

AFRICAN JOURNAL OF BUSINESS, ECONOMICS AND INDUSTRY (AJOBEL)



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nanoschematic

This nanoschematic illustrates the structure of a nanoscale device, showing the arrangement of atoms and molecules. The diagram highlights the complex, interconnected nature of the nanoscale structure, which is essential for understanding its properties and behavior.



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Preamble

Volume 6 of the *African Journal of Business Economics and Industry (AJOBEL)* marks yet another milestone in the journal's commitment to advancing scholarly inquiry and practical knowledge in the dynamic fields of business, economics, and industry across the African continent. In an era defined by economic resilience, industrial innovation, and the growing significance of regional and global partnerships, this volume brings together diverse contributions that reflect both emerging challenges and transformative opportunities within Africa's socio-economic landscape.

The articles featured in this volume offer rigorous theoretical analyses, empirical studies, and case-based insights from scholars, practitioners, and policymakers. Key themes explored include sustainable industrial development, entrepreneurial ecosystems, digital transformation, trade and investment trends, and the role of economic policy in fostering inclusive growth. Special attention is given to the intersection of traditional industries with contemporary technological advancements, underscoring the continent's unique position in shaping the future of global economic discourse.

AJOBEL continues to serve as a vital platform for intellectual exchange and evidence-based dialogue, encouraging contributions that not only deepen academic understanding but also inform practice and policymaking. Volume 6 upholds this tradition by fostering multidisciplinary engagement and promoting research that is locally grounded yet globally relevant.

We extend our sincere appreciation to the authors, peer reviewers, editorial team, and partner institutions whose dedication and expertise have made this volume possible. We remain committed to supporting high-quality research that contributes meaningfully to Africa's economic and industrial transformation.

Chief Editor

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UTILIZATION OF INDIGENOUS KNOWLEDGE SYSTEM IN DISPUTE RESOLUTION MECHANISM AMONG THE MAASAI COMMUNITY IN KAJIADO COUNTY, KENYA

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Abstract

Disputes and conflicts are ubiquitous occurrences with both negative and positive effects on social and economic development of societies and nations in Kenya. Numerous cases are outstanding in the formal court systems, despite the alternate dispute resolution mechanisms. There are numerous indigenous dispute resolution (IDR) mechanisms; hence the need for studies seeking to evaluate the positive contribution of the IDR mechanisms in dispute resolution among communities in Kenya. This paper examined use of indigenous knowledge system in dispute resolution among the Maasai community in Kajiado County, Kenya. The study employed a mixed-method research design. The target population was 5,202 individuals aged 75 years and above (including 55 locational chiefs, and 116 assistant chiefs) from four Sub-Counties of Kajiado County. 371 individuals were sampled through multi-stage sampling criteria. Data was collected using focus group discussions and questionnaires. Qualitative data was collected and analysed thematically while quantitative data was analysed descriptively. Results showed that indigenous knowledge was used in resolving land disputes, matrimonial disagreements, Livestock theft cases and interpersonal conflicts with elders arbitrating the cases.

Keywords: Indigenous Knowledge, Indigenous Knowledge System, Dispute, Dispute Resolution Mechanism, Kenya.

Background of Study

Dispute resolution mechanisms include formal judicial and alternate dispute resolution mechanisms. The most noticeable form of dispute resolution mechanism has been the state intervention such as the deployment of security forces which does not holistically resolve the conflict¹. Dispute resolution mechanisms in Africa include formal and traditional justice systems the latter being predominantly used by the rural populations. Traditional justice structures in South Sudan resolve as much as 90% of civil and criminal disputes². Formal and informal systems as exhibited by the Nigerians³.

Indigenous knowledge has guided human societies in their numerous interactions with the natural environment through agricultural activities, management of disease and injury; conflict resolutions; naming and explaining natural phenomena, and how best to cope with dynamic environments. It is through this fine-grained engagement of society with environment that indigenous knowledge systems have evolved versatility and complexity to enable interpretation and ability to cope with environmental dynamics. Thus, indigenous communities have long used indigenous dispute resolution (IDR) to solve intra- and inter-communal conflicts based on their cultural wisdom and experiences. The indigenous knowledge systems (IKS) are defined as intrinsically encoded social processes of the communities⁴ that are distinctly built on methodologies, philosophies, and criteria.

Indigenous knowledge systems are tacitly or explicitly transferred across the generations through cultural and social events, oral media through art and drawings, experiences, folk tales, real-life stories, rituals, songs, traditional norms, laws and legends. In Africa, many ethnic groups still organize themselves around traditional political systems making IDR mechanisms a dominant justice system at the local levels in many African countries⁵.

Statement of the Problem

Disputes have become increasingly intractable as a result of weakened traditional governance systems; the breakdown of inter-communal social contracts; elders' loss of control over the youths; the persistence of *moran* (warrior) culture; and politicisation of peace-making processes^[8]. Cox et al 2014 ^[9] noted that peace architecture in Kenya remains

fairly weak due to the institutionalized political, economic and social fundamentals. The alternative dispute resolution (ADR) which includes indigenous dispute (IDR) resolution mechanisms are anchored in legal and policy frameworks such as the Constitution of Kenya 2010, the Judiciary of Kenya policy framework as well as the international and regional human rights instruments and sustainable development goals ^[10]. Traditional disputes resolution is considered effective in dealing with interpersonal or inter-community conflicts ^[7]. However, the biggest challenge confronting humans is not about the occurrence of disputes per se, but how these disputes are fully resolved. This paper examined utilization of indigenous knowledge system in dispute resolution mechanism among the Maasai community in Kajiado County of Kenya.

Objective of the study

The objective of this study was to investigate utilization of indigenous knowledge system in dispute resolution among the Maasai community in Kajiado County of Kenya.

Literature Review

There are a number of IDR mechanisms depending on the community and location. The Afar people of Ethiopia use the Madáa system of governance which prescribes, among other things, how inter and intra-clan disputes are to be resolved, based on customary laws which are passed down orally through the generations ^[12]. The Borana have an IDR mechanism named the '*Gadaa*' system which is headed by Abba gadaa or the leader of *Gadaa*. On the other hand, the Somali community in Ethiopia have an IDR mechanism headed by a governing unit the *guurti* (the council of elders) while in Kenya, the Turkana have the tree of men (*Ekitoe Ng'ekeliok'*), the Pokot the Kokwo. The Miji Kenda of Kenya have the *Kayas*, the Meru the *Njuri Ncheke*, the Kikuyu the *Kiama* and the Luo the *Ker* ^[6]. The Mbeere have the *mutongoria wa kithaka* while the Kipsigis community have the *Kamasian* ^[13].

The indigenous dispute resolution (IDR) mechanism takes the form of participatory justice and communal enterprise and works within the traditional framework; the process makes use of cultural process which capitalizes on cultural affinity. The use and application of IDR mechanism was the main methods of dispute resolution in the pre-colonial period and to some extent resembled ADR, but the uniqueness is truly indigenous and unique to the

communities or natural settings. Indigenous dispute resolution processes were seen as an alternative to any of the dispute resolution mechanisms. The use and application of indigenous dispute resolution mechanisms was prevalent in pre-colonial Africa ^[6] and had a substantial degree of success in ensuring peaceful coexistence of groups and in maintenance of order.

