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Empowerment resources, decision-making and gender attitudes: which matter most to livestock keepers in the mixed and livestock-based systems in Ethiopia?

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Abstract

Background: Women's empowerment constitutes an important aspect of the development agenda. Although it is highly contextual in nature, empowerment literature so far has focussed on identifying factors associated with empowerment, neglecting the importance of understanding which empowerment resources and agency dimensions are more important for whom and under what contexts. This is important, because we cannot talk of empowerment for those who are not in a disempowered condition or who do not value it. We examine the gender differences in the relative valuations of empowerment resources and decision-making areas across different farming systems, and examine the most valued empowerment resources.

Methods: Using a mixed methods approach, data on major household decisions, empowerment resources, and their relative importance were collected. Pairwise ranking methods were used to assess their gendered relative importance. Individual interviews using Ryff's psychological well-being (PWB) items were conducted to obtain quantitative data on the key empowerment resource, which emerged as an important aspect of empowerment from the pairwise ranking exercises. Drawing on the empowerment framework and self-determination theory, we analysed the data.

Results: Our results show that the major empowerment resources and decision-makings that are valuable to men and women vary across gender and farming systems. In general, men place a greater importance on decisions about livestock, crop and finances. The women valued decisions regarding crop, livestock and social relations. Regarding empowerment resources, psychological well-being was found to be one of the most important resources, for women as well as men. Assessment of the basic psychological needs—autonomy, self-acceptance, and positive relations—statistically yielded no significant differences between the gender groups. However, the effects of location and the intersection of location with gender were both found to be statistically significant, suggesting that being men and from Horo is associated with higher scores on self-acceptance and personal relation subscales.

Conclusions: We conclude that gender and location play important roles in forming contextual conditions for empowerment and agency implying that empowerment efforts need to consider both. More specifically, policies and intervention efforts to empower individuals or groups must begin by first building their psychological assets and consider contextual gendered perceptions of resources.

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Keywords: Gender, Decision-making, Empowerment resources, Psychological Wellbeing, Ethiopia

Introduction

Empowerment is conceptualised as a multidimensional construct (Jones et al. 2019; Malhotra et al. 2002) and defined as a process (Cornwall and Edwards 2010; Kabeer 1999) through which an individual achieves valued goals (Robeyns 2003). It is a process of change, whereby people obtain the ability to make choices that they were unable to make previously and attain their aspirations. Kabeer (1999, p. 437) defines it as ‘[...] the expansion in people’s ability to make strategic life choices in a context, where this ability was previously denied to them.’ Three elements can be noted in the definitions above. First, empowerment is assumed to be a process that occurs over time. Second, agency is explicitly referred to as a core component of empowerment. Third, empowerment fundamentally concerns the power imbalances between men and women, brings attention to women’s powerlessness, and underlines restoration of that power as an important development objective.

The definitions above suggest that to empower someone, it is necessary to identify not only the disempowering factors but also understand which empowerment resources and agency dimensions are more important for whom in the first place. Empowerment resources encompass human, economic, material, social, informational, and psychological assets (Alsop et al. 2006), while agency is tied to the different types of decisions made. Measuring empowerment is meaningless unless it is accompanied by assessment of the relative importance attached to the different empowerment resources and agency dimensions by those affected. In addition, before implementing empowerment interventions it is crucial to understand the social contexts and the value of empowerment resources and major decisions, including how these vary across genders and farming systems. Such insights can help measure empowerment more accurately and tailor interventions to the needs of the target group. The objectives of this study are twofold: examine the gender differences in the relative valuations of empowerment resources and decision-making areas across different farming systems, and examine the most valued empowerment resources by men and women based on self-assessment data.

Women’s empowerment: frameworks, indicators and context

Feminist conceptualisations of empowerment centre on gender power relations and base their defining elements

on the process of challenging existing unequal power relations so that the powerless actors are capacitated to gain greater control over the sources of power (Alsop et al. 2006). The analysis of power is the basis for assessing empowerment, particularly agency. Agency refers to decision-making (Kabeer 1999). Indicators of agency in empowerment literature are related to the five dimensions of power—*power over*, *power within*, *power to*, *power with*, and *power through*. These are defined as the extent of control over others, power over, (Alsop et al. 2006); control over resources (power to) (Samman and Santos 2009); autonomy and ability to change anything in life (power within) (Ibrahim and Alkire 2007; Samman and Santos 2009); ability to change anything within the community to meet collective interests (power with) (Samman and Santos 2009), and achieving goals or acting through others as a result of one’s relationships (power through) (Galiè and Farnworth 2019). Malapit et al. (2019) further categorized agency into three categories, being intrinsic agency (autonomy in income, self-efficacy, attitudes about intimate partner violence against women, respect among household members), instrumental agency (input in productive decisions, ownership of land and other assets, access to and decisions on financial services, control over use of income, work balance and visiting important locations) and collective agency (group membership, and particularly membership in influential groups).

Three inter-related dimensions of empowerment are commonly noted in empowerment literature: preconditions (resources and opportunity structure), agency, and achievements; all three are necessary to balance power relations and empower the powerless (Kabeer 1999). In assessing empowerment, the empowerment framework highlights the need to examine these three dimensions. In other words, the framework examines the degree of empowerment (Alsop et al. 2006). First, it measures the existence of choice—whether an opportunity to make a choice exists. Second, it measures the use of choice—whether a person or group is actually able to exercise choice. Last, it measures the achievement of choice—whether the choice brings about the desired action or outcomes. The analysis of degrees of empowerment as a continuum is useful for prioritising and operationalising interventions to direct efforts at the important component/s so that empowerment can be realised.

Empowerment literature suggests a number of indicators of empowerment. The most frequently used indicators at the individual and household levels are domestic

decision making, access to control over resources, mobility/freedom of movement, attitudes, and perceptions (Mahmud and Tasneem 2014; Malhotra et al. 2002). A review of the literature by Malhotra et al. (2002) also found that there are a number of less frequently used indicators of empowerment achievements at the individual and household levels, including economic contribution to household, freedom from violence, knowledge, public space, marriage/kin/social support, couple interactions, being appreciated at home, and sense of self-worth. However, little is known about how men and women value them across the different contexts. This paper contributes to this gap by examining the level of importance placed by men and women on the different areas of empowerment resources and decision-making by adopting a mixed methods approach.

Empowerment and social context

The two dimensions of power, *power within* and *power with*, are associated with social context and shape 'true interests' (Lukes 1974, p. 149). Lukes (1974) believes that powerless people are not only incapable of perceiving their 'true interests' as they are mentally molded in such a way that they remain unaware of it through the indoctrination of what he calls 'false consciousness', indicating the importance of the relationship between power and knowledge in the conceptualisation of power. True consciousness about the self and the world around possibly leads to collective action, *power with*, and self-confidence, *power within*. In turn, participation in collective action provides powerless people with the opportunity to develop their consciousness, outlook, and *power within*. Such a process helps people acquire the ability to negotiate with those who denied them power and influence the nature of the relationship and the decisions made within it. Lukes examines power from the perspective of the agent's interests. He viewed power broadly as the product of the interaction between agency and structure. He argues that power bias in decision-making is the product of the culturally patterned behaviour of groups.

