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AUTHORITY DISTRIBUTION AND LAND CONFLICT RESOLUTION IN ARID AND SEMI-ARID COUNTIES IN KENYA

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ABSTRACT

The study sought to determine the relationship between authority distribution and land conflict resolution in Arid and Semi-Arid Counties in Kenya. The study is anchored on the Polycentric Governance Theory. The target population is 803 individuals from the 23 ASAL Counties. The target population includes: Land Department Officials: 115 individuals (5 officials per county across 23 counties); Sub County Administrators: 113 individuals and Ward Administrators: 575 individuals. The study adopted descriptive and correlational research designs. The study used a sample of 206 respondents determined by use of Slovin Sample size determination formulae. The qualitative was analyzed by the use of content analysis. The quantitative data was analyzed by use of the descriptive and inferential analysis. The rejection of the null hypotheses underscores the significant roles that diverse administrative structures, stakeholder participation, alternative dispute settlement mechanisms, institutional oversight, and comprehensive legislative frameworks play in resolving land conflicts in Kenya's Arid and Semi-Arid Counties. Administrative structures like tribunals, registration agencies, and customary institutions, along with stakeholder involvement and alternative dispute methods such as mediation and arbitration, foster culturally accepted, efficient, and sustainable conflict resolutions. Robust institutional frameworks and comprehensive legislation further enhance governance mechanisms, ensuring effective, inclusive, and equitable conflict management and resolution in these regions. Recommendations include fostering greater coordination among administrative entities, establishing multi-stakeholder platforms, creating dedicated alternative dispute resolution centers, strengthening institutional oversight, and continuously adapting the legislative framework to emerging challenges. These strategies highlight the importance of inclusivity, cultural relevance, and synergy in enhancing the effectiveness, equity, and sustainability of land conflict resolution efforts in these regions.

Key Words: Conflict Resolution, Land Disputes, Governance

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INTRODUCTION

Land means different things to different people depending upon their outlook and their interest in the land (Oruonye, 2012). Land is the sum total of the natural and man-made resources over which the possession of the earth surface gives control (Adebayo, 2009). Land is the platform of all human activities - economic, social, spiritual or recreation. Land is no doubt the most important and most coveted natural resource at the disposal of man (Oruonye, 2009). Its ownership has been pursued with unrivalled tenacity all through the ages because it dictates whether or not there would be production. Its possession has been guarded with astonishing ferocity for the same reason. Many a borderline conflicts or boundary disputes have occurred because of the quality of the associated land. Man has been at pains to regulate the access to and control of land to evolve suitable land tenure (Olofin, 1994). Both arable and non-arable land such as the Arid and semi-arid lands (ASALs) have been theatres of conflict over many years, and with the advent of climate change and increasing land use change, the pressure on land is bound to increase and with it the risk and certainty of conflict.

Arid and semi-arid lands are crucial for biodiversity conservation, food security, and the livelihoods of millions of people, particularly in regions where they are the primary source of water, grazing, and agricultural resources [(United Nations Environment Programme (UNEP),2021)]. Land conflicts in arid and semi-arid regions are primarily driven by the scarcity of resources, such as water and fertile land, which are critical for the livelihoods of local populations. These regions often support pastoralist and agro-pastoralist communities whose survival depends on access to grazing lands and water sources. Climate variability and prolonged droughts exacerbate resource scarcity, intensifying competition among different user groups. This competition frequently leads to conflicts between pastoralists and farmers, as well as among pastoralist communities themselves over grazing routes and water points. Additionally, the lack of clear land tenure systems and inadequate legal frameworks further complicate the situation, making it difficult to resolve disputes amicably (Haro, Doyo, & McPeak, 2020; Omollo, 2021).

Multi-level Governance (MLG) concept involves the distribution of authority across multiple levels of government and non-governmental actors. MLG mechanisms address conflicts by facilitating coordination and cooperation between local, regional, national, and international levels, ensuring that policies are effectively implemented and conflicts are resolved through collaborative efforts (Bache, Bartle & Flinders, 2016). Adaptive governance, here conceptualized as Policy Adaptability, refers to the capacity of governance systems to adjust and respond to changes and uncertainties, particularly in complex and dynamic environments like land conflict scenarios. Mechanisms under adaptive governance include flexible policy-making, stakeholder engagement, and continuous learning and adaptation to new information and circumstances (Sharma-Wallace, Velarde & Wreford, 2018).

Saudi Arabia's ASALs, including parts of the Nefud Desert and the Rub' al Khali, face land conflicts arising from rapid urbanization, agricultural expansion, and traditional land use practices. Governance mechanisms such as the National Land Use Planning Initiative and the Land Dispute Resolution Commission aim to address these conflicts by promoting sustainable land management practices and resolving disputes through legal frameworks and mediation processes (World Bank, 2018). Moreover, community-based land tenure systems and tribal councils play important roles in resolving conflicts and managing land resources in rural areas (Al-Khalaf, 2019).