According to Murithii 2017 ^[11], the IDR mechanisms have been accepted widely especially in Africa because they appeal to local cultural norms and leadership framework structures hence the outcomes were more likely to be internalized and understood by the concern parties, the indigenous processes are inclusive promoting public participation seeking consensus when addressing the root causes of conflicts, leading to sustenance of peace since the processes are drawn from local cultural assumptions, values, norms, as well as traditional and community-based political dialogue and justice. Lastly, indigenous processes are cost-effective in the sense that they depend on a community's based internal resources rather than the infusion of funds from external actors or government.

The indigenous justice systems in Africa have survived in various forms especially in rural communities serving large population ^[3]. The IDR mechanisms are centred on the values of truth, justice, forgiveness, reconciliation, voluntary participation, and emphasis on complaint behaviour. Many indigenous conflict resolution mechanisms are accompanied with the ritual symbol of reconciliation ^[5]. The ritual process in conflict resolution is made to strengthen the terms of reconciliation and to limit conflict reoccurrence where the parties consent and mutual agreement takes precedence over imposed outcomes to improve and restore conflict peacefully. Predominantly, the dispute resolution process in African societies provided the disputants with an opportunity to air their grievances, to express themselves fully, without complexity or formality, an element which connotes fairness. This study sought to understand the extent to which indigenous knowledge systems are used to resolve disputes among the Maasai community of Kajiado County, Kenya. This was done through interrogation to establish the disputes commonly resolved using indigenous methods; traditional practices or rituals involved in dispute resolutions and how often are disputes resolved through indigenous dispute resolution mechanisms.

Methods

Mixed-method research design was used with a target population of 5,202 individuals aged 75 years and above (including 55 locational chiefs, and 116 assistant chiefs). A multistage approach was applied, incorporating purposive and clustered techniques to obtain the study population. The sample size was 371 and the tools for data collection were focus group discussions and questionnaires. Data collected was analysed and presented in form of tables and bar charts.

Results and Discussions

Disputes Commonly Resolved using Indigenous Methods

Focus group discussion was held with key community elders on how commonly resolved disputes using indigenous methods for both male and female residents of Kajiando County and the response was summarised in figure 1 below:

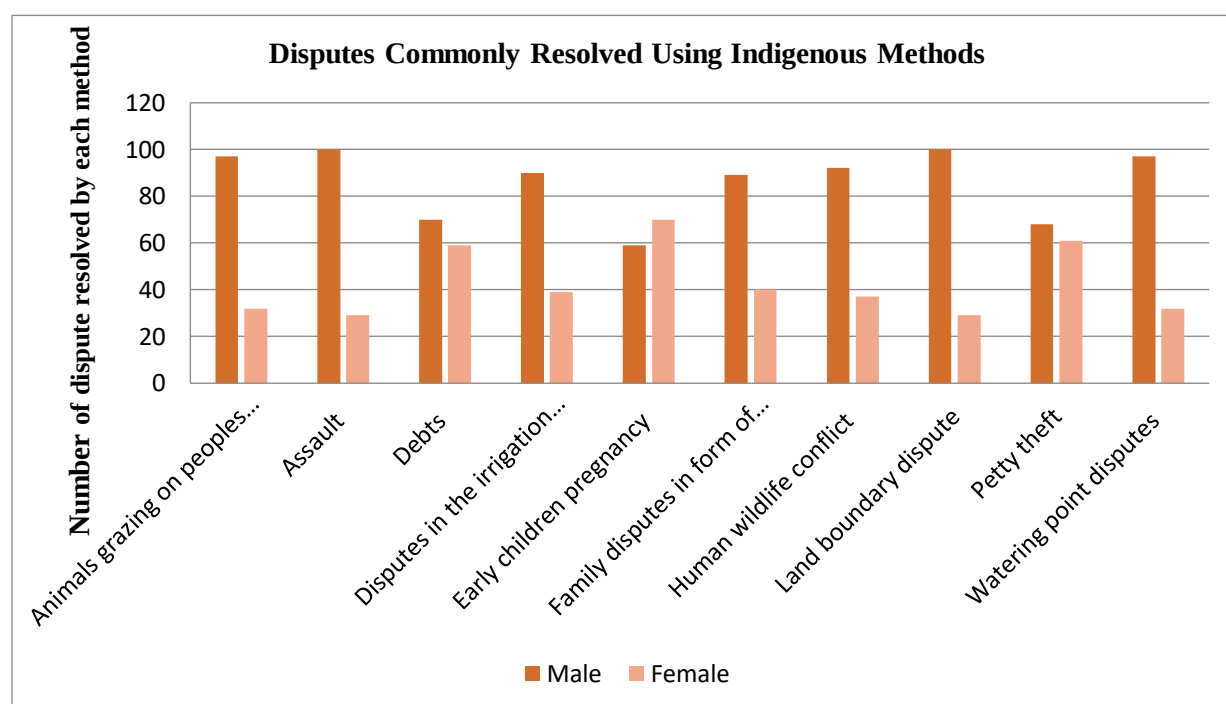


Figure 1: Disputes Commonly Resolved Using Indigenous Methods

Some of the responses from focus group discussion recorded included:

“When we resolve conflicts through our traditional ways, we are not just fixing a problem between two people – we are healing the community's soul. The ceremonies, the shared meals, the blessings –

these are not empty gestures but sacred acts that restore harmony not just between people but between us and our ancestors who watch over us.” [Respondent 1]

The responses highlighted the extensive reliance on indigenous knowledge to resolve a variety of disputes, including land boundary disagreements (100 male, 29 female), family conflicts involving gender-based violence (89 male, 40 female), and human-wildlife conflicts (92 male, 37 female). Additionally, disputes over animals grazing on crops (97 male, 32 female) and irrigation scheme conflicts (90 male, 39 female) were also commonly resolved through indigenous methods. Cases of early childhood pregnancy (59 male, 70 female) and petty theft (68 male, 61 female) further illustrate the breadth of conflicts addressed through these mechanisms.

As provided in figure 1 above, it is evident that disputes arising from livestock grazing on crops are common in agrarian and pastoral communities where land serves as a vital resource for both agriculture and animal husbandry. To resolve such disagreements, application of indigenous methods become phenomenal resolving conflicts through mediation by local elders or leaders,” this statement is supported by ^[14] who observed that, in such a scenario, the procedure commonly starts with the affected farmer presenting their side, in this case, claiming that they have suffered damage to their crops, to which the livestock owner is afterwards given a chance to defend themselves. It is usually within the community norms that elders bless or share meals with the disputants symbolizing restoration of harmony after issuing compensation which is most customary in livestock, produce or monetized form ^[15].