Socially constructed structural institutions are not only responsible for shaping people's choices but also (dis)allow people to translate their resource endowments into effective agency (Moncrieffe 2004). Whether formal or informal, institutions are rarely neutral in their construction. Institutions interact with agency to shape human behaviour and interaction. Due to the fact that powerless individuals or groups basically lack consciousness, these institutions tend to support dominant ideology in a given circumstance largely to serve the interest of private rather than social well-being. Thus, empowerment theorists emphasise addressing the capability of agents so that actors can translate their asset base into well-being to

tackle poverty, as opposed to the income-based utilitarian approach, where real income is assumed to be straight forwardly translated into well-being (Alsop et al. 2006).

Basic psychological needs and social contexts

The capacity to set goals and act upon it (agency) is highly related to one's motivation for action. Self-determination theory (SDT) states that understanding human motivation requires consideration of the three basic psychological needs: the need for autonomy (or self-determination), competence (or self-efficacy), and relatedness (positive relations) (Deci and Ryan 2000). Autonomy refers to the ability to self-initiate and self-regulate one's own actions. Competency relates to the understanding of how to attain various outcomes (external and internal) and successfully perform essential actions to achieve these outcomes. Positive relations involve the ability to develop secure and satisfying connections with others within one's social sphere (Deci et al. 1991).

Some motivation research has studied how various aspects of the social environment affect people's autonomous actions and motivations, along with the quality of their performance. SDT hypothesises that social contexts that support people's autonomy, competence, and positive relations will promote intrinsic motivation for action and facilitate the self-determination of motivated action rather than control. These basic psychological needs in supportive environments generally enhance intrinsic motivation (Deci and Ryan 2000). If social contexts generally do not favour the fulfilment of these needs, they will weaken motivation and lead to poorer performance (Deci et al. 1991). Thus, support for autonomy, competence, and positive relations facilitates motivation for action only when accompanied by supportive contexts (Ryan and Deci 2000). Self-acceptance is a closely related construct to competence, whereby people lacking in self-acceptance (or self-esteem) tend to also have a low sense of competency, for example, doubting their ability to successfully undertake and complete tasks.

Research on empowerment resources and decisions is scanty in livestock-based systems (see Galiè and Farnworth 2019 for an exception). Based on mixed methods research, this study tries to fill this gap by exploring the gender contexts within which empowerment occurs, investigating the gendered relative value of major empowerment resources and decision areas identified in the literature, and assessing the relative strength of the most important empowerment resource identified through qualitative assessment.

Methodology

Study framework

We adopt a framework (Fig. 1) which shows a simplified version of interactions between the critical elements of

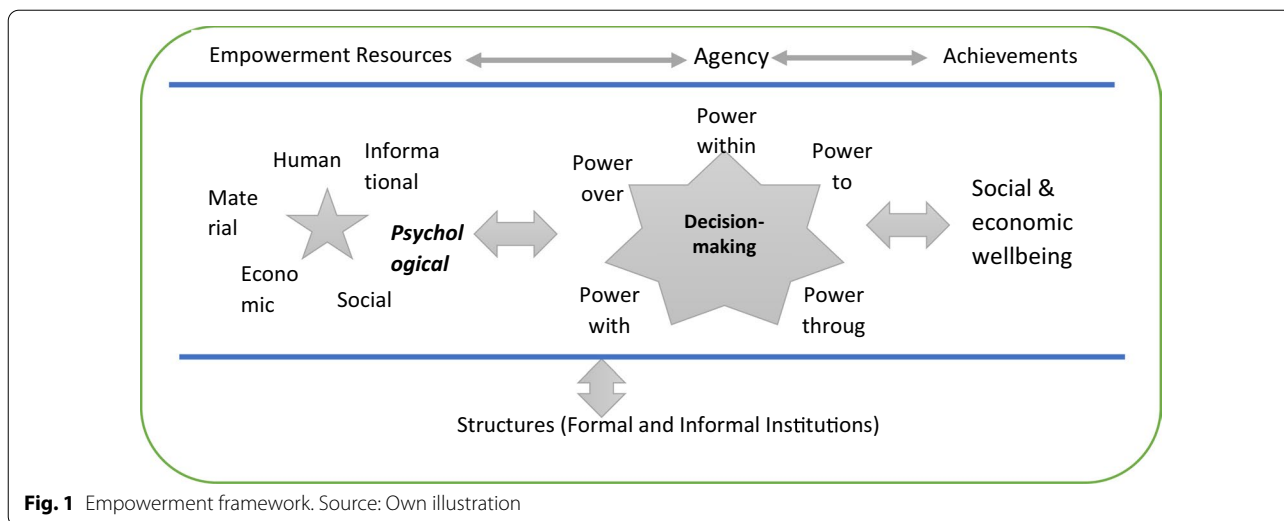


Fig. 1 Empowerment framework. Source: Own illustration

empowerment—empowerment resources, agency and achievements. The framework depicts that empowerment resources are the assets an agent acquires from a multitude of relationships in the various domains of the family, market, and community to fulfil her aspirations. By providing the ‘building blocks’ and defining the initial conditions which either support or hinder women’s agency, resources determine the trajectory of their empowerment process (Mahmud et al. 2012). The resources dimension in the empowerment process encompasses human, economic, material, social, informational, psychological assets, and the like (Alsop et al. 2006). This stock of resources equips actors with the ability to use opportunities (Moser 1998). In the framework suggested by Kabeer (1999), resources include not only materials but also access and future claims to these resources that enhance the ability to make choices by providing the necessary conditions. While agency refers to the process of decision-making, achievements are the well-being outcomes (Kabeer 1999). Resources can also be manifested in terms of economic and family decisions, mobility, freedom in public spaces, and expression of opinion with regards to equitable roles and rights (Sandberg and Rafail 2013; Yount et al. 2016). The human resources dimension, as in Yount et al. (2016), may include training or schooling, whether formal or informal, that expands valued knowledge or skills. Economic resources may include income, savings, or properties necessary for living. The social resources dimension may include informal or formal networks of access and support, usually outside the family. Psychological resources refer to one’s self-confidence, assertiveness, self-esteem, and self-consciousness.

Study area

The study was conducted from February to March 2021 in six villages across three target sites of the CGAIR¹ research program on livestock in Ethiopia. The two sites, Horo and Elweya *woredas* (districts), are in the Oromia region located in the west and southwest, while Adiyoworeda, is in the Southern Nations, Nationalities, and People’s (SNNP) region located in the south.

The agroecology and production systems of the study sites are summarised in Table 1. In lowland agroecology with the mixed crop–livestock system, farmers are largely engaged in rearing livestock in rangelands and produce crops on relatively fertile land, but on a small scale. In the drier parts of this agroecology, the pastoral production system is common with pastoralists, who mainly depend on livestock and livestock products for a living. In this system, livestock husbandry is dominated by cattle, camels, goats, and sheep, although in some areas, it has been evolving into an agropastoral system in recent years. Agro-pastoralists are sedentary farmers who grow crops and raise livestock (Gizaw et al. 2010).