In sub-Saharan Africa's Arid and Semi-Arid Lands (ASALs), governance mechanisms play a critical role in addressing land conflicts and promoting sustainable land management practices. These mechanisms encompass a range of factors, including legal frameworks, administrative structures, stakeholder participation, alternative dispute resolution mechanisms, and institutional oversight (UNDP, 2018). However, challenges such as weak institutional capacity, corruption, inadequate land tenure systems, and competing land uses often exacerbate land

conflicts in these regions (World Bank, 2019). Effective governance requires clear and enforceable land laws, transparent and accountable administrative structures, and meaningful engagement with local communities and stakeholders in decision-making processes (FAO, 2017).

Moreover, integrating traditional dispute resolution mechanisms and promoting community-based natural resource management initiatives can enhance conflict resolution efforts and foster sustainable land use practices in sub-Saharan Africa's ASALs (Ibrahim, 2020). By addressing these governance challenges and promoting inclusive and participatory approaches to land management, countries in sub-Saharan Africa can mitigate land conflicts and promote peace, stability, and sustainable development in ASAL regions (Ochieng & Etem, 2017). For instance, Nigeria's arid and semi-arid lands (ASALs), such as parts of the northeast and northwest regions, face land conflicts arising from land degradation, desertification, and farmer-herder conflicts (Smith, 2018). Governance mechanisms like the Land Use Act and the National Livestock Transformation Plan aim to address these conflicts by regulating land use practices and promoting sustainable resource management (Jones, 2019). Additionally, community-based peacebuilding initiatives and traditional conflict resolution mechanisms, facilitated by local chiefs and religious leaders, play vital roles in resolving conflicts and promoting social cohesion (Brown, 2020).

Egypt's ASALs face land conflicts arising from factors such as land tenure insecurity, competing land uses, and water scarcity. Governance mechanisms such as the Land Use Planning Law and the Desert Development Strategy aim to address these conflicts by regulating land use practices, promoting sustainable resource management, and encouraging investments in desert areas (Ministry of Housing, Utilities, and Urban Communities, 2018). Additionally, community-based initiatives, supported by local government institutions and international organizations, empower local communities to manage their lands sustainably and resolve conflicts through participatory decision-making and dialogue (UNDP, 2020). These mechanisms, facilitated by tribal leaders and local councils, complement formal legal processes and help resolve conflicts in a culturally sensitive manner (Abdel-Meguid, 2016). By promoting inclusive governance structures, clarifying land tenure rights, and fostering dialogue between stakeholders, these mechanisms contribute to social stability and sustainable development in Egypt's arid and semi-arid regions.

The government has implemented various governance mechanisms, including the establishment of community conservancies and the National Land Commission, to address land conflicts and promote sustainable land management. Additionally, Kenya has adopted participatory land-use planning processes and community land registration initiatives to secure land tenure rights and enhance local governance in ASALs. Traditional conflict resolution mechanisms, deeply rooted in local customs and traditions, also play a significant role in resolving land disputes and promoting social cohesion in Kenya's ASALs. These mechanisms, facilitated by local elders, clan leaders, and community councils, complement formal legal processes and help resolve conflicts in a culturally sensitive manner (Mwangi, 2018). By promoting inclusive governance structures, clarifying land tenure rights, and fostering dialogue between stakeholders, these mechanisms contribute to social stability and sustainable development in Kenya's arid and semi-arid regions.

Statement of the Problem

Despite the existence of legal frameworks and institutional mechanisms for land governance and conflict resolution, challenges persist in their implementation and effectiveness (TI, 2018). According to a report by the International Institute for Sustainable Development (IISD), 76% of land-related disputes in arid and semi-arid counties remain unresolved attributed to inadequate governance mechanisms (IISD, 2019). Furthermore, land conflicts contribute to social displacement and insecurity, particularly among marginalized communities in arid and semi-arid counties (UN, 2020). Reports from the United Nations Office for the Coordination of Humanitarian

Affairs (OCHA) indicate a 65% increase in internal displacement and refugee flows from conflict-affected areas to neighbouring counties (OCHA, 2020). Addressing these issues requires a comprehensive approach that strengthens governance mechanisms, improves access to justice, promotes sustainable land management practices, and fosters dialogue and reconciliation among stakeholders (UN, 2020).

Objective of the Study

The objective of the study was to assess the relationship between Authority Distribution and land conflict resolution in Arid and Semi-Arid Counties in Kenya. The study was framed by the following null hypotheses:

- H_{01} : Authority Distribution does not have a significant relationship with land conflict resolution in Arid and Semi-Arid Counties in Kenya.

LITERATURE REVIEW

Theoretical Review

Polycentric Governance Theory

Ostrom, Tiebout, and Warren (OTW) (1961) introduced the concept of polycentricity to the political science and public administration literatures as a way of making sense of the fact that most metropolitan areas in the United States lack a single dominant political leader, but instead include many local public authorities, each pursuing its own aims in a seemingly uncoordinated manner. Yet many such metropolises ‘work’, in the sense that economic growth, public safety, clean water, secure electrical power, and other local public goods are enjoyed by the residents. Their basic point was that people living and working in densely populated communities want a wide range of local public goods, but different goods are most efficiently produced at different levels of spatial aggregation. Therefore, there is a certain logic to building political economic systems in which public jurisdictions and service delivery units of diverse sizes operate concurrently.