The cases of physical assault were addressed through indigenous mechanisms that emphasized restoration and reconciliation rather than punishment; the elders mediated these disputes by bringing together the victim and the perpetrator to discuss the incident in a neutral and respectful setting. Resolutions often involve public apologies, restitution in the form of labor or monetary compensation, and symbolic acts such as blessings or communal meals to restore trust. These findings were in agreement with observations of

Shretha et al 2014 ^[16] who argued that the involvement of the broader community ensures accountability and reinforced the importance of non-violence as a shared value.

On disputes connected to debts, the disputes were settled through community approaches which are restorative and based on consensus. Local leaders talk to the creditor and debtor and allow them to converse freely on the matter guided by the mediator. Solutions entail arranged payment negotiations, repayment through cancellation of debt, or monetary compensation through services in lieu of payment. Forgiveness or meals shared between the parties signify restoration of peace and resolution, reinforcing cordial relations in the aftermath of the dispute while marking reconciliation. With regard to the disputes pertaining early adolescent pregnancy, the community leaders mediated the dispute by pulling together the families of the people in question to discuss the matter and to reach a consensus. This observation coincides with the observation of Keddell et al 2021 ^[17] who argued that, the resolution structures to arrive at the solution of resolving disputes arising from early adolescent pregnancy always entailed discussions about responsibilities, such as caregiving arrangements or financial support which was accompanied by rituals to signify reconciliation and acceptance. By ensuring these disputes are addressed in a culturally sensitive way; indigenous mechanisms promoted accountability while fostering understanding and compassion.

Violence against women was solved through community initiatives which emphasized protection and reconciliation. The process entailed accepting the harm caused and the measures to avert recurrence as well as providing support to the affected person. The key resolutions included making apology in public, compensation, or the imposition of fines which were accompanied by symbolic acts such as communal meal to restore harmony and institute blessings. Naime 2024 ^[18] noted that when dealing with the root causes of violence and promoting restorative justice, indigenous dispute resolution mechanisms provides a culturally sensitive substitute to punitive legal systems.

Conflicts that arose from wildlife crop destruction or livestock predation were determined through IDR mechanisms which putting more emphasis on sustainability and coexistence.

Resolutions reached often included compensation or payment for damages, agreed-upon preventive measures usually accompanied by ritual to promote harmony between human beings and nature. Land border disputes resolution is reached through mediated processes conducted by elders and resolutions often resulted in marking of borders which all parties consented to testify as agreeing witnesses. Symbolic acts such as sharing communal meals reinforced the agreement and restored harmony among the contesting parties. This observation is supported by observations of Tenam and Abebe 2022 who alluded that, by providing culturally relevant and lasting solutions, these mechanisms (IDR) prevented disputes from escalating and promoted sustainable land management practices. The solution for petty theft disputes was offered through restorative justice practices that put more emphasis on accountability and compensation and the resolutions reached often entailed compensation for stolen items, offering public apologies which were accompanied by symbolic acts such as blessings or sharing meals to signify forgiveness and reconciliation

Both the NGAO community and local leaders emphasized restorative nature of indigenous dispute resolution mechanisms, which prioritize reconciliation over punitive measures. Their insights revealed the role of community elders and respected leaders in mediating conflicts through traditional rituals such as peace meetings, fines, communal meals, and spiritual ceremonies. A key strength observed among the respondents was their clear understanding of cultural norms and historical agreements, which serve as the foundation for fair and sustainable dispute resolutions.

Summary of Traditional Practices or Rituals used in Dispute Resolutions

Results of this study highlights various methods used in dispute resolution among the Maasai population of Kajiado County of Kenya revealing a spectrum of practices ranging from punitive measures to reconciliatory rituals as summarized on table 1 and figure 2 below.

Table 1: Traditional Practices or Rituals involved in Dispute Resolutions

Cases Solved By Each Method	Frequency	Percent of responses	Percent of cases
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Fines (Erupet)	65	52.42	52.42
Exile	11	8.87	8.87
Spiritual cleansing and taboos	20	16.13	16.13
Forced divorce	6	4.84	4.84
Community policing through beating	11	8.87	8.87
Peace meetings and sharing meals	1	0.81	0.81
Rituals	2	1.61	1.61
Curse	8	6.45	6.45
Total	124	100	100

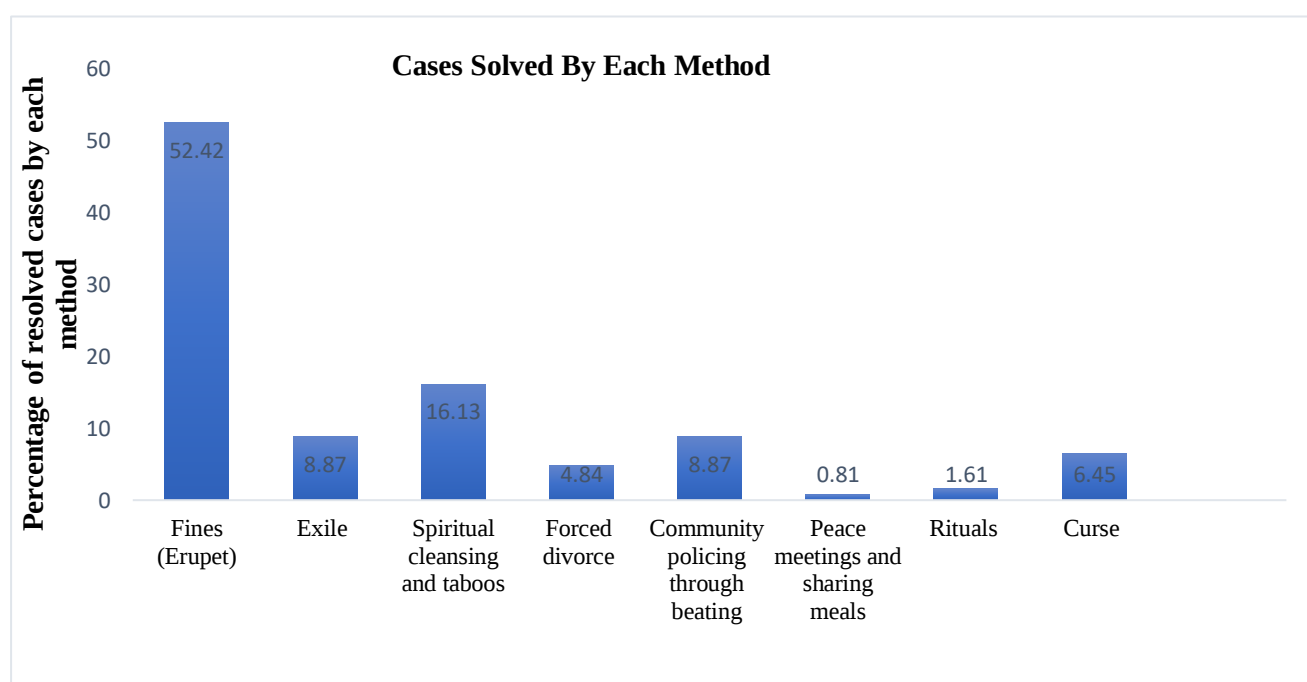


Figure 2: Traditional Practices or Rituals used in Dispute Resolutions

From the findings as summarized from table 1 and figure 2 above, monetary fines are a widely accepted method 52.42% of cases used to compensate aggrieved parties. This practice emphasizes accountability while providing restitution, ensuring that offenders acknowledge their wrongdoings and restore balance. As reported by Diab et al 2022 these fines are often determined through communal discussions, ensuring fairness and proportionality to the offense. Symbolic acts, such as public acknowledgments or blessings, accompany payment of fines, reinforcing reconciliation and communal harmony. Exiles, accounted for 8.87% of the cases, where an individual's actions are considered highly disruptive. Exile served as both a deterrent and a means of restoring balance without confrontation. Notably, while exile can effectively remove the immediate source of discord,

it carries the risk of alienating the individual, often exacerbating underlying conflicts if not addressed through rehabilitation measures although this practice gives the community an avenue to regroup and reinstate peaceful coexistence.