The highland agroecology is characterised by a mixed crop–livestock system in which livestock husbandry and rain-fed crop cultivation are closely interlinked. Livestock provides inputs, such as draft power, manure, and transport for crop farming, while crop residues are used as livestock feed. Moreover, livestock generate both consumable and saleable outputs, including milk, meat, hides and skins, wool, and hair, as well as social prestige and security. On the other hand, live animals can be sold, and revenues can be reinvested into agriculture. The key objective for farmers to engage in mixed farming is to gain complementary benefits from both. Crops and

¹ CGIAR: Consultative Group on International Agricultural Research.

Table 1 Study sites, agroecology, and production system characteristics

Region	Districts	Sites/villages	Agroecology	Production systems	Altitude (m)	Rainfall (mm)	Temperature (°C)
Oromia	Elewaya	A/Galchet	Dry lowland	Pastoral/agro-pastoral	1181	493	22
	Elweya	Derito	Dry midland	Pastoral/agro-pastoral	1588	625	20
	Horo	Lakku iggu	Wet highland	Mixed crop–livestock	2678	1621	13
	Horo	Gitilo Dale	Wet highland	Mixed crop–livestock	2640	1604	14
SNNP	Adiyo	Boka	Wet highland	Mixed crop–livestock	2464	1910	15
	Adiyo	Shuta	Wet highland	Mixed crop–livestock	2316	1871	15

Source: Alemu et al. (2019)

livestock support each other to produce optimum output and help spread out risk (Gizachew and Smit 2005).

Data sources, collection, and analysis

Data collected through mixed methods were conducted through ICARDA–Ethiopia office. Qualitative methods were adopted, because they provide deeper insights into the complex dynamics related to assets and empowerment (Doss et al. 2020). ICARDA staff conducted the focus group discussions (FGDs) separately with men and women community representatives. Evidence suggests that husbands and wives often respond differently to the same questions, for example, regarding who makes decisions (Doss et al. 2020) indicating the importance of conducting separate interviews with men and women groups. The FGDs were conducted to generate information on key gender issues, major empowerment resources, and household decisions along with their relative importance in the mixed and livestock-based systems. Six FGDs were conducted, three with each gender, comprising 9 to 13 participants at a time. FGD discussants were selected based on certain criteria such as gender, age, wealth, marital status, educational level, and social status in consultation with local government officials and community leaders, so that participants represented the community at large. In addition, key informant interviews (KIIs) were conducted with community leaders and various stakeholders coming from government offices at the district level, including the Office of Agriculture, Livestock Development Agency, and Women, Children, and Youth Affairs Office. For the qualitative assessment, a total of 79 livestock keepers, 4 religious leaders, and 8 experts participated in the study (Table 2).

The FGDs focused on exploring the gender contexts surrounding empowerment in mixed and livestock-based systems. Data on major household decisions, empowerment resources, and their relative importance were solicited. Pairwise ranking method with men and women groups in separate sessions was used to assess the gendered relative importance of major empowerment

Table 2 Study participants by method, site, and gender in rural Ethiopia

Study Approach	Region	Woreda	Gender		Total
			Men	Women	
FGDs	Oromia	Horo	11	9	20
		Elewaya	15	16	31
	SNNP	Adiyo	14	14	28
Individual survey	Oromia	Horo	11	15	26
		Elewaya	11	16	27
	SNNP	Adiyo	12	14	26
KIIs with Elders & Experts	Oromia	Horo	1	3	4 ^a
		Elweya	2	2	4 ^a
	SNNP	Adiyo	2	2	4 ^b

^a Three of the four KIIs are experts, while the remaining one is a religious leader^b Two of the four KIIs are experts, while the remaining two are religious leaders

resources and decisions. Following the FGDs, individual survey interviews with randomly selected community members were conducted to obtain quantitative data on the key empowerment resource, psychological aspect, which emerged as an important aspect of empowerment from the pairwise ranking exercises. The individual interview was conducted in six *kebeles*² identified purposively, two from each study districts covered by the qualitative assessments. List of households in the sampled Kebeles was obtained from kebele managers and then households were identified using the lottery method with replacement from each Kebele proportional to its population size. Hence, the respondents are household heads or representatives of the household head. Fathers and mothers were considered as household heads and interviewed whoever was available. In total, the study covered 79 (women = 41) individuals who were asked to complete the Ryff's Psychological Well-being Scales (PWB) (Ryff 1989a, b) in local languages. The tool was translated into local languages and tested before collecting the actual

² Kebele [pl. Kebeles] is the smallest administrative unit in Ethiopia.

data. Trained respective NARS³ researchers administered the interview.

The PWB is the most commonly used scale to assess psychosocial wellbeing, and includes subscales relevant to the basic psychological needs of interest in this study, being autonomy, positive relations with others, and self-acceptance (Ryff 1989a, b). Each of these subscales contains 7 items that are responded to along a 6-point continuum (1 = strongly disagree to 6 = strongly agree), such that higher scores indicate higher levels of the named variable. The *Autonomy* subscale assesses the extent to which one views him/herself as being independent and able to resist social pressures (e.g., “My decisions are not usually influenced by what everyone else is doing”). A high autonomy score demonstrates that a person is self-determining and independent, regulates their behaviour from within, able to resist social pressures to think and act in certain ways, and evaluates themselves by personal standards, and the contrary if scores are low. The *Positive Relations with Others* subscale measures the extent to which one has satisfying, trusting relationships with other people (e.g., “I enjoy personal and mutual conversations with family members or friends”). A high score in positive relations with others indicates that one has warm, satisfying, trusting relationships with others, is capable of strong empathy, affection, and intimacy, is concerned about the welfare of others, and understands the give and take of human relationships. The *Self-Acceptance* subscale refers to the extent to which one has a positive attitude toward him/herself (e.g., “In general, I feel confident and positive about myself”). A high self-acceptance score indicates that the respondent possesses a positive attitude toward themselves, views the past positively, and acknowledges and accepts multiple aspects of the self, including good and bad qualities (Ryff 1989a, b).

The empowerment framework (Kabeer 1999) and self-determination theory, (Deci and Ryan 2000; Deci et al. 1991) informed the data analysis. Before analysing the qualitative data, the recorded interviews were translated (those in the local languages) and transcribed. Thematic analysis was followed (Braun and Clarke 2006) to analyse the qualitative data collected through FGDs. Meanings and patterns were searched by describing what was said by the FGD participants. Moreover, using extracts from the direct responses of participants, a narrative analysis method was also applied (Braun and Clarke 2006), particularly when responses were not adequate in explaining the participant’s intention or the real context.