Polycentric governance involves multiple overlapping authorities at different levels that work together to manage complex issues. According to a polycentric theory, all political systems have more centers of power than is implied by such phrases as “*the government.*” Some polycentric theorists, including Ostrom, also advocate for polycentricity as a wise principle of design. They argue that having more centers of power produces better results. This theory suggests that decentralized decision-making and multi-level coordination can enhance governance outcomes. According to Ostrom, the concept of polycentricity encompasses economic markets, legal orders, scientific disciplines, and multi-cultural societies. Ostrom emphasized the important contributions made by public agencies operating across these levels, as well as organizations that would not generally be considered explicitly political, such as neighbourhood associations, inter-state compacts, community councils, and special districts defined for particular policy needs, such as fire protection, schools, and water management. Water resource management often involves numerous governments at different levels in intricate processes of decision-making, service delivery, facilities operation, and usage regulation.

Carlisle and Gruby (2019) applied the polycentric governance theory in a study on resource conflicts and found that in the context of natural resource governance, commons scholars have ascribed a number of advantages to polycentric governance systems, most notably enhanced adaptive capacity, provision of good institutional fit for natural resource systems, and mitigation of risk on account of redundant governance actors and institutions. However, in his study, McGinnis (2016) found that practical approximations of this ideal congruence of structure, process, and outcome will necessarily fall short of fully accomplishing all of these aspirations, and instead tend to fall into six traps or “failures” of polycentric governance: structural inequities, incremental bias, high levels of complexity, structural fissures, coordination failures, and, ultimately, a lack of normative clarity.

Indeed, polycentric governance is often critiqued for having high transaction costs of coordination, for example in comparison to hierarchical governance (McGinnis and Hanisch 2005; Stephan et al. 2019). However, it has important concepts which can be applied as governance mechanism in resource conflict resolution. These include; decentralization, that is, distributing authority across multiple levels of governance; multi-level coordination, which is cooperation among different governance levels to address common issues, and; Flexibility and Adaptability which is the ability to adjust governance approaches based on changing conditions. In relation to the current study, the theory posits that a polycentric governance structure (IV: Authority Distribution) will lead to more effective land conflict resolution (DV) due to improved coordination and flexibility (Ostrom, 2010; Jordan et al., 2015).

Conceptual Framework

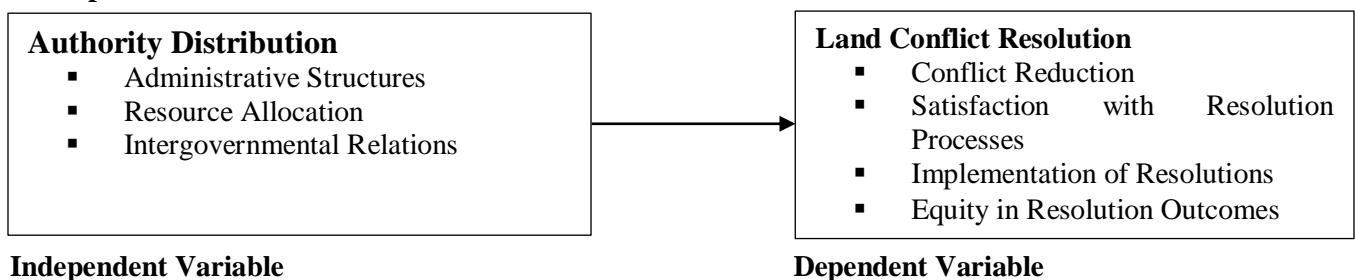


Figure 1: Conceptual Framework

Authority Distribution (Polycentric Governance)

The solution concept authority distribution was formulated by Lloyd Shapley and his student X. Hu in 2003 to measure the authority power of players in a well-contracted organization. The index generates the Shapley-Shubik power index and can be used in ranking, planning and organizational choice. Authority distribution in any context measured on the basis of Multi-Level Leadership and Governance; with the leadership dimension being the distributed leadership across multiple levels and while the governance dimension described by decentralization and multi-level coordination. Management scientists have explored authority distributions from several dimensions including administrative structures (Martin, 2007), resource allocation (Marden, 2016) and intergovernmental relations (Agranoff & Radin, 2015). Ostrom (2010) observed that effective administrative structures facilitate coordination across governance levels. Examples include regional councils, intergovernmental agreements, and local administrative units, therefore, administrative structures which provide the frameworks supporting decentralized governance is an important construct of distributed authority.

According to Hooghe and Marks (2003), equitable and efficient resource allocation supports decentralized decision-making and implementation. Mechanisms include grants, budget allocations, and resource-sharing agreements. As such, it can be argued that resource allocation which involves the distribution of resources to various governance levels is also an important variable of authority distribution. Intergovernmental relations which provide mechanisms for collaboration between different government levels has also been identified as an important predictor for authority distribution (Agranoff & Radin, 2015). Marks and Hooghe (2004) observed that strong intergovernmental relations are essential for cohesive governance. These can be formal (e.g., intergovernmental committees) or informal (e.g., regular intergovernmental meetings).