Spiritual cleansing is fundamental to Maasai's dispute resolution processes with 16.13% of cases resolved in this manner. Spiritual leaders conduct rituals involving prayers, blessings, accompanied by symbolic items such as sacred herbs and water to cleanse the acrimony or animosity, and to sanctify the resolution process. Use of these rituals is meant to instill spiritual harmony and reaffirm the community's collective obligation to peace. This observation is supported by report of Bernves 2017 ^[14] who argued that, these practices done during indigenous dispute resolution mechanisms symbolizes the community's intent to leave behind animosities and reinforce social bonds. Though less common, forced divorce often occurred in cases of abuse or violence in an intimate relationship, which accounted for 4.84% of the cases. This practice put forth the well-being of the aggrieved party while restoring family peace. Rituals such as returning dowries or performing blessings which accompanied divorce signified closure and promoting healing for all entities involved. Forced divorce only happened as a last-resort guided by the gravity of the wrongdoing and the community's determination to advocate for justice and protect vulnerable members.

For matters associated with minors such as defilement, punitive and stringent actions like public admonishment/rebuke, beatings were administered to uphold communal norms and values. This method accounted for 8.87% of the cases observed from the findings. These measures were taken to prevent repeated offenses and emphasized joint accountability and social order. Peace meetings and shared meals were used in 0.81% of the cases. The act of sharing meals signified reconciliation and restoration of relationships between the disgruntled parties hence showing mutual respect, and fostering of communal bonds. Bernves 2017 ^[14] supported this assertion by arguing that, such rituals provided a room for open dialogue, demonstrating the parties' commitment to honoring resolutions and rebuilding trust. Spiritual practices and curses on the other hand accounted for 6.45% of the cases highlighting the spiritual connotation and symbolic acts involved in dispute resolution. Curses were rooted in the belief of spiritual justice, invoked by elders to prevent

harmful behavior and compel accountability. Tseng et al 2021 [21] observed that curses serve as a powerful deterrent though they remain controversial and are typically reserved for severe cases. Use of spiritual practices and curses shows the interplay between spiritual and social dimensions in indigenous dispute resolution mechanisms emphasizing both deterrence and the moral weight of justice.

From the above results, it is evident that the Maasai community is commitment to restorative justice, spiritual harmony, and social order through diverse dispute resolution practices and mechanisms. Although fines, spiritual cleansing and taboos dominated, the significance of rituals and symbolic acts highlighted the integration of cultural and spiritual elements in dispute resolution using indigenous techniques. However, the controversial nature of practices like curses and community policing highlight areas that may require adaptation or integration into formal systems for broader acceptance. These practices showcase the Maasai community's reliance on traditional systems to maintain peace while highlighting opportunities to modernize and institutionalize indigenous mechanisms of conflict resolution.

Frequency of Disputes Resolved using Indigenous Dispute Resolution Mechanisms

Frequency of dispute resolution using IDR mechanisms in the surveyed community is summarized in figure 3 below:

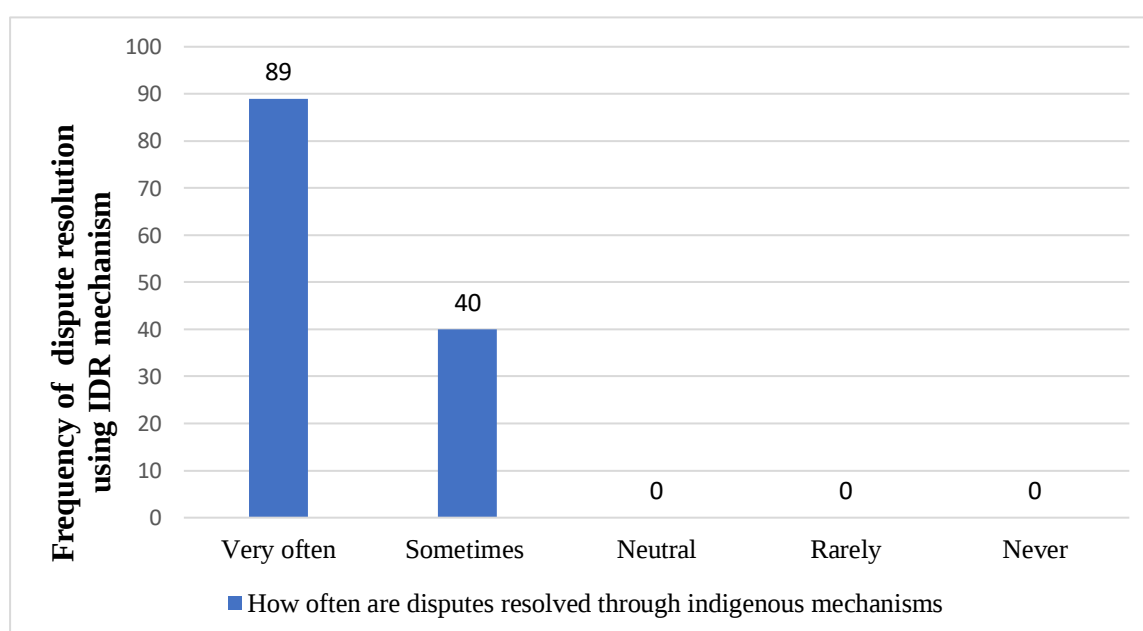


Figure 3: Frequency of Dispute resolution using Indigenous Dispute Resolution

Methods

As shown in figure 3 above, an overwhelming majority of respondents 89 (69 %) indicated that disputes are resolved through IDR mechanisms "very often." 40(31%) of the respondents stated that disputes were sometimes resolved through indigenous means. Notably, there were no responses indicating neutrality, rarity, or absence of the practice

It is evident from these findings that IDR mechanisms remain highly relevant in Maasai community for several reasons. First, they are deeply embedded in cultural contexts, making them accessible and acceptable to the communities they serve. Unlike formal judicial systems, which can be costly and time-consuming, IDRs provide cost-effective, timely, and culturally sensitive resolutions. They focus on reconciliation and restoration rather than punishment, which is particularly valuable in close-knit communities where maintaining harmony is crucial [22]. Thus, by involving elders, local leaders in dispute resolution local leaders and community members, ensured that all voices are heard, fostering collective ownership of decisions. This contrasts with formal Judicial systems, which often alienate disputants through complex procedures and legal jargon. Furthermore, the participatory nature of IDRs enhances credibility and trustworthiness of the process as resolutions are perceived as fair and unbiased.