For the quantitative data, we run repeated measures ANOVA using SPSS version 24. As follow-ups to a significant ANOVA, Tukey’s post hoc tests were conducted. Homogeneity of variances, one of the key assumptions

Table 3 Descriptive statistics of respondents to the individual interview by gender, rural Ethiopia

Respondent Characteristics	By gender		Total (N = 79)	Test statistics
	Women (N = 41)	Men (N = 38)		
Age (in years)	39.82(11.05)	37.67(11.45)	38.79	.718
Household size	5.40(1.65)	5.24(2.09)	5.32	.136
Marital status				
Single	12.2%	5.3%	8.9%	5.415
Married	78.0%	94.7%	86.1%	
Divorced	4.9%	0.0%	2.5%	
Widowed	4.9%	0.0%	2.5%	
Educational status				
Literate	41.5%	39.5%	40.5%	.032
Illiterate	58.5%	60.5%	59.5%	
Wealth status				
Poor	46.3%	39.5%	43.0%	4.515
Medium	29.3%	50.0%	39.2%	
Rich	24.4%	10.5%	17.7%	
Head of the household				
Yes	9.8%	100.0%	53.2%	64.503***
No	90.2%	0.0%	46.8%	
Membership to any group/s				
Yes	82.9%	89.5%	86.1%	.705
No	17.1%	10.5%	13.9%	

SD in parenthesis

Percentages may not add up to 100 due to rounding

*** Significant at $\alpha = 0.01$

for running ANOVA, is not of concern in this analysis, since the sample size per group in our data set is roughly equal (the ratio of the largest n /smallest $n < 1.5$) (Pituch & Stevens, 2016). We tested whether there are significant mean differences in PWB subscale scores over the measurement occasions, as well as whether there are group differences in terms of how the means vary with the gender of the respondent. Although Mauchley’s test of sphericity assumption, an “exact condition” for the standard univariate model (Lomax & Hahs-Vaughn, 2012) is met ($p = 0.111$), the Greenhouse–Geisser computed ($G - G \epsilon = 0.832$) falls between 0.75 and 1.0, thus we relayed on the Huynh–Feldt test (Field, 2018; Lomax & Hahs-Vaughn, 2012) to test the differences in means. The benchmark for the effect size given by the partial eta-squared is small if 0.01, medium if 0.06, and large if 0.14 (Cohen, 1988).

Results

Characteristics of study participants

The descriptive results presented in Table 3 show that the average age of study participants is 39.8 (SD = 11.45)

³ NARS refers to the National Agricultural Research System.

Table 4 Prioritising empowering resources across study areas and gender of the respondents, 6 FGDs in 2021, rural Ethiopia

Empowerment Assets	Rank						Description
	Adiyo		Elweya		Horo		
	M	W	M	W	M	W	
Economic assets	6th	6th	5th	4th	5th	4th	Assets such as livestock, crops, land, house, or property necessary for living
Financial assets	4th	4th	6th	6th	1st	6th	Assets such as cash, credits, remittances, etc
Human assets	3rd	3rd	4th	5th	3rd	2nd	Training or schooling, formal or informal, that expands valued knowledge or skills
Social assets	4th	5th	2nd	1st	2nd	3rd	Assets such as informal or formal networks of support outside the family
Informational assets	2nd	2nd	1st	2nd	4th	5th	Information assets such as market information, extension advisory services, agricultural technology information, etc
Psychological assets	1st	1st	3rd	3rd	6th	1st	Autonomy, positive relations, self-acceptance (specifically one's self-confidence, self-esteem, and self-consciousness)

Aggregated result obtained from multiple pairwise ranking

M Men and W Women

years across the study areas. The average household size is around 5 ($SD=2.09$), which is often used as a measure of labour availability across the study districts. In terms of educational status, the majority of the sampled participants (men = 60.5% and women = 58.5%) are illiterate which is very common in the Ethiopian context. With regards to wealth status, more women identify themselves as being in the rich category than men, which could be attributed to men's under-reporting or differential gendered perceptions of wealth. However, more women are poorer than men. In terms of marital status, more women are single, divorced, and widowed compared to men. On the other hand, more men are married than women.

When the household head role was examined, a huge difference was found between men and women in the sample. Only 9.8 per cent of women are heads or acting as heads of the household, as opposed to all men. This means that most of the women respondents are spouses who were interviewed representing their husbands as most men often away from home. With regard to membership in community-based groups, membership status is generally high. Nevertheless, in the FGDs, participants noted that most of the women are not members of producer groups, such as their men counterparts. In community-based producer groups, literature suggest that it is the head of the household who often represents the family. For example, women are less represented in the breeding cooperatives in the study sites (Gutu et al. 2015) mainly due to the prevailing gendered attitudes that assume men as head of the household and thus appropriate to represent the family in any collective actions (Yisehak 2008) that bring more benefits to the individual member. Therefore, the high rate of membership status reported here may not necessarily refers to only membership to formal groups, such as producer associations. For

community members it might also include all kinds of groups, for example, neighbourhood associations established based on common interests and that operate on an informal bases to fulfil member's short-term needs. Such groups may include '*Iquib*⁴' which is mostly established by women in a given social circle. Women are often members of women-only community-based associations, such as saving and credit groups (*iquib*) in rural Ethiopia.

Empowerment resources and their gendered relative importance

The ranking exercises yielded slightly different results across the study sites and gender groups. While psychological asset was ranked first in Adiyo by both men and women groups and in Horo by women groups, information, social, and financial assets were ranked first by men and women in Elweya and by men in Horo, respectively. During the group discussions with men and women in Elweya and Horo, participants often argued that inner strength, self-value, and confidence are the primary assets that one needs to be able to access and own other empowering resources. In Elweya, men value information asset followed by social capital. In this particular site, farmers entirely depend on livestock for their livelihoods and thus information on sources of water, feed, and health for their animals is critical for the well-being of livestock and thus for their livelihoods (Table 4).

Generally speaking, across the study sites, psychological asset appeared to be an important empowerment resource among men and women livestock keepers except for men in Horo. In the next section, we focus on this empowerment resource, *power within*, and explore it using data collected through a structured questionnaire

⁴ *Iquib* is an association established among neighbours to raise savings and redistributed on fixed terms. It can also be used to lend to members during emergencies, such as death within these groups and their families.

Table 5 Average score for PWB outcome subscales across gender and study areas

PWB outcome		N	Mean ^{ab}	Std. Error	95% Confidence Interval for Mean		F
					Lower Bound	Upper Bound	
By gender of the respondent							
Autonomy	Female	40	2.83(.55)	.09	2.66	3.01	1.66
	Male	38	2.67(.59)	.10	2.47	2.86	
Personal relations	Female	41	2.50(.46)	.07	2.35	2.64	.911
	Male	37	2.39(.51)	.08	2.22	2.56	
Self-Acceptance	Female	40	2.63(.51)	.08	2.47	2.79	.062
	Male	37	2.60(.68)	.11	2.37	2.82	
By study site							
Autonomy	Horo	26	2.59(.38)	.08	2.43	2.74	2.002
	Elweya	26	2.90(.66)	.13	2.64	3.17	
	Adiyo	26	2.76(.62)	.12	2.51	3.02	
Personal relations	Horo	25	2.51(.37)	.08	2.35	2.66	.545
	Elweya	27	2.37(.61)	.12	2.13	2.61	
	Adiyo	26	2.46(.43)	.08	2.29	2.64	
Self-Acceptance	Horo	25	2.85(.44)	.09	2.66	3.03	10.172***
	Elweya	26	2.24(.73)	.14	1.94	2.53	
	Adiyo	26	2.78(.35)	.07	2.64	2.91	

^b Results computed after reversing the scores for all the negatively worded items

*** significant at $\alpha = .01$; SD in parenthesis

based on Ryff's PWB instruments on autonomy, self-acceptance, and positive relations with others.

Psychological well-being and social context

To look at gender and area effects separately across the PWB outcome subscale variables, a series of one-way ANOVAs were run. The *F* test indicates that there are significant overall differences in means ($F(2, 74) = 10.172$, $p < 0.001$) across the study areas for the self-acceptance subscale with the eta-square value (η^2) of 0.216 indicating a large effect of study area on this subscale scores implying that respondents from Horo scored higher on this subscale regardless of gender (Tables 5, 6).

