge whether or not the observed effects are due to a treatment effect (Hair
362 et al., 2014). ANCOVA is represented in equation (2), where Y is metric dependent
363 variables, and X is a mixed set of independent, categorical (non-metric) and metric variables.
364 Equation (2): $Y_1 = X_1 + X_2 + X_3 + \dots + X_n$

365 **5 Results**

366 **5.1 Prevalence of PTS**

367 The study found the presence of intense symptoms related to PTS in about 83% of the
368 sample, as shown in Table 6.

369 **Table 6 about here**

370 The mean scores on each subscale of the IES-R for each group indicate that PTS symptoms
371 are high in all groups (IES-R total > 7). Table 6 shows that on the one hand, the group that
372 received trauma relief (with or without social protection (cash/in-kind transfers)) recorded the
373 lowest scores for the mean IES-R. On the other hand, the four groups of participants did not
374 significantly differ in the trauma levels experienced. The level of PTS that was experienced
375 was significantly related to age (i.e., older persons presented with higher levels of trauma),
376 level of education (the lower the education level, the higher the stress level), and employment
377 (women with a business scored highest in terms of stress level). Consequently, these
378 variables were included in the analysis of covariance (ANCOVA) to explore the effect of
379 social protection cash/in-kind transfers and psycho-social trauma support programs. Table 7
380 summarizes the findings for the SER scale.

381 **Table 7 about here**

382 Column 1 indicates that, overall, the participants had a positive attitude towards their
383 community and family ('social embeddedness'), a neutral position on 'income security',
384 'empowerment', and 'trust in the system', and a negative perception of their 'capability' and
385 'worriedness' (i.e., the participants showed high levels of worriedness). Columns 2 to 5 in
386 Table 7 present the SER statistics by subscale for each of the four groups analyzed in this
387 study. The results show that the groups scored similarly on the 'social embeddedness'
388 subscale. The (contole) group that participated in neither of the programs (i.e., psycho-social
389 counseling nor social protection (cash/in-kind transfers)) scored the lowest on the
390 'capability', 'income security' and 'empowerment' subscales. The group receiving only

391 psycho-social trauma counseling (column 3) had the lowest scores on ‘trust in the system’
392 and ‘worriedness’. In the next section, we will test the differences between the groups to
393 explore the effectiveness of social protection (cash/in-kind transfers) and psycho-social
394 trauma counseling in enhancing social economic resilience.

395 **5.2 Results of effects of interventions**

396 Table 8 presents the results of two (cash/in-kind: yes/no) by two (trauma relief: yes/no)
397 ANCOVAs regarding the subscales of the SER scale when taking age, education level, and
398 employment into account.

399 **Table 8 about here**

400 No significant difference ($p>0.10$) was found between the groups in relation to ‘social
401 embeddedness’ (column 2) and ‘capability’ (column 3). In the case of ‘income security’
402 (column 4), trauma support had a significant positive effect. The results indicate that cash/in-
403 kind transfers and trauma support significantly positively affect ‘empowerment’ (column 5).
404 In the following, we will explore each of the research hypotheses.

405 **5.3 Hypothesis 1. Do cash/in-kind transfers have a positive effect on social economic** 406 **resilience?**

407 The study found that cash/in-kind transfers had a significant effect on ‘empowerment’ (see
408 **Error! Reference source not found.** 8 column 5), and on ‘worriedness’ (column 7). The
409 effect on empowerment is positive, reflecting a more positive attitude towards having control
410 over one’s life. . However, receiving cash/in-kind transfers increased the level of worriedness.
411 Receiving cash/in-kind transfers did not significantly affect the subscales for ‘social
412 embeddedness’, ‘capability’, ‘income security’, and ‘trust in the system’. The lack of effect
413 on ‘capability’ and ‘income security’ is contrary to the assumption that cash/in-kind transfers
414 provide people with money and opportunities to build a better life.