These findings underscore the prevalence and cultural reliance on indigenous dispute resolution systems within the community. The widespread use of these mechanisms reflects their accessibility, efficiency, and alignment with community values. It also suggests a significant level of trust and confidence in traditional leaders, elders, and local practices in addressing conflicts effectively. The absence of responses in the categories of "rarely" or "never" further emphasizes the central role of the IDR systems in maintaining social harmony and resolving disputes promptly and equitably. As these mechanisms continue to play a dominant role, they offer valuable insights for integrating traditional practices with modern conflict resolution frameworks, particularly in areas where formal judicial systems are inaccessible or underutilize

Conclusion

This study observed that IDR mechanisms played a crucial role in conflict resolution among the Maasai community. These mechanisms addressed land disputes, matrimonial disagreements, livestock theft, and a variety of interpersonal conflicts. The Maasai community relied on culturally embedded methods, such as oral testimonies, mediation, consensus-building, and symbolic rituals. Elders and other community leaders act as key arbitrators, ensuring that disputes are resolved equitably while maintaining cultural traditions. Indigenous knowledge remained highly relevant and continues to be used widely due to its accessibility, cost-effectiveness, and deep-rooted cultural significance and it operates as fundamental components through generational dispute resolution practices of the Maasai community.

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SUPERVISION MANAGEMENT DEVELOPMENT PRACTICE INFLUENCES EMPLOYEE PERFORMANCE IN ORGANIZATION; A CASE OF KENYAN PUBLIC UNIVERSITIES

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Abstract

Universities in Kenya face management shortfall due to failure to meet the set goals and adhering to the laid down procedures. The situation calls for the need to equip management employees with skills, knowledge; capabilities and abilities to perform in the organization. The study was a comprehensive literature and theoretical review. The study adopted descriptive survey research design and targeted top management both in academic and administrative divisions in the universities. Sample size comprised 400 management employees. Respondents were grouped into two strata; teaching and administrative. Respondents in each group were chosen using simple random sampling method. Data was analysed using simple and multiple regression, Analysis of Variance (ANOVA =F test) and t-test were used to analyze the data. The test results indicated that variation in employee performance in Kenyan Public universities could be explained by variation in supervision management development practice. The β was significant ($\beta = 5.858$, $t = 15.377$, $p > 0.05$). The evidence therefore indicated that the model could be used in explaining the influence of supervision management development practice on employee performance in Kenyan public universities. There was a profound influence of supervision on employee performance.

Key words: Supervision, Management, Development, Performance

Introduction

The education sector globally has undergone unexpected changes that have hard-pressed the universities to embark on a range of initiatives to stay afloat. Many universities are turning to human resource development as a strategy to enhance their employees' knowledge, skills and capabilities so that they can compete and maintain a competitive advantage ^[1]. A well-developed employee development scheme enables an organization to achieve in-house employee development through, supervision for this guarantees that the expertise, knowledge, experience and objectives available are harmonized with the requirements of the organization for enhanced performance.

Management development brings about employee empowerment and employee involvement. It is management's response to an increasingly complex and competitive environment. Employee empowerment is deemed critical to organizational efficiency, innovativeness and effectiveness since empowerment initiatives are geared towards enhancing management performance ^[2]. Supervision is a management development practice that specifies how managers guide employees to perform in their roles in the organization and involves assessing and monitoring competency levels and performance in the organization. Supervision thus, prescribes how managers plan, communicate, organize, and control their job requirements to perform better ^[3].

According to Scontrino and Bullock 2021^[4] supervisor support is the degree to which organizational leaders value their employees' contributions and care about their welfare. Benard (2005)^[5], described supervision as the supervisor's ability to influence behaviors and actions of subordinates towards achievement of a particular goal. Worldwide, supervision plays a significant role in safeguarding effective employee productivity and performance in a workplace. Subsequently, it is opined that supervision should be prioritized for progression of employee performance ^[6,7]. Essentially, for organizational outcomes to achieve their intended goals, every business leader should be extremely concerned about the performance of their employees. Notably, it has been observed elsewhere that organizational performance and business success can be attributed considerably to supervision ^[8].

Knowledge regarding the possible association between supervisor-employee relationship and job performance would enable the implementation of more effective systems for management, and subsequently, better productivity for the organization through increased job performance. Because supervisors are responsible for not only meeting corporate goals, but also bridging the gap between upper management and front-line employees. A good supervisor/supervisee relationship is not only beneficial to the individuals but critical to the success of the organization ^[9].

Laporte (2012) ^[11] did an exhaustive study in Ghana and noted that businesses that were more autocratic had dipping productivity levels and therefore advocated for a robust and empowering supervision process. Efficient supervision and appraisal criteria had a positive effect on employee productivity ^[10].

Purpose of the Study

This study determined the effect of employee supervision on job performance of employees working in public universities in Kenya.

Empirical Literature

Carter and Little (2007) ^[12] conducted a research survey on employee supervision. The study included a sample of thirty-three participants who were business executives in an American technology based industrial products company. Supervision used within the company for high potential employees was underpinned by robust theoretical models originating from the field of clinical psychotherapy, and the supervision process used followed a four-stage process. The programme was focused on enhancing emotional competence to support effective leadership and some of the reported outcomes included: more effective leaders, enhanced inter-relations skills, improved commitment, enhanced performance management, increased productivity which are positive indicators of effective supervision and lend support, in particular, to the role of an insight-oriented approach to supervision underpinned by self-awareness.

Apenteng (2012)^[13] studied the effect of supervision on staff performance in the Ga South Municipal Education Directorate and observed that while provision of infrastructure and

personnel are vital for ensuring quality staff performance; absence of supervision could lead to low performance. The outcome of the study indicated that while majority of internal supervisors preferred and advocate for greater emphasis on internal supervisors, the external supervisors preferred the promotion of both systems in the Education Directorate. It also came to light that supervision cannot be overlooked since it is a major tool for better staff performance giving the right supervisors, right tools and right resources. The study showed that Supervision has effect on performance, supervision contributes to staff job satisfaction for improved performance, supervisors must make staff job satisfaction their top priority.

Elsewhere, Housman (2014) ^[14] assessed the Influence of Supervisors on Employee Performance and observed that the way supervisor's work, act, and communicate has profound effects on their employees. This has been proven empirically and resonates with most employees anecdotally. The study used two different companies that provided data on 1,400 supervisors and 3,000 employees across the US and Philippines. Applying a variety of econometric techniques, it was observed that managers do indeed have a very large impact on performance of their employees. Thus, across both the US and the Philippines, supervisors that were referred to their job by another employee perform better than those who were not. However, the study highlighted differences in impact of supervisor education thus more supervisor schooling predicted significantly shorter transaction handling times in North America, but the same measure predicted longer transaction handling times in the Philippines.