Two-way ANOVAs were run to look at the interaction effect of gender and area for the PWB subscale variables. The analysis yielded a significant area–gender interaction effect for personal relations. The main effect of area and the interaction between area and gender on the average self-acceptance and personal relations subscale scores across study areas are statistically significant with $F(2, 77) = 11.241$, $p < 0.001$, and $F(2, 78) = 6.500$, $p < 0.003$, respectively (Table 7), suggesting that being men and from Horo exhibits higher scores in these subscales.

Since the omnibus ANOVA result for the self-acceptance subscale is significant, post hoc testing was computed. The mean for Horo is 0.6095 points higher than that for the Elweya, and that difference is statistically significant ($p < 0.001$). Whereas, the mean for Elweya is

– 0.5385 points lower than that for Adiyo and the difference was statistically significant ($p = 0.001$). Overall, it appears there were differences between Elweya and the rest of the study sites. However, there was no difference between Horo and Adiyo study areas (Table 8).

Given the non-autonomy supportive socio-cultural environment in which the Ethiopian women pursue their interests, both groups exhibit some degree of satisfaction with the fulfilment of their basic psychological needs. Responses of both genders are densely concentrated around 4–5 on the six-point scales (Fig. 2).

Decisions and their gendered relative importance

To differentiate between gendered decision priorities among livestock keepers, we conducted simple ranking exercises with men and women representing the study communities. We began the process by identifying which decisions are more valued in the communities by gender across the study areas. The assumption is that all decisions may be important for men and women, but not equally due to the gendered differential roles, responsibilities, interests and priorities. When asked about which decisions are important to them, both men and women groups mentioned the following four as the most important decision-making areas: livestock and related resources, crop and related resources, financial matters, social networks, and membership to associations.

Table 6 Average score for PWB outcome subscales by study area and gender

PWB subscale	Area	Gender	N	Mean ^a	Std. Error	95% Confidence Interval	
						Lower Bound	Upper Bound
Autonomy	Horo	Female	11	2.75(.29)	0.17	2.41	3.10
		Male	15	2.47(.40)	0.15	2.17	2.76
	Elweya	Female	15	2.91(.63)	0.15	2.61	3.20
		Male	11	2.90(.72)	0.17	2.55	3.24
	Adiyo	Female	14	2.82(.64)	0.15	2.51	3.12
		Male	12	2.70(.63)	0.17	2.37	3.03
Personal relations	Horo	Female	11	2.34(.27)	0.14	2.07	2.61
		Male	14	2.64(.40)	0.12	2.40	2.89
	Elweya	Female	16	2.62(.54)	0.11	2.39	2.84
		Male	11	2.01(.56)	0.14	1.74	2.29
	Adiyo	Female	14	2.48(.48)	0.12	2.24	2.72
		Male	12	2.44(.39)	0.13	2.18	2.70
Self-acceptance	Horo	Female	11	3.01(.30)	0.16	2.70	3.33
		Male	14	2.71(.50)	0.14	2.43	2.99
	Elweya	Female	15	2.32(.55)	0.14	2.05	2.59
		Male	11	2.12(.93)	0.16	1.80	2.43
	Adiyo	Female	14	2.66(.38)	0.14	2.38	2.94
		Male	12	2.91(.25)	0.15	2.60	3.21

^a Results computed after reversing the scores for all the negatively worded items
SD in parenthesis

The results of the ranking exercises suggest that livestock-related decisions happened to be the most important according to the men and women in Elweya and men in Horo, followed by crops related issues (Table 9). Whereas, decisions on crop and related resources are the most important decisions for women in Adiyo. Similarly, financial decisions are priority areas for men in Adiyo and Horo, while social decisions are priority areas for women in Horo and Elweya. In Elweya, communities entirely depend on livestock and thus decisions related to livestock are naturally the most important for both men's and women's livelihoods. However, in Adiyo, where mixed agriculture is the common practice, women give more importance to decisions related to crops, followed by livestock.

When major decision areas identified are break down to its components, they do not mean the same for both genders. As to the FGD participants, decisions with regards to livestock, crops, and related resources encompass which animal or crop to raise, cultivate or consume, and when, where, and how much and how to market or sell them. Whereas, decisions related to financial matters, according to participants, refer to how much of the income from livestock and crop selling needs to be saved, or re-invested into family and individual assets. In-depth probing revealed that men and women actually did not refer to the same types of decisions when they said, for

example, livestock and related decisions. While the men were referring to livestock marketing, the women were actually referring to marketing of livestock products and small animals, such as small ruminants and chicken.

The last important decision areas are related to membership to associations and creating own social networks. Decisions related to social networks and membership to associations not only refer to matters such as who needs to be registered as a member of producer associations but also who can create social networks through wilful mobility. Particularly, as to the women participants, having the ability to join producer associations such as livestock-based cooperatives is beneficial in many ways. Beyond their economic values, women often describe the social and psychological benefits it generates for them. They feel proud when participate in male dominated producer associations.

Although women have clear reasons for expressing their priority decision areas, they do not have full control over their priorities which affects their ability to act upon their desired choices. The FGDs with both women and men revealed that, across the study sites, the effect of social and gender norms on the lives of women is enormous. In some areas, such as Elweya, the situation is extreme—women do not count themselves as human beings or worthy of seeking equality with men. An old man stated:

Table 7 Tests of between-subjects effects

Variable	Autonomy		Personal relations		Self-acceptance	
	F	Partial Eta Squared	F	Partial Eta Squared	F	Partial Eta Squared
Area	1.65	.04	1.10	.030	11.24***	.24
Gender	1.10	.02	1.17	.016	.53	.01
Area*Gender	.39	.01	6.50***	.153	1.93	.05
Corrected Model	1.16	.08	3.12***	.178	5.01***	.26
Intercept	Intercept: $\alpha = .000$ R Squared = .08 Adjusted R Squared = .01		Intercept: $\alpha = .000$ R Squared = .18 Adjusted R Squared = .12		Intercept: $\alpha = .000$ R Squared = .26 Adjusted R Squared = .21	

*** Significant at $\alpha = 0.01$

Table 8 Multiple comparisons for mean differences across study areas

PWB subscale	(I) Area	(J) Area	Mean Difference (I–J)	p^a	95% Confidence Interval	
					Lower Bound	Upper Bound
Self-Acceptance	Horo	Elweya	.64(.15)	< .001	.28	1.01
		Adiyo	.08(.15)	1.000	– .28	.44
	Elweya	Horo	– .64(.15)	< .001	– 1.01	– .28
		Adiyo	– .56(.15)	.001	– .92	– .20
	Adiyo	Horo	– .08(.15)	1.000	– .44	.28
		Elweya	.56(.15)	.001	.20	.92

The mean difference is significant at the .05 level

SE in parenthesis

^a Adjustment for multiple comparisons: Bonferroni

As a saying goes, 1 day a woman was travelling in the village and a certain man saw her and asked, who is this human being? Upon hearing, the woman replied, do not call me human, call me a woman. —men-only FGD participant, Elweya woreda.