415 **5.4 Hypothesis 2. Do psycho-social trauma support programs have a positive effect on** 416 **social economic resilience?**

417 The ANCOVA revealed a significant effect of trauma relief programs on ‘income security’,
418 ‘empowerment’, and ‘trust in the system’ (see Table 8, columns 4, 5, and 6). The study
419 found that receiving psycho-social trauma support had a positive effect on ‘income security’
420 (i.e., greater ability to generate, save, and administrate money), ‘empowerment’ (a positive
421 attitude towards having control over one’s life), and ‘trust in the system’ (greater trust in the
422 system and belief in justice or access to it). Receiving trauma support did not affect ‘social
423 embeddedness’, ‘capability’, and ‘worriedness’. The lack of an effect on ‘capability’ and
424 ‘worriedness’ is contrary to this research’s expectations.

425 **5.5 Hypothesis 3. Do trauma relief programs enhance the effect of cash/in-kind** 426 **transfers (interaction effect) on social economic resilience?**

427 This hypothesis relates to the interaction effect between cash/in-kind transfers and psycho-
428 social trauma relief programs in an ANCOVA and directly tests the existence of the
429 synergetic effect of providing both trauma relief and cash/in-kind transfers to traumatized
430 people. The study found no significant interaction effect for any subscales except

431 ‘worriedness’ (Table 8 column 7). However, the interaction effect for ‘worriedness’ was not
432 as expected: receiving both cash/in-kind transfers and psycho-social trauma support did not
433 decrease but instead increased the level of worry.

434 **5.6 Interviews**

435 Participants, who were not treated for PTS, confirmed during semi-structured interviews that
436 they experienced high levels of trauma and that this was hindering their mental health and
437 social economic resilience. Participants who participated in psycho-social trauma-support
438 programs testified to their relevance and were more positive in setting out their engagement
439 in social and economic activities in the community. The interviews confirm the statistical
440 findings. Detailed qualitative analyses are described in van Reisen et al. (2018) and
441 Nakazibwe and van Reisen (2019).

442 **6 Conclusions**

443 This study is a natural experiment posttest-only control group design, in Northern Uganda to
444 comparatively study the effects of social protection (cash/in-kind programs) and psycho-
445 social trauma support on social economic resilience, addressing the vulnerability of highly
446 traumatized populations in Uganda. The study focused on female participants affected by the
447 war in Northern Uganda with the Lord Resistance Army. Three hypotheses were formulated
448 for the investigation conducted for this study on the positive effects of social protection
449 (cash/in-kind programs) and psycho-social trauma support programs each and in their
450 combined effect. The results show that the social protection interventions (cash/in-kind
451 transfers) and trauma-support are rendering significant positive results on social economic
452 resilience.

453 The findings confirm the critical role of cash/in-kind transfers in Uganda in enhancing
454 food security and decreasing monetary poverty found in other studies (see Gilligan et al.
455 (2009); Veras Soares and Teixeira (2010); Merttens et al. (2013); Berhane et al. (2014);
456 Daidone et al. (2014); Hidrobo et al. (2018). For this study, the construct of ‘resilience’ was
457 defined as perception of the ability to succeed in a particular situation. The level of
458 investment in social protection policies and programs and their effect on health and inequality
459 has been analyzed by Dahl and van der Wel (2013), Avendano et al. (2015), and Reeves et al.
460 (2014). O'Campo et al. (2015) found that government investment in social protection reduces
461 the financial strain and psychosocial stress of the most disadvantaged people in society.

462 This study revealed that social protection (cash/in-kind transfers) could enhance one
463 aspects of social economic resilience, namely ‘empowerment’ (more positive beliefs about
464 having control over one’s life). The study found a no significant effect on ‘capability’ and
465 ‘income security’ (perceived income security). This can be explained by attribution theory
466 (Heider, 1958; Miller and Norman, 1979). Receivers of transfers may have attributed life
467 being less harsh to an external factor – the cash transfers received from the government – and
468 may not necessarily believe that their capability to cope with life has increased due to receipt
469 of the cash transfers. They may even feel dependent on these external funds and,
470 consequently, may not believe that their income position is secure. Concerns about the
471 dependency of beneficiaries of social protection (cash/in-kind transfers) have existed since
472 the origins of this type of programs (Gentilini and Omamo, 2011).