Empirical Review

Distributed Authority and Land Conflict Resolution

Mwangi et al. (2021) study on the role of administrative structures in land conflict resolution: a case study of ASAL Counties in Kenya. This study aimed to analyze the effectiveness of administrative structures in resolving land conflicts in Arid and Semi-Arid Lands (ASALs) of Kenya. Drawing from governance theory, which emphasizes the role of administrative bodies in managing conflicts, a mixed-methods approach was employed, combining qualitative interviews with key stakeholders and quantitative analysis of land conflict resolution outcomes. The findings revealed that administrative structures such as administrative tribunals and registration agencies play a crucial role in resolving land conflicts in ASAL counties. However, challenges exist in terms of accessibility, transparency, and capacity-building within these structures, highlighting the need for targeted interventions to enhance their effectiveness.

Ndungu et al. (2020) study assessed the impact of administrative tribunals on land conflict resolution in asal regions: a comparative analysis. This study aimed to assess the impact of administrative tribunals on land conflict resolution outcomes in ASAL regions of Kenya. Grounded in conflict resolution theories, which emphasize the role of third-party intervention in resolving disputes, a longitudinal design involving surveys and interviews with stakeholders involved in land conflict resolution processes was utilized. The study revealed that administrative tribunals have contributed significantly to the resolution of land conflicts in ASAL regions by providing accessible and impartial platforms for dispute resolution. However, challenges remain in terms of enforcement and implementation of tribunal decisions, calling for stronger institutional support and coordination.

Owino et al. (2019) study explored the stakeholder perspectives on registration agencies in land conflict resolution: a qualitative study in ASAL Counties of Kenya. Anchored in stakeholder theory, this qualitative study aimed to explore stakeholder perspectives on the role of registration agencies in land conflict resolution in ASAL counties of Kenya. In-depth interviews and focus group discussions with stakeholders, including government officials, community leaders, and landowners, were conducted. The findings identified registration agencies as key players in land conflict resolution, particularly in formalizing land transactions and ensuring compliance with legal requirements. However, stakeholders expressed concerns regarding bureaucratic processes, lack of transparency, and delays in land registration, suggesting areas for improvement to enhance the effectiveness of registration agencies in resolving land conflicts.

Land Conflict Resolution

Chigbu (2017) study examined community-based land conflict resolution in Nigeria: Achievements, Challenges, and Prospects: Chigbu's study aimed to investigate the effectiveness of community-based land conflict resolution mechanisms in Nigeria. Through a qualitative case study approach, involving communities and stakeholders involved in land conflict resolution, the research explored the achievements, challenges, and prospects of such mechanisms. Drawing on social exchange theory, findings revealed that while community-based mechanisms were effective in some cases, they faced challenges related to power dynamics, lack of institutional support, and cultural factors. The study emphasized the need for improved governance structures and capacity-building initiatives to enhance the effectiveness of community-based conflict resolution.

Deininger and Castagnini (2006) focused on the Incidence and Impact of Land Conflict in Uganda: This study conducted by Deininger and Castagnini aimed to assess the impact of land tenure regularization on land conflicts in Peru. Utilizing quantitative analysis with household survey data, the research focused on rural households in Peru. Drawing on property rights theory, the findings indicated that land tenure regularization reduced the

incidence and intensity of land conflicts. It led to improved land tenure security and increased investment in land-related activities among rural households, suggesting positive outcomes of tenure regularization interventions.

Muchuru and Kimani (2018) study examined the mediation as an alternative dispute resolution mechanism in resolving land disputes in Kenya: A Case of Kisumu County: This study conducted by Muchuru and Kimani aimed to examine the role of mediation in resolving land conflicts in Kenya, with a specific focus on Kisumu County. Employing a mixed-methods approach involving surveys and interviews with residents and stakeholders, the research explored the effectiveness of mediation as an alternative dispute resolution mechanism. Drawing on conflict resolution theory, findings revealed that mediation effectively resolved land conflicts by facilitating dialogue, negotiation, and consensus-building among disputing parties. The study underscored the importance of formalizing mediation processes and building the capacity of mediators to handle land disputes effectively.

METHODOLOGY

The study adopted descriptive and correlational research designs. For this study on governance mechanisms for land conflict resolution in ASAL counties in Kenya, the target population is 803 individuals from the 23 ASAL Counties.

The study used a sample of 206 respondents.

In order to calculate the sample for each stratum, the study adopted the following formula:

$$Y_1 = \frac{206 \times X_1}{803}$$

Where Y_1 = Number for each stratum to be selected in the sample.

X_1 = Is the total number of respondents in each stratum

By combining stratified and random sampling techniques, the researcher achieved a balance between selecting participants based on their relevance to the research objectives

The pilot study was done to test validity and reliability of the research instruments. The pilot study was conducted on 27 respondents that is 10% of the sample size was randomly selected and the findings were not included in the final study

To ensure convergent validity, the study used factor loadings.

From the piloted responses, using Statistical Package for Social Scientists (SPSS) version 26, Cronbach Alpha coefficient was calculated on the study variables to determine construct reliability.

Analysing qualitative data on the relationship between governance mechanisms and the land conflict resolution in ASAL counties in Kenya involves a systematic approach to identify patterns, themes, and insights from textual information obtained from various sources such as interviews, focus groups, reports, and documents. The researcher used NVIVO software which is a widely used qualitative data analysis software that allows researchers to organize, code, and analyze qualitative data from various sources It provides features for coding, categorizing, and visualizing data, as well as tools for exploring patterns and themes within the data

The quantitative data was analysed by the use of descriptive and inferential analysis. Descriptive (frequencies and percentages) were used to portray the sets of categories formed from the data.