He elaborated that by saying she meant that “a woman is not equal to a man and that the title was appropriate for a man and not for a woman”. In the discussion, another man added by saying that “women generally lack self-confidence”. When asked about the reasons why women lack self-confidence, they suggested reasons, such as perceived lack of skills, experience, information, and strength which they attributed to masculinity. In general, a previous study in the same study location showed that women lack or have limited access to the important dimensions of power (Kinati et al. forthcoming) which provide them with the opportunity to pursue higher empowerment pathways. In Table 10, we present the perspectives of men and women on how they conceptualise and experience the different aspects of power.

Women (and men) participants were clear that their individual empowerment was largely determined by the gender norms. Across the study sites, the results of the qualitative assessment show that although in recent years progress has been made in transforming restrictive social structures in the Livestock CRP⁵ target sites, traditional norms still dictate most aspects of social life, meaning women still have little agency. The statements in Table 10 show that women livestock keepers cannot act upon the aspirations they value mainly due to restrictive social norms. For instance, they failed to become breeding cooperative members, mainly because they, particularly women in men-headed households, lack the ability to claim ownership over key household resources, such as livestock. Even when they own resources, they are systematically discouraged from working on and gaining full benefits from the assets over which they claim ownership rights.

Decision-making on key empowerment resources is generally dominated by men. Although FGD participants often suggest that decisions are made in consultation

⁵ CGIAR Research Program.

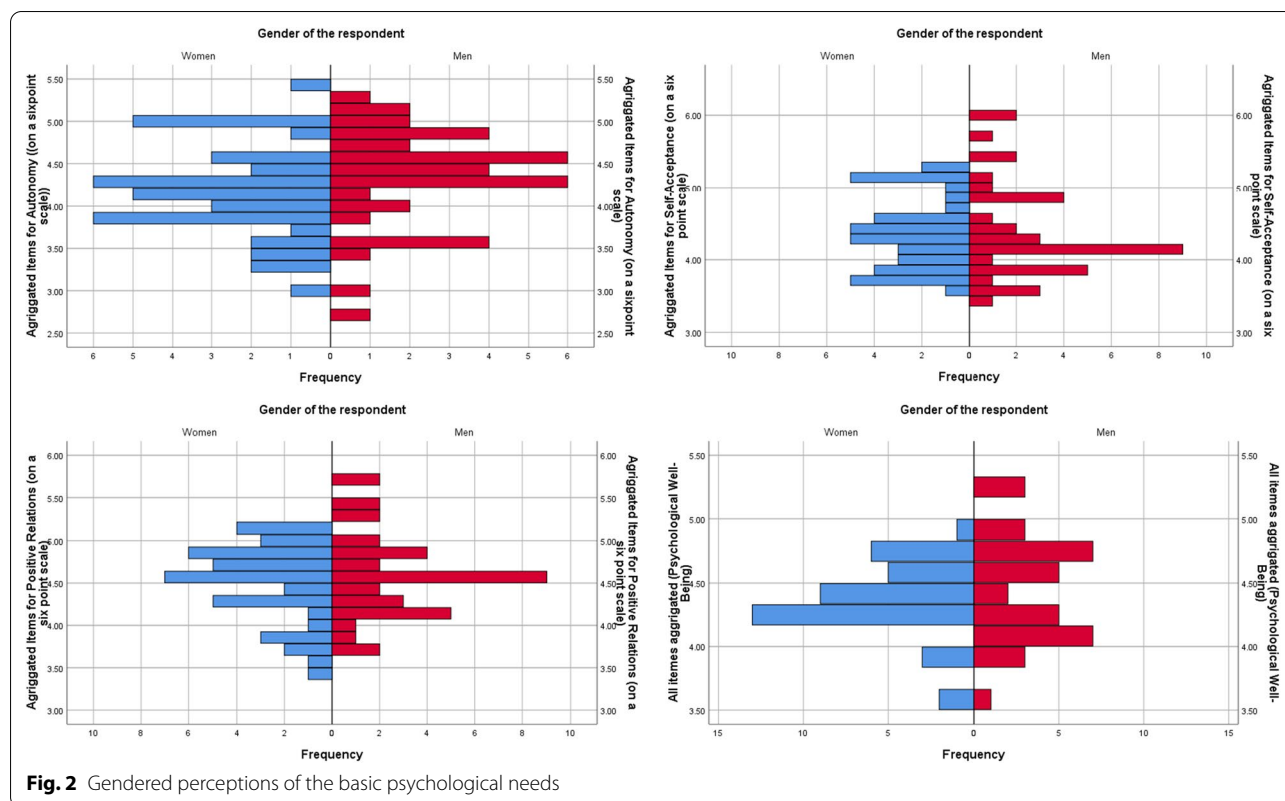


Table 9 Prioritising the major household decisions, empowerment dimensions, (6 FGDs in 2021), rural Ethiopia

Key decision areas	Rank (by study area & gender)						Who has the final say?	
	Adiyo		Elweya		Horo			
	M	W	M	W	M	W		
Economic decisions	Livestock & related resources	2nd	2nd	1st	1st	1st	3rd	Head of the household
	Crop & related resources	3rd	1st	4th	2nd	2nd	3rd	
Financial decisions		1st	3rd	3rd	4th	4th	1st	Head of the household
Social decisions		4th	4th	2nd	2nd	3rd	1st	Head of the household

^a Results were obtained using pairwise ranking
M= Men and W=Women

with both spouses in the household, the final say is often made by men or the head of the household (either men or women). The FGD results indicated that men, and women themselves, believe that women are generally not good decision makers when it comes to the major high-priority decisions. When asked the reasons why, they often cite lack of confidence and patience as the reasons. However, after detailed probing and heated discussions on the issue, interesting reasons began to emerge. Both gender groups realised why women lack patience and often make poor decisions. They were able to see that women are very burdened not only by reproductive but

also by the productive roles traditionally assigned to men. The domestic roles of women not only affect their level of patience, but also the quality of their time to make good decisions. When asked why they lacked patience, they suggested that they did not have the time to collect information and think thoroughly about the issue requiring decisions.

Moreover, they said they generally do not have multiple information sources, mainly as a result of their limited mobility compared to men. Culturally, girls are denied the opportunity to be involved in decision-making and gain the required skills for making good decisions, which

Table 10 Perceptions of power among communities practicing mixed and livestock-based farming in Ethiopia, qualitative assessments

Aspects of Power ^a	How communities perceive the different dimensions of power ^b
Power within	<i>We aspire a lot, we want to work outside the home. We wish to participate in groups</i> —a women-only FGD participant, Adiyo <i>We feel proud and confident when we participate in men's associations that bring you a lot of benefits</i> —women-only FGD participant, Elweya <i>A land ploughed by a woman can't be productive</i> —women-only FGD participant, Horro
Power over	<i>We [the men spouses] usually order our wives to work in the kitchen to serve us while we discuss with visitors</i> —a male participant, cooperative leadership committee FGD, Adiyo
Power to	<i>If women got the right of controlling animals, they will start misbehaving</i> —a male participant, cooperative leadership committee FGD, Adiyo <i>Husband and wife jointly own animals but men must have the final say on household assets such as livestock</i> —a male participant of cooperative leadership FGD, Horo
Power with	<i>Women are invited to participate only in the absence of their spouses and if it is not far from home</i> —women-only FGD participant, Elweya <i>Women stay at home and thus are not able to take part in community gatherings</i> —women-only FGD participant, Adiyo
Power through	<i>Our animals are sources of our pride. In the times of sudden loss, we (people in close relations) contribute to each other in kind (live animals). We rise and fall with other important people in our lives</i> —women-only FGD participant, Horo

^a Dimensions of power as identified in the literature

^b Direct quotations from men and women participants in the separately conducted FGDs

affects their ability to take decision-making roles in their adulthood stages. Women are often not invited to participate in consultative dialogues or interviews at home between men spouses and extension agents or any outsiders. During such occasions, the norm is that women prepare coffee or food for guests and have no time to sit-down with them and listen. An earlier study (Kinati et al., unpublished) in a similar livestock CRP target site reported similar result, as reflected in the following statements by male participant in the FGD with the cooperative leadership committee at Menz district:

[...] we [referring to the men spouses] usually order our partners to serve us, while we discuss with visitors.