Vann (2017) ^[15] analyzed the Relationships between Job Satisfaction, Supervisor Support, and Profitability among Quick Service Industry Employees, In the United States and observed that low levels of employee job satisfaction and low employee perceptions of supervisor were associated with decreased organizational profitability. These findings indicated that improving employee perceptions of supervisor support lead to high levels of employee job satisfaction could affect behavioral social change to enhance the health and wellbeing of employees and the wealth and sustainability of Quick Service franchise locations.

Liu, X. and Batt, R. (2010) ^[16] assessed how supervisors influence performance using a multilevel study of coaching and group management in Technology-Mediated Services. The study examined the role of supervisors in improving employee performance using coaching and group management practices. It examined the individual and synergistic effects of these management practices. Results showed that the amount of coaching that an employee received each month predicted objective performance improvements over time. Moreover, workers exhibited higher performance where their supervisors emphasized group assignments and group incentives and where technology was more automated.

Saeed and Nosheen (2015) ^[17] examined employees' perception about the results of supervision and distinguished certain salient forces which do injure fruitful application of supervision. The study was descriptive in nature and sampled 120 employees at management stages of the manufacturing sector in Punjab area in Pakistan. Results showed that the selected employees were cognizant of the practicality and worth of the supervision. However, they did not have the knowledge of applying an efficient supervision. There were also significant differences in employee perception about supervision at the organization. As far as appraisal criteria is concerned, a reliable and accurate technique through which current and contemporaneous levels of performance is determined must exist. This is then compared with laid down acceptable and conversed standards so as to offer reliable measurements (Sing et al, 2010) ^[8]. There is consequently a need to have quantifiable standards associated with job descriptions and expected outcomes.

Humble (2016) ^[18] did an explanatory study to look at supervision criteria in the service industry in the UK and noted that a performance standard as a declaration of the circumstances which exist when tasks are achieved is needed. He suggested that when an organization should consider setting standards that relate to quality, quantity, time, process and cost.

Elsewhere, Najeeb (2011) studied supervision in Pakistan targeting the Habib Bank Limited in a descriptive design using inferential statistics and observed that clear and reliable appraisal system is important in an organization and the outcomes accruing from supervision positively impacts employee performance significantly. The study also highlighted a need for objective criteria for appraisal to achieve fairness and reliability.

Theoretical framework

The theoretical underpinning of the study was organizational support theory

Organizational Support Theory

According to organizational Support Theory (OST), perceived organizational support is largely dependent on employees' provenances concerning the organization's goals in regard to receiving either favorable or unfavorable treatment. Organizational support theory posits that both self-improvement and social exchange are a consequence of affective organizational dedication. On the subject of personal improvement, Meyer et al. (2006) [20] argue that organizational identification arises from POS effectively leading to affective organizational commitment through enactment of shared values thus promoting stronger bonds among employees and organizational leaders.

Research Methodology

This study adopted descriptive survey research design and targeted top management both in academic and administrative divisions in the universities. Sample size comprised 400 management employees. The study grouped respondents into two; teaching and administrative, within each group chosen using simple random sampling method. Data was analysed using simple and multiple regression, Analysis of Variance (ANOVA =F test) and t-test.

Results

Respondents were asked to indicate to what extent they agreed with the various statements that defined best practices in supervision for management development and they responded to various aspects under the variable on a five point Likert scale (5= very large extent, 4= large extent, 3= moderate extent, 2= less extent and 1= not at all) and the research findings are in the table 1 showing the means and standard deviation for the variables.

Table 1: Best practices in Supervision for Management Development

Best Practices in Supervision for Management Development	N	Mini-Mum score	Maxi-mum score	Mean	Std. dev.	Ranking

The university has a policy's on how manager should be monitoring, assessing performance and competence levels of other managers in alignment to organizational goals.	209	1	5	3.77	.844	To a large extent
The university has a policy on how manager should define and communicate job requirements and expectations of other managers to accomplish the goals of the university	209	1	5	3.54	.876	
The university's policy provides job-related instructions on performance management to other managers to accomplish the university goals.	209	1	5	3.28	.868	
The university has a policy on how manager should take corrective and formative feedback and providing consequences for poor performance to other managers to accomplish the goals of the university	209	1	5	3.28	.855	
The university's policy on how manager should be directing or guiding other managers has led to increased commitment to the university.	209	1	5	3.27	.4594	To a moderate extent
The university has a policy on how manager should plan, organize and control the job tasks of other managers to accomplish the goals of the university.	209	1	5	3.04	.7516	
The university's policy on how manager should be directing or guiding other managers has led to the development more effective leaders.	209	1	5	3.02	.2713	
The university's policy on arranging and evaluation the work environment to other managers to accomplish the goals of the university	209	1	5	2.80	.5474	
The university has a policy on how manager should achieve the role of self-efficacy, communication style and interpersonal style to other managers	209	1	5	2.78	.5129	

to accomplish the goals of the university						
The university's policy on how manager should be directing or guiding other managers has led to improved interpersonal skills.	209	1	5	2.789	.4840	
The university has a policy on how manager should be directing or guiding other managers to accomplish the goals of the university.	209	1	5	2.789	.5222	
The university's policy on how manager should be directing or guiding other managers has led to positive impact on the university's bottom line.	209	1	5	2.779	.4696	
The university has a policy on how manager should achieve self-awareness and responsibility to other managers to accomplish the goals of the university	209	1	5	2.531	.8988	
The university's policy on how manager should be directing or guiding other managers has led to increased productivity.	209	1	5	2.296	.5076	To a less extent
Grand Mean				2.801		

Table 1. shows the results of the Likert scale analysis ($3.77 \geq \text{Mean} \geq 3.28$, with sign. standard deviation. ≥ 0.85). From the observation that the university has a policy on how manager should be monitoring, assessing performance and competence levels of other managers in alignment to organizational goals.

To a less extent with ($\text{Mean} \geq 2.296$, with sign. standard deviation ≥ 0.50) the university's policy on how manager should be directing or guiding other managers has led to increased productivity

Results indicated that the public universities in Kenya adopt best practices in supervision for Management Development at a moderate extent with an overall mean of 2.801.

These findings support observations of Apenteng (2012) ^[13] who studied the effect of supervision on staff performance in the Ga South Municipal Education Directorate and argued that while provision of infrastructure and personnel are vital for ensuring quality staff performance; absence of supervision could lead to low performance. Thus, supervision cannot be overlooked since it is a major tool for better staff performance giving the right supervisors, right tools and right resources.