FINDINGS

Response Rate

The study achieved a high response rate, with 150 out of 206 distributed questionnaires being returned, representing 72.8% of the sample.

Descriptive Analysis

Authority Distribution and Land Conflict Resolution

The objective of the study was to determine the relationship between Authority Distribution and land conflict resolution in Arid and Semi-Arid Counties in Kenya. The authority distribution variable was considered in terms of; Administrative Structures, Resource Allocation, and Intergovernmental Relations. Administrative structures serve as a key governance mechanism for land conflict resolution in Kenya's ASAL regions by providing local representation, government authority, a legal framework, resource allocation, community engagement, coordination, and conflict prevention. The Likert scale was employed to gauge respondents' perceptions of the statement, with options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), enabling participants to express their degree of agreement or disagreement with the statement. In order to guide analysis and interpretation purposes, a mean close to 1 indicates strong disagreement with the statement; a mean close to 3 suggests neutrality or ambivalence; and a mean close to 5 indicates strong agreement with the statement. Moreover, based on the standard deviations ranging from approximately 1.0 or lower may indicate a relatively high level of agreement or consensus among respondents (lower variability). Standard deviations exceeding 1.0 or higher suggest greater diversity or disagreement among respondents (higher variability).

Table 1: Authority Distribution and Land Conflict Resolution

Statement	SA(%)	A(%)	N(%)	D(%)	SD(%)	Mean	Std. Dev
The administrative structure for land conflict resolution is effective in our area	6.7	40	26.7	18.7	8	3.5	1.041
Coordination across different levels of governance is well-facilitated by the administrative structures	26	33.3	27.3	5.3	8	3.71	1.083
Administrative frameworks support decentralized governance effectively	26.7	41.3	22	6	4	3.64	1.239
Resources for land conflict resolution are distributed equitably across different levels of governance	27.3	39.3	18	7.3	8	3.61	1.225
The resources allocated are adequate to address land conflict resolution needs	37.3	24.7	23.3	8.7	6.0	3.92	0.973
Resource allocation supports effective decentralized decision-making	24.7	38	22	7.3	8	3.64	1.045
Intergovernmental meetings addressing land conflicts occur regularly	38	36.7	6.7	16	2.7	4.04	1.108
There are effective formal mechanisms for intergovernmental collaboration on land conflict resolution	29.3	35.3	24.7	5.3	5.3	3.8	0.983
Informal mechanisms for intergovernmental collaboration are effective in resolving land conflicts.	40.7	26.7	25.3	4	3.3	4.01	0.973
Aggregate	.	.	.	.	.	3.699	1.075

Table 1 shows that the aggregate mean was $M = 3.669$ and standard deviation, $SD = 1.075$. The means are high and the standard deviation greater than one (1), this means that respondents agreed with considerable variations on the role of authority distribution on land conflict resolution. Most respondents agreed with a low mean of 3.5 that the administrative structure for land conflict resolution is effective in their area. There were indications that coordination across different levels of governance is well-facilitated by the administrative structures (mean = 3.71). The results also show that administrative frameworks support decentralized governance effectively as indicated by most respondents who agreed with a mean of 3.64. Further, there were indications that resources for land conflict resolution are distributed equitably across different levels of governance (mean = 3.61), and the resources allocated are adequate to address land conflict resolution needs (3.92). Respondents were also of the view that resource allocation supports effective decentralized decision-making (mean = 3.64). Respondents also strongly agreed that intergovernmental meetings addressing land conflicts occur regularly (mean = 4.04). The findings also show that there are effective formal mechanisms for intergovernmental collaboration on land conflict resolution (mean = 3.8). Also, respondents strongly agreed that informal mechanisms for intergovernmental collaboration are effective in resolving land conflicts.

Qualitative analysis

Respondents were first asked to describe the administrative structure used for land conflict resolution in their area. Their responses were that, *“At the county government there is a department of cohesion and special programme and resources are allocated for some serious Land conflict i.e., boundary conflict resolution.”* Also, *“Sometimes National land commission officials also carryout conflict resolution and resources are provided by the complainants.”* A key respondent was of the view that, *“Cases are reported to the chief or the police and there are no elaborate structures or systems to handle conflict resolution.”*

When asked how effective are these structures in facilitating coordination across different levels of governance, the respondents were of the view that they were “Not very effective” and that, “Land conflict resolution processes are not very elaborate and well documented all reports are handle case by case.”

In relation to the question regarding resources allocation for land conflict resolution in their area. The respondents were of the view that no official budget allocated and also that sometimes complainants are asked to provide resources. The respondents further indicated that the resources provided are not sufficient and equitably distributed.

When asked to describe the mechanisms used for intergovernmental collaboration in land conflict resolution, respondents were of the view that, *“Sometimes both county governments through NLC/chiefs/subcounty commissioners and administrators from county governments come together to carryout conflict resolutions.”* Also, when asked how effective are these mechanisms in resolving land conflicts, the respondents were of the view that, *“the above process were not well incurred on the law and not well defined and hence not very effective.”*

Qualitative analysis

Land Conflict Resolution

The Likert scale was employed to gauge respondents' perceptions of the statement, with options ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), enabling participants to express their degree of agreement or disagreement with the statement. In order to guide analysis and interpretation purposes, a mean close to 1 indicates strong disagreement with the statement; a mean close to 3 suggests neutrality or ambivalence; and a mean close to 5 indicates strong agreement with the statement. Moreover, based on the standard deviations ranging from approximately 1.0 or lower may indicate a relatively high level of agreement or consensus among

respondents (lower variability). Standard deviations exceeding 1.0 or higher suggest greater diversity or disagreement among respondents (higher variability).