Discussion

Although it is evident in the literature that empowerment consists of various dimensions and indicators, their relative importance is not studied in the mixed and livestock-based systems. In this study we found that valuations of these dimensions vary according to gender and context. These systems are unique as livestock offers not only material but also psychological well-being related services (Wodajo et al. 2020). While the agency literature is predominantly focused on material resources and opportunities, little is done on psychological resources which is all about one's self-confidence, assertiveness, self-esteem, and self-consciousness (Alsop et al. 2006). Our findings reveal that psychological assets, were highly valued among men and women livestock keepers. These assets are important for women, because it is the foundation for the ability to move freely in public spaces and voice

concerns regarding equitable roles and rights (Sandberg and Rafail 2013; Yount et al. 2016) and are highly related to one's motivation for action.

In general, our finding shows that the socio-cultural context is non-autonomy supportive. If social contexts generally do not favour the fulfilment of the three basic psychological needs, they will weaken motivation and lead to poorer performance (Deci et al. 1991). The qualitative result, unlike the quantitative result, showed that women lack self-confidence and self-esteem—which are important components of empowerment—as compared to their men counterparts. Culturally they are expected to be submissive. In the academic literature, the gap that exists between men and women professionals is attributed to lack of confidence. For example, when students (boys and girls) are equally confident in their abilities, the gender gap in performance narrows (OECD 2015). Similarly, Ehrlinger and Dunning (2003) concluded that women could have performed equally to men on a science quiz, yet they tended to underestimate their performance only, because they thought less of their general scientific reasoning ability than did men.

Community norms confine women to domestic activities, limiting their exposure to important information which could have strengthened their agency. Women spend, on average, up to 5 h more per day as compared to men on strenuous and tiresome activities which are often less valued (Kinati and Mulema 2016) and remain unrecognised (Belay and Oljira 2016). Domestic responsibilities, unpaid care work, and all homestead cultivation activities are considered to be feminine and are generally less valued by the society, because they are unpaid and assumed to contribute less to the household income

(Kinati et al. 2018). Domestic workload consumes women's productive time and diminishes their sense of self-acceptance in more valued activities. Women's masked inability to effectively and timely accomplish assigned productive and community roles is often presented as a proof to systematically discourage women from engaging in highly valued activities (Ryan and Deci 2000).

Domestic work burden, which takes up much of women's productive time (Kinati and Mulema 2016), is often used as evidence of their incompetency when engaged in activities traditionally assigned to men. Women's access to information is further limited by the restrictions, dictated by societal norms, on their mobility. Participation in social events, training, and community associations is often difficult due to inhibitory social norms. Owing to extension agents' lack of gender capacity (Mulema et al. 2016), livestock extension systems are generally biased in favour of men and exclude women from accessing livestock information (Belay and Oljira 2016). This is exacerbated by the low number of women extension agents—only 12 to 22% of development agents in Ethiopia are women (MOARD 2009a).

The differentials in the valuations of major empowerment resources and decisions among livestock keepers might have implications for researchers and development practitioners. First, it calls for more research into why, within the same farming system, men and women value decision-making areas differently. Second, it highlights the importance of context in understanding and addressing men's and women's priorities. Finally, the economic, financial, and social value placed on major decisions varies across the study sites, which signals not only the importance of social contexts but also the need for rethinking the validity of using 'joint decision making' as an indicator for assessing women's empowerment. Empowerment indicators should explore and focus on measuring women's participation in decisions that matter most to them.

The primary goal of empowerment in the mixed and livestock-based systems in the study sites should be enabling women livestock keepers to acquire the ability to influence and make effective decisions (Alsop et al. 2006). However, the process of empowerment needs to first increase their capacity to aspire (Appadurai 2004, p. 24). Therefore, empowerment policies and interventions need to target women's agency through building their psychological assets—meaning equipping people with the capacity to aspire and to imagine alternative choices that can lead to improved access, ownership, and control of other empowerment assets. This could be done by first elevating their consciousness about their innate ability to aspire and accomplish their own objectives. By improving the capacity to aspire, the *power from within*, government

and development agencies would help women livestock keepers and other disempowered groups to recognize their *power to* and *power with* for greater empowerment (Alsop et al. 2006), thereby enabling them to make effective choices.

Similarly, the socio-cultural context within which women pursue their empowerment pathways need to be equally considered. SDT hypothesises that social contexts that support people's autonomy, self-acceptance, and positive relations will promote intrinsic motivation for action and facilitate the self-determination of motivated action rather than control. Autonomy, self-acceptance, and positive relations in supportive social environments generally enhance intrinsic motivation (Deci and Ryan 2000). Thus, achievements of the three basic psychological needs facilitates motivation for action only when accompanied by supportive contexts (Ryan and Deci 2000).

It appears that location, alone and in combination with gender, is an important variable for one's PWB outcomes. Respondents in Elweya exhibit lower scores on self-acceptance and personal relation sub-scales implying the need to design context specific empowerment interventions. Elweya is a pastoralist community and differs from the rest in its socio-economic contexts. Overall, the quantitative result suggested that both men and women appear to be satisfied with their autonomy status across study areas, the qualitative assessment showed that the psychological needs, of women are unfulfilled implying the importance of adopting a mixed method approach in such studies. How communities, men and women, understand and express autonomy under different farming systems is a potential future research area. Basically, achieving these needs enables an agent to have access to the other empowerment resources. The concept of SDT when applied in the agricultural context refers to promoting these needs so that livestock keepers, particularly women, develop confidence in their own capacities and attributes. The outcome, confidence in one's capacities and attributes, is an indicator of intrinsic motivation and internalisation of values (Deci et al. 1991) for making autonomous decisions in personal and collective spaces.

Women recognize the impact of social norms on their empowerment processes and they rely largely on the positive influences of other important people in their lives. Therefore, empowerment initiatives must involve the wider community, particularly important community leaders, religious leaders, and influential thought leaders to challenge and positively reform restrictive social norms. Extreme caution needs to be taken; however, not to produce new restrictive norms in the process. As an entry point, first working with these important people in the community is important to secure their consent in

the process of identifying positive norms to strengthen and harmful norms to eliminate. Trade-offs exist, such as lash back and time increased burden, and if not managed, may even reverse progress in women's empowerment. Therefore, it is critical to strengthen women's access and ability to systematically harmonize the interaction among the important assets and, manage the trade-offs of empowerment (Mulema et al. 2020).