Regression analysis of Supervision and employee performance

In light of the descriptive statistics above, parameters of workplace supervision were regressed against employee performance to confirm the results obtained from descriptive statistics as well as testing the direction of the relationship. In order to confirm the relationship between supervision and employee performance, a regression was run on supervision against employee performance. The extracts are presented below;

Table 2: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin - Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
1	.730 ^a	.533	.531	1.361	.533	236.459	1	207	.000	2.379

a. Predictors: (Constant), Supervision

b. Dependent Variable: Employee performance

Results presented on table 2 above, depicts a simple linear regression model summary and overall fit statistics. The adjusted R square estimated the population R square for the model used in this study and subsequently presented a more accurate indication of its predictive power. Adjusted R squared of 0.531 showed that supervisor support, supervision greatly influence the model predicting employee performance. Adjusted $R^2 = .531$ at a standard error of 1.361 indicated the amount of variance in employee performance that can be explained by application of supervision. This meant that multiple regression explained 53.1% of the variance in employee performance confirming supervision is a significant determinant of employee performance. The more the public universities implements supervision as a management development practice, the more its employee performance will improve and when supervision variable is not implemented well, employee performance will decline.

Table 3: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	438.139	1	438.139	236.459	.000 ^b
Residual	383.555	207	1.853		
Total	821.694	208			

a. Dependent Variable: Employee performance

b. Predictor (constant), Supervision

Data on Table 3. above present the F-test results which were used to determine whether the model is a good fit for the data, and to explain the variance in the dependent variable. F-test of 236.459 was statistically significant, thus it can be assumed that the model of supervision demonstrated a significant variance in employees` performance with p-value ( $0.000 < 0.01$ ) at 99% confidence level. If this test was significant at 1%, the model in general had good predictive capability of employee performance. A statistically significant correlation was established between supervision and employees` performance demonstrating that efficient implementation of supervision as a management development practice influence employee`s performance.

Table 4: Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-7.621	1.147		-6.642	.000
1 Supervision	5.858	.381	.730	15.377	.000

a. Dependent Variable: Employee performance

As indicated on table 4 above, beta coefficients value of 0.730 and t-value of 15.377 greater than $0.000 < 0.01$ demonstrating that supervision is a significant predictor of employee performance in public universities in Kenya.

Discussion of the findings

This study demonstrates that supervision had a significant impact on service delivery (Adjusted R Square = 0.531, $F = 236.459$, $p > 0.05$). Thus, the service delivery outcomes in Kenyan Public universities could be explained by variation in supervision management development practice. The β was significant ($\beta = 5.858$, $t = 15.377$, $p > 0.05$). Thus, it is crucial for supervisors to actively ensure that employees feel valued and supported by the organization, so that they can respond with increased engagement (Eisenberger et al., 2001) [21]. Furthermore, Bakker et al., (2008) [22] noted that because supervisors are widely perceived as organizational agents responsible for coordinating employees` performance,

their feedback is often perceived and interpreted by employees as a reflection the organization's feelings towards them.

Conclusion

Results of this study provide conclusive that Supervision management development practice significantly predict service delivery outcomes in Kenyan public universities. The practice ensures improvement of performance of all key factors by focusing on multiple management perspectives which include finance and stewardship, operations, service delivery and non-financial and dynamic/qualitative aspects and using weighted and composite scores to measure the performance. In order to achieve even higher outcomes, there is need for supervisors to acknowledge and appreciated employee achievements since this motivates employees and reinforces positive behaviors during goal setting, performance reviews, and development discussions for both high and low performers.

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REDEFINING PARENTAL INVOLVEMENT IN COMPETENCY BASED CURRICULUM IMPLEMENTATION IN KENYA. A CRITICAL REVIEW

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Abstract

Kenya has made significant strides in implementation of the Competency-Based Curriculum. However, there have been challenges, which the government has been trying to address. Parents have raised concerns about their involvement in their children's academic work and their increased role in the implementation of the new curriculum. The purpose of this study was to review literature on and redefine parental involvement in implementation of Competency Based Curriculum. The study was guided by the Structural Functionalism Theory by Emile Durkheim guided the paper. Desktop critical review of various journal articles and other secondary sources was carried out. The study established a great concern of parents that the new curriculum is resource expensive and demands of them to be involved in the implementation of the curriculum. Parental involvement includes helping learners in the entire learning process and in doing assignments. The new curriculum does not only focus on academic work but also non-academic work and therefore, forcing parents to assume roles in holistic development of their children. Since the focus of the curriculum is on the competencies, feedback from parents is very vital in complementing teachers' role especially in guiding their children to choose the right pathway in senior school. There is a need for constant communication between the teachers in the process. The expanded role of parents in implementation of the new curriculum should be explained well so as to overcome the teething problems that are being associated with the Competency Based Curriculum.

Key words: parental involvement, competency-based curriculum, nonacademic, pathway

Introduction

Parental involvement has long been recognized as a crucial factor in shaping children's educational outcomes. Thus, active parental participation enhances student motivation, academic performance, and overall development ^[1]. In Kenya, the role of parents in education has evolved over the years, reflecting broader educational reforms and societal changes. Introduction of the Competency-Based Curriculum (CBC) in 2017 marked a significant shift from traditional knowledge-based learning to a skills-oriented approach, necessitating a redefinition of parental involvement ^[2]. CBC emphasizes a learner-centered approach, integrating practical skills, creativity, and problem-solving into the educational framework ^[3]. This transformation calls for a more engaged and participatory role for parents, moving beyond conventional support functions to active collaboration with teachers and learners. However, many parents struggle to adapt to these new expectations due to lack of awareness, training, and resources ^[4]. This study critically reviews the emerging roles of parental involvement in the implementation of the CBC in Kenya. It explores historical developments, identifies current challenges, and examines strategies aimed at enhancing parental participation. By redefining parental roles within this educational framework, stakeholders can work towards ensuring that CBC objectives are effectively met, fostering holistic learner development. Parental involvement in education has long been recognized as a critical factor influencing learner achievement and holistic development. This study explores the historical trajectory of parental involvement in Kenyan education and examines its redefinition within the context of CBC implementation.

Historical Development of Parental Involvement in Kenyan Education

During the colonial era, Kenyan education systems were predominantly mission-driven, with limited parental participation. Post-independence in 1963 marked a pivotal shift as the government sought to democratize education, recognizing parents as essential stakeholders. The introduction of the 8-4-4 system in 1985 further emphasized academic excellence, but often marginalized parental roles to peripheral support functions. The enactment of the Basic Education Act of 2013 underscored the importance of parental involvement, mandating the establishment of Boards of Management (BoMs) in schools, which included

parent representatives. This legislative framework aimed to foster collaborative decision-making processes, enhancing school governance and accountability.