Table 2: Land Conflict Resolution

Statement	SA(%)	A(%)	N(%)	D(%)	SD(%)	Mean	Std. Dev
There has been a noticeable reduction in the frequency of land conflicts over the past year	16.7	16.7	11.3	53.3	2	3.03	0.549
The number of land conflicts recorded this year has decreased compared to previous years.	1.3	4	25.3	53.3	16	2.86	1.124
Conflict reduction efforts are effective	22	23.3	16.7	20	18	3.11	1.426
I am satisfied with the fairness of the land conflict resolution process	16	18	20	22.7	23.3	3.05	1.353
The resolution process is transparent and inclusive	20.7	19.3	16.7	26	17.3	3.00	1.409
The resolutions agreed upon during the conflict resolution process have been fully implemented	19.3	38.7	13.3	24	4.7	3.48	1.108
There are no significant challenges hindering the implementation of conflict resolution agreements	16.7	18	14.7	28.7	22	2.79	1.407
The implementation of resolutions has been timely and effective	15.3	16	18	27.3	23.3	2.73	1.385
The conflict resolution outcomes have been fair to all parties involved	19.3	16.7	20.7	20	23.3	2.89	1.44
The needs and concerns of marginalized groups have been adequately addressed in the resolution process.	24.7	18	20.7	18.7	18	3.13	1.439
The resolution outcomes are perceived as equitable by all stakeholders	18	22	20.7	14.7	24.7	2.94	1.443
Aggregate	.	.	.	.	.	3.02	1.272

Table 2 shows that the aggregate mean, $M = 3.02$ and standard deviation, $SD = 1.272$, the mean value is low and there is a wide variation on the responses as indicated by the standard deviation. Therefore the implication for the values is that respondents are neutral about the the status of land conflict resolution in the ASAL areas of Kenya. Respondents disagreed with a mean of 3.03 that there has been a noticeable reduction in the frequency of land conflicts over the past year. Respondents also disagreed that the number of land conflicts recorded this year has decreased compared to previous years (mean = 2.86). Consequently, there was uncertainty on whether the conflict reduction efforts are effective (mean = 3.11). There are strong indications that most respondents were not satisfied with the fairness of the land conflict resolution process (mean = 3.05). Respondents further disagreed that the resolution process is transparent and inclusive (mean = 3.00). Respondents, however, agreed with a low mean of 3.48 that the resolutions agreed upon during the conflict resolution process have been fully implemented. This indicates that resolutions had been partially implemented. However, most respondents disagreed that there are no significant challenges hindering the implementation of conflict resolution agreements (mean = 2.79). There are also indications that the implementation of resolutions has not been timely and effective as shown by most respondents who disagreed with a mean of 2.73. Most respondents further disagreed that the conflict resolution outcomes have been fair to all parties involved (mean = 2.89). Respondents were, however, neutral on whether the needs and concerns of marginalized groups have been adequately addressed in the resolution process (mean =

3.13). Further, there were indications that the resolution outcomes were not perceived as equitable by all stakeholders as shown by respondents who disagreed with a mean of 2.94.

Qualitative Analysis

The qualitative data on land conflict resolution was measured along four constructs; Conflict Reduction, Satisfaction with Resolution Processes, Implementation of Resolutions, and Equity in Resolution Outcomes. Regarding conflict reduction, the respondents were asked whether they had observed a reduction in land conflicts and what would they attribute the developments to. Respondents were of the opinion that land conflict was not reducing but increasing and this was due to; population increases, Climate change and ethnic based politics.

Regarding their level of Satisfaction with Resolution Processes, the respondents were asked to indicate their level of satisfaction with the fairness and transparency of the land conflict resolution process. Typical responses were that, *“Corruption has also found its self even in ADR despite its popularity”*, *“Corruption is even worse in courts”*, and *“This has drastically reduced the fairness of conflict resolution process.”* When asked to show which aspects of the resolution process they found satisfactory or unsatisfactory, the respondents said, *“[the] Period when consensus agreement is reached and all aggrieved parties are happy with the outcome,”* and *“Unsatisfactory when people are not satisfied and proceed to court.”*

Respondents were also probed on their views on the implementation of resolutions. Specifically, they were asked whether the the resolutions agreed upon during the conflict resolution process were fully implemented and they responded that in most cases yes but in a few cases, individuals fail to implement and subsequently come back or look for an alternative place. Regarding the challenges that they face in implementing conflict resolution agreements. Respondents indicated Lack of trust, Time spent on the cases because of increasing conflict and Lack of policy guideline to be followed when handling conflicts.