Household decisions, either economic, financial or social, are not equally valued according to the results of this study. Kabeer (2011) and Cornwall and Edwards (2010) suggest that beyond capturing the direct indicators of empowerment, assessing the motivations, meanings, and values behind choices is equally important if empowerment is to be understood comprehensively. However, this approach is generally absent in most empowerment studies. To this end, understanding valuations of major household decisions from livestock keepers' perspectives is essential for enabling context specific empowerment. It enables us to know which social group values economic, financial, or social decision/s more and the role of psychological well-being as a driver of decision making. Variations in the valuations of decision areas across contexts suggests that social contexts matter.

As per the findings, women place a greater importance on decisions about livestock, crops, and social relations compared to men, who prioritise decisions related to livestock, crops, and finance. Men in livestock dominated areas value livestock decisions more than other decision areas, followed by crop related and financial matters. The perspective of women is partly attributed to domestic responsibilities, such as cooking meals for the family, which are entirely considered to be women's chores. That is, decisions on crops and livestock products affect women's ability to fulfil their gender role of a good homemaker (Galiè and Farnworth 2019). By and large, this might be related to cultural norms. For example, how much control women have over animal products is linked to their self-esteem. A woman who has full access and control over this resource will have the ability to function as a respected woman. For example, using animal-source foodstuffs, which are more appreciated than other food items, she can entertain guests and win her husband's respect. Similarly, the ability to establish and manage her own networks is also seen as a sign of improved social status among women (Jones et al. 2017).

Although, contextualised studies of empowerment limit cross-context comparisons and may contribute to inconsistent findings, as argued by some scholars (Jones et al. 2019), our work makes some novel contributions to the discourse on empowerment in mixed and livestock-based contexts particularly with reference to gendered valuations of resources and agency aspects of empowerment.

The in-depth qualitative study complemented with quantitative data generated information that enabled us to contextually explore and gain deeper understanding about the social contexts in which empowerment takes place and how empowerment resources and decisions are perceived and valued from gendered perspectives. Despite this novel contribution, the fact that this study narrowed its focus to a few study sites could be seen as a limitation. Therefore, replication of this analysis with more coverage under different socio-economic contexts is recommended.

Conclusions

The resources assumed vital to rural livelihoods and empowerment by livestock keepers mainly concern four assets: livestock, crop, finance, and social networks or membership to associations. The study findings suggest that the relative value placed on major resources and decisions differs by gender and across the study sites, which underlines the importance of taking context into account. Social norms still rule over most aspects of women's lives across the study sites and substantially limit their agency. In general, the qualitative assessment indicated that all the decision-making processes are dominated by men regardless of contexts (Additional file 1).

Similarly, while context matters, in general, psychological well-being appeared to be an important empowerment resource among men and women livestock keepers across the study sites. Assessment of basic psychological needs based on Ryff's PWB instruments of autonomy, self-acceptance, and positive relations statistically yielded no significant difference between the gender groups. However, the effects of location and the intersection of location with gender were both found to be statistically significant factors, suggesting that being men and from Horo is associated with higher scores in these subscales. Furthermore, the Elweya site participants reported far lower levels of relatedness and self-acceptance as compared to the other two locations. Qualitative assessment generally showed that women's basic psychological needs are largely unfulfilled and they are marginalised from major decision-making, mainly due to their masked ineffectiveness. Women's (men's) lack of confidence, stemming from low self-esteem, is often cited as one of the major obstacles to women's equitable participation in the major decision-making processes. Hence, we recommend that building people's agency through cultivating the capacity to aspire and self-confidence among women (men) would lead to enhance their access, ownership, and control of the other empowerment resources. This could be done through implementing policies that attract more women extension agents—for instance, availing incentives, women pro-facilities and career

opportunities—who are socially appropriate to reach out women more easily. Literacy programs, promoting awareness of rights, and collective actions could be effective instruments. By first stimulating the *power from within*, psychological asset, the other forms of power, *power to* and *power with* will be recognised for making effective choices. Therefore, policies and interventions that deal with restrictive social contexts that help to unlock people's capacity to act and simultaneously strengthen the key empowerment resource of confidence in one's capacities and attributes, and relatedness are an important step in achieving individual and collective empowerment.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s43170-022-00114-6>.

Additional file 1: Table S1. Ranking empowerment resources among livestock keepers, Men FGD, Boqa kebele, and Adiyoworeda. **Table S2.** Ranking empowerment resources among livestock keepers, Women FGD, Shuta kebele, and Adiyoworeda. **Table S3.** Ranking empowerment resources among livestock keepers, Women FGD, Hidi Dale kebele, and Elweya woreda. **Table S4.** Ranking empowerment resources among livestock keepers, Men FGD, Adegachet kebele, and Elweya woreda. **Table S5.** Ranking empowerment resources among livestock keepers, Men FGD, Gitilo Dale kebele, Horo woreda. **Table S6.** Ranking empowerment resources among livestock keepers, Men FGD, Leku Igu kebele, Horo woreda. **Table S7.** Ranking decisions for key HH resources, Women FGD, Boqa kebele, and Adiyoworeda. **Table S8.** Ranking decisions for key HH resources, Men FGD, Shuta kebele, and Adiyoworeda. **Table S9.** Ranking decisions for key HH resources, Women FGD, Adegachet kebele, Elweya woreda. **Table S10.** Ranking decisions for key HH resources, Men FGD, Hidi Dale kebele, Elweya woreda. **Table S11.** Ranking decisions for key HH resources, Men FGD, Gitilo dale kebele, Horo woreda. **Table S12.** Ranking decisions for key HH resources, Men FGD, Leku Igu kebele, Horo woreda

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Author contributions

ICARDA–Ethiopia staff conceived the research idea, designed the study, followed up, and monitored data collection. WK transcribed (qualitative data), cleaned, and analysed the data set. DB, ET, DN, and AM helped in conceptualising and drafting the paper. All authors read, commented on, and approved the final manuscript.

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Availability of data and materials

The data sets used for the current study can be accessed upon reasonable request to the corresponding author and with permission from the third party, ICARDA.

Declarations

Ethics approval and consent to participate

The study considered all potential ethical issues associated with conducting a field study with human beings and went through the required ethical approval processes. The study involving human participants was reviewed and approved according to ICARDA's Code of Conduct Policy. Moreover, written permission was obtained from the respective local administrative bodies of the relevant district government offices. Following that, before undertaking the study, informed consent for participation was obtained from the participants in the form of oral consent. At all the study sites, informed consent was obtained from prospective informants and group discussants after providing them in-depth information about the study. Moreover, permission was also obtained from participating individuals and groups to take notes during the FGDs and for taking audio recordings of conversations to comply with the local cultural beliefs. All the research participants were assured that any private issues and information gathered would be confidential and not be disclosed without their consent to any individuals, including their spouses, or organisations.

Consent for publication

We, the authors, give our consent for the publication of this article to be published in the *Journal of CABI Agriculture and Bioscience*.

Competing interests

The authors declare that they have no conflict of interest.

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