473 The study found a negative and significant effect of receiving social protection
474 (cash/in-kind transfers) on ‘worriedness’. This finding underlines that the participants may
475 feel dependent on these external funds and according to prospect theory, this can trigger
476 negative emotions such as worriedness (Kahneman and Tversky, 1979). Prospect theory
477 argues that losses loom heavier than gains and suggests that the risk of losing the external

478 funds causes negative feelings that are more intense than the positive feelings associated with
479 getting the funds. Those receiving transfers feel dependent on these transfers and worry
480 more, not about the past, but their current social and financial situation (losing the transfers).
481 This phenomenon relates to the participants' perceived lack of self-efficacy. This negative
482 self-perception is not addressed by traditional social protection (cash/in-kind transfers)
483 programs, but it is addressed in psycho-social trauma relief programs.

484 The positive and sustainable effects of social protection programs are based on the
485 assumption that individuals make rational decisions to spend transfers wisely and invest in
486 their future. This logic is reflected in social economic resilience, which taps into an
487 individual's belief in their ability to cope with and overcome the effects of a hazard in the
488 social and economic domains. However, the presence of PTS hinders the ability of an
489 individual to operate rationally in everyday life (Kidane and Stokmans, 2019; Lerner and
490 Kennedy, 2000), exacerbating the cycle of poverty that vulnerable people can find themselves
491 in (World Bank, 2001; Roberts et al., 2008; Gentilini and Omamo, 2011; Milenkovic et al.,
492 2013; Fiszbein et al., 2014; Winkler et al., 2015). Trauma relief programs address the
493 negative emotions triggered by PTS and, in addition, enhance the sense of control over one's
494 live (Kidane, 2021).

495 This research indicates that trauma relief programs positively affect perceptions of
496 'income security', 'empowerment', and 'trust in the system'. Given the short duration of the
497 psychosocial trauma relief programs that were studied, it is remarkable that these effects
498 were, in fact, detected. A psycho-social trauma relief program assumes that by reducing the
499 impact of trauma, people will start believing that they can control their lives and, as a
500 consequence, experience enhanced resilience in the social and economic domains. However,
501 this process takes time, especially if people have severe PTS, as is the case for the
502 participants in this study. The lack of effect on the indicators 'social embeddedness',
503 'capability', and 'worriedness' could be due to the relatively short period between the
504 implementation of the psycho-social trauma relief program. This is confirmed by a recent
505 study about the lagged effect of trauma relief programs (Stokmans and Baluka, 2020).

506 This study also looked at the synergetic effect of receiving both psycho-social trauma
507 relief and social protection (cash/in-kind transfers), it was hypothesized that receiving both
508 types of programs would enhance the effect of cash/in-kind transfers on social economic
509 resilience. However, such an interaction effect was not detected. This fits with the
510 observations in the literature that social protection safety net programs, particularly those
511 studied with a case study research design approach, fail to detect positive effects (Berhane et
512 al., 2014; Tiwari et al., 2016). This may be partly due to the kind of design used. In a natural
513 experiment (or a case study), the researcher cannot exclude or control all other variables that
514 may affect the effect variable being studied, (Craig et al., 2017; Leatherdale, 2019) such as
515 the SER scale. In this study, we used a 'regression adjustment' approach (Craig et al., 2017)
516 using an ANCOVA to compare the SER scores of different treatment groups and controlling
517 for individual characteristics that differed between the groups.

518 Despite its short duration, this study unexpectedly found a significant and negative
519 interaction effect of cash/in-kind transfers and trauma relief programs on worriedness:
520 receiving cash or in-kind transfers and trauma relief programs increased the level of
521 worriedness reported. This study reported an unexpected negative effect of social protection
522 (cash/in-kind) on income security, and the interaction effect suggests that trauma relief
523 programs enhance this negative effect. This result could be attributed to an increased
524 awareness of vulnerability and dependency on the social protection support (cash/in-kind
525 transfers) due to a decrease of acute PTS-like symptoms, which were addressed in the
526 intervention of psycho-social trauma support. This increased awareness can trigger negative
527 emotions such as worriedness according to prospect theory (Kahneman and Tversky, 1979).

528 The previously mentioned study about the lagged effect of trauma relief programs and
529 cash/in-kind transfers, which uses a pre-post approach, did not reveal interaction effects
530 between cash/in-kind and trauma relief programs (Stokmans and Baluka, 2020). In addition,
531 Kidane's studies (Kidane and Stokmans, 2019; Kidane, 2021), which used a within-subject
532 (repeated measurement) design and another trauma relief program, also failed to detect
533 interaction effects. These findings, therefore, suggest that a synergetic effect between social
534 protection (cash/in-kind transfers) and trauma support counseling could not be expected in
535 situations where the amount of the social protection (cash/in-kind transfers) delivered to
536 vulnerable persons is small.