In terms of equity in resolution outcomes, respondents were asked whether they believed the conflict resolution outcomes were fair to all parties involved. Their views were that, *“A greater percentage is fair in ADR processed conflict cases”*, and also, *“But high dissatisfaction in courts processed cases.”* They were further probed on whether the needs and concerns of marginalized groups adequately addressed in the resolution process. Their responses were that the needs were not adequately addressed in the resolution process. Other views were, *“Customary Land tenure create barriers for Human to own Land”*, and *“Women often experience multiple forms of discrimination, including limited access to and control over Land”* and also *“Women may not be involved in decisions concerning marital property”*

Diagnostic Tests

Test of Internal Consistency

Bartlett's Test of Sphericity is a statistical test used in factor analysis to determine whether the correlations between variables are sufficiently large for factor analysis to be appropriate. In essence, it examines whether or not the variables included in the analysis are interrelated enough to extract meaningful factors. The null hypothesis for Bartlett's Test of Sphericity is that the variables in the correlation matrix are uncorrelated. Chi-square: This is the test statistic, which measures the discrepancy between the observed correlation matrix and the identity matrix (a matrix with ones on the diagonal and zeros elsewhere). A larger chi-square value indicates greater discrepancy. P-value: This indicates the probability of observing the chi-square value (or one more extreme) under the null hypothesis that the variables are uncorrelated. A low p-value (typically below 0.05) suggests that the null hypothesis can be rejected, indicating that the variables are significantly correlated.

Table 3: Bartlett's Test of Sphericity

Variable	KMO and Bartlett's Test	Approx. Chi-Square	df	Sig.
Authority Distribution	Kaiser-Meyer-Olkin's Sampling Adequacy.	0.568	36	0.000
	Bartlett's Test of Sphericity	1.306		
Land Conflict Resolution	Kaiser-Meyer-Olkin's Sampling Adequacy.	0.505	55	0.000
	Bartlett's Test of Sphericity	1.169		

Given that all the p-values in the current study's results are 0.000 (which is likely rounded from a very small value), it indicates strong evidence against the null hypothesis. The correlation matrix of the variables in the dataset diverges significantly from the identity matrix, that is, it is not orthogonal, hence we know a data reduction technique is suitable to use. In other words, the correlations between all pairs of variables are statistically significant, suggesting that factor analysis is appropriate for the data.

Test for Normality

The Kolmogorov-Smirnov and Shapiro-Wilk tests are fundamental tools for evaluating the normality of data distributions, crucial for many statistical analyses. In this finding, both tests were applied to assess the normality of variables including Authority Distribution and Land Conflict Resolution.

Table 4: Normality Tests

Variable	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Authority Distribution	0.213	209	0.143	0.532	209	0.318
Land Conflict Resolution	0.417	209	0.916	0.917	209	0.456

Both tests yielded p-values above the conventional threshold of 0.05, suggesting that these variables follow approximately normal distributions. All the variables were normally distributed since the p-values for the two tests were above 0.05 hence we fail to reject the null hypothesis. This implies that parametric statistical methods can be appropriately applied to these variables with confidence in the validity of the normality assumption.

Inferential Analysis

Correlation Analysis

Correlation is a bivariate analysis that measures the strength of linear association between two variables and the direction of the relationship. According to Cohen, Cohen and Aiken (2013), Pearson (*r*) correlation is the most widely used correlation statistic to measure the degree of the relationship between linearly related variables and this was adopted in this study. To measure the strength of the relationship, the value of the correlation coefficient varies between +1 (positive one) and -1 (negative one). When the value of the correlation coefficient lies around ± 1 , then it is said to be a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the two variables will be considered to be weaker. The direction of the relationship is simply the +sign (indicating a positive relationship between the variables) or -sign (indicating a negative relationship between the variables). Pearson Product moment correlation was used to determine the relationship between independent variable, Authority Distribution and the dependent variable, land conflict resolution in Kenyan ASAL Counties.

Table 5: Correlation Matrix for Independent and Dependent Variables

		Authority Distribution	Land Conflict Resolution
Authority Distribution	Pearson Correlation		1
	Sig. (2-tailed)		
	N	149	
Land Conflict Resolution	Pearson Correlation	.439**	1
	Sig. (2-tailed)	0.002	
	N	149	149

The correlation results in Table 5 further show that there was a significant correlation between authority distribution and land conflict resolution (LCR) ($r = 0.439$, $p = 0.002 \leq 0.05$). This indicates that there was considerable emphasis on authority distribution and this was significantly associated with better land conflict resolution outcomes in Kenyan ASALs. The significant positive correlation between authority distribution and land conflict resolution suggests that enhancing administrative capacities, such as clear Administrative Structures, Resource Allocation, and Intergovernmental Relations, can lead to more successful resolution of conflicts in ASAL regions. Studies such as those by Mwangi (2007) and Nyariki et al. (2016) emphasize the importance of clear administrative structures and efficient land management systems in resolving conflicts. They argue that well-defined administrative frameworks contribute to clarity in land tenure, reduce ambiguity in property rights, and facilitate smoother resolution processes. These findings support the positive correlation observed between administrative structures and land conflict resolution, suggesting that stronger administrative capacities enhance the effectiveness of conflict resolution efforts. This implies that investing in administrative infrastructure and capacity-building initiatives can contribute to a more stable and conducive environment for land use and development. The literature, including works by Adeniran (2018) and Awoyomi and Omojola (2019), underscores the role of stakeholder participation in promoting inclusive decision-making and fostering community ownership of conflict resolution processes. These studies highlight that when communities are actively engaged in decision-making, they are more likely to accept and adhere to the outcomes of conflict resolution efforts. This aligns with the correlation found between stakeholder participation and land conflict resolution, indicating that increased engagement leads to improved resolution outcomes.