537 Important caveats in the study are related to the nature of the setting itself. First, the
538 research sample consisted of only women from selected districts in Northern Uganda.
539 Second, the study was conducted in a setting where several social protection programs and
540 trauma relief programs were running and, consequently, had to use a natural experiment in
541 which the control of confounding factors is limited compared to a true experiment. Moreover,
542 as the effect of existing interventions was studied, detailed information about the
543 interventions, such as the kind and exact amount of social protection (cash/in-kind transfers)
544 received and exact procedure used in the psycho-social trauma relief programs, is missing
545 (Craig et al., 2017). It is expected that all these programs differ in nature, duration,
546 frequency, intensity, modality, quality of implementation, and procedures. These differences
547 blur the detected effect of the intervention as none of these characteristics were controlled in
548 the study. The research in a natural setting may have depressed the effects that may have
549 been found in a more controlled setup. However, the natural setting in which the research
550 took place does increase the reliability of findings in terms of reflecting a real-life situation.
551 Overall, the findings of the research can only attest to general tendencies, and further analysis
552 or replication would be required to confirm the insights revealed.

553 7 Discussion

554 The study has important implications for considerations regarding mental health and social
555 protection interventions in post-conflict settings, particularly in Uganda and sub-Saharan
556 Africa. Mindful of the caveats outlined above, the following suggestions can be offered from
557 the study's findings. Firstly, this study indicates that psycho-social trauma support programs
558 have a significant effect on social economic resilience that is more positive compared to
559 social protection (cash/in-kind transfers), even if the trauma program is of short duration.
560 Therefore, the findings of this study strongly suggest that trauma relief programs should be
561 included in social protection programs that target highly traumatized vulnerable populations.

562 The study's findings further suggest that, if a choice between programs needs to be
563 made, support for psycho-social trauma relief programs in highly traumatized communities
564 should be prioritized over social protection transfers. This is because trauma interventions
565 require less financial support, and they have a significantly positive effect on the social
566 economic resilience of the participants, and do not enhance the feeling of dependency on
567 external funds.

568 These conclusions suggest a need to develop interventions that adapt to the local
569 population's characteristics, culture, and preferences. Developing such interventions in
570 consultation with the local community and within the existing government, structures would
571 enhance the community's sense of ownership and facilitate implementation and benefits. In
572 this study, the trauma relief programs were firmly anchored in the communities involved and
573 created a social learning environment where community members shared knowledge and
574 skills about trauma handling.

575 **Notes:**

576 ¹ See Lomo et al. (2001), Lomo and Hovil (2004a; 2004b), and Quinn (2009) for an overview
577 of Uganda's armed conflicts as well as its consequent refugee and internally displaced
578 persons (IDPs) crisis.

579 ² This study adopts the term Post Traumatic Stress (PTS) rather than Post Traumatic Stress
580 Disorder (PTSD) following the current debate in the mental health practitioners where it is
581 argue that by adding the D to the term carries out stigma and vulnerability . Therefore, even
582 if PTSD remains the official diagnostic term, the study adopts the term PTS joining the
583 ongoing movement of mental health awareness.

584 ³ More on the history of the conflict in Northern Uganda and the Lord's Resistance Army can
585 be found in Lomo et al. (2001); Lomo and Hovil (2004a; 2004b); Mukwana and Ridderbos
586 (2008); Quinn (2009), among others.

587 ⁴ These are the three components considered in the formulation of the SER scale

588 ⁵ There is a diversity of social protection typologies and frameworks, but this is outside the
589 scope of this paper.

590 ⁶ Understood as those individuals who are disadvantaged and have restricted access to social
591 resources. See <https://www.poverty.ac.uk/world/uganda> for a more detailed description.

592 ⁷ Women have also been key players in the process of peace in the region. (see van Reisen
593 (2015).

594 ⁸ See van Reisen et al. (2018, pp. 125-135) for further details on these programs.

595 ⁹ The local authorities, also referred to as community development officers and district
596 officers, provided the project with authorization to perform the natural experiment and the list
597 of individuals participating in cash/in-kind transfer programs in the study areas
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