Hypothesis Testing

The hypothesis was tested under the null hypothesis;

H₀₁: Authority Distribution does not have a significant relationship with land conflict resolution in Arid and Semi-Arid Counties in Kenya

The beta value from the multiple regression results indicate that there was a significant relationship between the two variables ($\beta = 0.185$, $p < 0.05$). Consequently, we reject the null hypothesis and conclude that Authority Distribution does indeed have contribute significantly to land conflict resolution in Arid and Semi-Arid Counties in Kenya.

The rejection of the null hypothesis, which posits that Authority Distribution has no effect on land conflict resolution in Arid and Semi-Arid counties in Kenya, carries significant implications for the management of land conflicts in these regions. The regression analysis reveals a statistically significant positive relationship between administrative structures and land conflict resolution effectiveness, as indicated by a test statistic (t-value) of 2.096 and a significance level (p-value) below 0.05. This suggests that improvements in administrative

frameworks, such as land tenure systems, bureaucratic processes, and regulatory mechanisms, play a crucial role in facilitating the resolution of land disputes within the context of Arid and Semi-Arid counties in Kenya. For instance, research by Kameri-Mbote (2018) emphasizes the significance of clear land tenure systems and effective administrative structures in mitigating land conflicts and promoting sustainable land management practices in Kenya's arid and semi-arid regions. The study underscores the role of administrative frameworks in providing clarity on land ownership, facilitating dispute resolution processes, and enhancing community resilience to land-related challenges.

The findings underscore the importance of well-defined administrative structures in addressing the complex and multifaceted nature of land conflicts in these regions. Clear land ownership records, efficient land administration procedures, and transparent governance frameworks are essential for promoting stability, reducing disputes, and fostering sustainable land management practices. By establishing robust administrative mechanisms, policymakers can enhance the efficiency and effectiveness of land conflict resolution processes, thereby contributing to social cohesion, economic development, and environmental sustainability in Arid and Semi-Arid counties. Similarly, Mwangi and Swallow (2020) highlight the importance of transparent and accountable land administration systems in addressing land conflicts and promoting peace and stability in Arid and Semi-Arid counties. Their findings underscore the critical role of administrative structures in ensuring equitable access to land resources, reducing conflicts over land use and ownership, and fostering local development initiatives.

CONCLUSION AND RECOMMENDATIONS

The rejection of the null hypothesis regarding a significant relationship between authority distribution and land conflict resolution in Arid and Semi-Arid Counties in Kenya suggests that these structures play a crucial role in mediating land disputes. Specifically, administrative tribunals have been effective in providing formal adjudication, while registration agencies contribute by ensuring legal documentation and clarity of land ownership. Customary institutions, deeply rooted in local traditions, facilitate resolutions that are culturally acceptable and respected by the community. Additionally, the involvement of private sector entities, through mediation and arbitration services, introduces efficiency and expertise in conflict resolution processes. Together, these diverse administrative structures create a comprehensive framework that significantly impacts the resolution of land conflicts in these regions.

To enhance the effectiveness of authority distributions in land conflict resolution in Arid and Semi-Arid Counties in Kenya, it was recommended to establish mechanisms for greater collaboration and coordination among these diverse entities. This could involve regular meetings, joint training programs, and information-sharing platforms to ensure seamless integration of efforts and resources. Additionally, investing in technology and capacity-building initiatives for administrative staff can streamline processes and improve the efficiency of conflict resolution mechanisms. Moreover, fostering partnerships with local communities and civil society organizations can ensure that administrative decisions are informed by local perspectives and needs, thereby increasing the legitimacy and acceptance of resolutions. By promoting synergy and inclusivity among administrative structures, the resolution of land conflicts can be expedited and outcomes can be more sustainable and equitable.

Policymakers should focus on strengthening the legislative framework governing land use and conflict resolution by updating existing laws and regulations to address emerging challenges and promote sustainable practices. This should involve incorporating customary authorities into formal legal processes, enhancing the capacity and reach of regulatory bodies, and fostering partnerships with Civil Society Organizations (CSOs) to ensure that the rights and interests of all stakeholders are protected and upheld. By investing in education and training programs for stakeholders and implementing robust monitoring and evaluation mechanisms, policymakers can ensure that the

legislative framework is responsive to the needs of local communities and conducive to the resolution of land conflicts in a fair, transparent, and sustainable manner.

Recommendations for Further Studies

Interdisciplinary research integrating perspectives from fields such as environmental studies, sociology, anthropology, and development studies could enrich our understanding of the complex relationships between land use, governance, and conflict dynamics. By drawing on diverse disciplinary perspectives, such studies can uncover the underlying social, cultural, and environmental drivers of land conflicts, as well as the potential synergies and trade-offs between competing governance priorities. This interdisciplinary approach can contribute to more holistic and contextually informed strategies for addressing land conflicts and promoting sustainable land management practices in Arid and Semi-Arid Counties and beyond.

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