In response to the global shift towards skills-oriented education, Kenya introduced the CBC in 2017, aiming to nurture learners' competencies beyond rote memorization. The CBC emphasizes critical thinking, creativity, and practical skills, necessitating active parental engagement in the learning process. The CBC's learner-centered approach positions parents as co-educators, integral to reinforcing competencies acquired in school. This paradigm shift requires parents to participate actively in homework, project-based learning, and in development of learners' talents and interests. Notably, however, many parents feel inadequately prepared to support CBC activities, citing lack of understanding and resources [4]. Additionally, insufficient training and awareness among parents hinder effective participation in CBC initiatives [3]. To address these challenges, the Kenyan government and educational stakeholders have initiated programs to sensitize and train parents on CBC requirements. Workshops, community meetings, and media campaigns aim to bridge the knowledge gap, empowering parents to fulfill their roles effectively. Schools are also encouraged to establish functional Parent-Teacher Associations (PTAs) to facilitate continuous dialogue and collaboration. These challenges notwithstanding the ongoing efforts to equip parents with the necessary skills and knowledge are pivotal for successful realization of CBC objectives. Continued research and policy interventions are essential to strengthen this collaborative framework, ensuring that parental involvement effectively contributes to holistic development of learners.

The Role of the Basic Education Act (2013) in Parental Involvement in CBC Implementation

The Basic Education Act (2013) serves as a legal framework guiding provision of education in Kenya. It emphasizes inclusive and quality education while recognizing the vital role of parents in shaping learners' academic success. The Act mandates parental participation in school governance, decision-making, and the overall educational process. This legislation provides a strong foundation for redefining parental involvement in the Competency-Based Curriculum (CBC) by ensuring that parents actively contribute to their children's learning experiences. The act envisages several parental roles in the development of the child's

education from early grades to senior schools. The first role on Parental involvement is enhancing parental participation in school governance. The Act requires schools to establish Boards of Management, which include parent representatives. These boards play a crucial role in decision-making, policy implementation, and school management. Through their participation, parents influence curriculum delivery and contribute to a conducive learning environment for CBC. Additionally, Parent-Teacher Associations have been strengthened under the Act, ensuring consistent engagement between parents and educators [2].

The second role of the parent is to strengthen home-school collaboration. CBC emphasizes learner-centered education, requiring parents to take an active role in reinforcing competencies acquired in school. The Act advocates for regular communication between schools and parents, ensuring that parents are well-informed about their children's progress and curriculum expectations [4]. Schools are encouraged to involve parents in co-curricular activities, practical projects, and mentorship programs, aligning with CBC's emphasis on holistic education. The third role is supporting equity and inclusivity in education. The Act promotes inclusive education by ensuring that children from all backgrounds receive equitable learning opportunities. Parents are expected to support children with special needs and those from disadvantaged communities, helping to bridge gaps in educational access and resource availability [3]. The CBC framework aligns with this provision by encouraging diverse learning pathways tailored to individual learner abilities and interests. The fourth is addressing parental challenges in CBC implementation. Thus, despite the legal framework supporting parental involvement, challenges persist. Many parents lack adequate awareness and training to effectively participate in CBC activities [4]. To address this, the government, through the Ministry of Education, has implemented parental sensitization programs through workshops and digital learning platforms to equip parents with the necessary skills [5].

The Basic Education Act (2013) thus, provides a legal foundation for active parental involvement in education, which is crucial for successful implementation of the CBC. By strengthening school governance, fostering home-school collaboration, and ensuring inclusive education, the Act empowers parents to take an active role in their children's

learning journey. However, continuous efforts are needed to address knowledge gaps and equip parents with the skills required to support CBC effectively.

Objective

The objective of this study was to establish a new understanding of parental involvement in competency-based curriculum implementation in Kenya.

Theoretical framework

The study is guided by structural functionalism, a theory developed by Émile Durkheim (1895/1982) ^[6], which views society as a complex system whose interdependent parts work together to promote stability and social order. In the context of parental involvement in the implementation of the Competency-Based Curriculum (CBC) in Kenya, this theory provides a lens through which we can understand how institutions such as the family, school, and government interact to support educational objectives ^[6]. The CBC, introduced in 2017, is a structural component of Kenya's education system designed to produce skilled, competent, and adaptable learners ^[7]. Schools act as agents of socialization, equipping children with the knowledge, skills, and values needed for societal integration. Parents play a functional role by providing support at home to reinforce classroom learning. Structural functionalism emphasizes the interdependence between family and school, with parents expected to contribute through home-based learning, provision of resources, and participation in school activities ^[8].

Durkheim's concept of dysfunction explains the challenges that may arise when parental involvement is lacking, such as limited awareness of CBC demands, socio-economic barriers, and resistance to replacing the traditional exam-based model. When parents fail to fulfill their expected roles, the education system's function is disrupted, leading to diminished learning outcomes ^[6]. Recent studies have highlighted that inadequate parental sensitization and training hinder effective participation in CBC initiatives ^[9]. Durkheim also stressed the importance of social cohesion, asserting that a stable society requires collaboration among its members. In CBC implementation, teachers, parents, and policymakers must work synergistically. Strengthening community support systems, awareness campaigns, and policy reforms can promote more effective parental involvement

[8]. Structural functionalism also acknowledges that social institutions evolve to meet changing societal needs. CBC represents such an evolution, emphasizing lifelong learning and practical skills, which demands that parents adapt to new roles in education. Therefore, societal expectations surrounding parental involvement must shift to align with the learner-centered principles of competency-based education

Methodology

The study examined the existing literature, various policy documents, and personal experience and observations as an educator in the development of the research findings of this study. This study employed a critical review methodology, which involved an in-depth analysis of existing literature, policies, and empirical studies related to parental involvement in the CBC implementation in Kenya. The review evaluated the strengths, weaknesses, and contributions of literature to the topic while identifying gaps in research.

The study adopted a qualitative, desk-based research design, using secondary data sources such as government policy documents, journal articles, conference papers, and reports from educational institutions. This approach enabled a comprehensive understanding of the evolving role of parents in CBC implementation.

The review involved sourcing scholarly articles, policy documents, and reports published between 2013 and 2024, ensuring both historical and contemporary perspectives on parental involvement in CBC. Selection of materials was based on relevance. In the process, sources directly related to CBC implementation, parental involvement, and education policy in Kenya were examined. Another factor which was considered was credibility. Peer-reviewed journal articles, official government reports which included articles and papers from conferences done by the Ministry of Education, and studies from reputable institutions made samples of the papers reviewed. The last consideration was recency of the articles. Preference for recent publications (2018–2024) were used to capture the most current challenges, policies, and trends affecting CBC parents. A critical review methodology provides a structured and analytical approach to evaluating parental involvement in CBC implementation. By synthesizing diverse perspectives, this study identified policy strengths

and gaps while offering recommendations for strengthening parental engagement in Kenya's education sector.

General Findings on the Development of the CBC in Kenya

The CBC was introduced in Kenya in 2017 to replace the 8-4-4 system, aiming to equip learners with practical skills and competencies relevant to the 21st century. This shift sought to address the limitations of the previous content-heavy curriculum by emphasizing learner-centered education. Over the years, the CBC has exhibited notable strengths and encountered significant challenges. A further elaboration included the strengths and weakness of implementing the curriculum in Kenyan schools. Among the first strengths was learner-centered approach. The CBC emphasizes active learning, encouraging students to engage in practical activities that foster critical thinking and problem-solving skills. This approach moves away from rote memorization, promoting a deeper understanding of subject matter [7]. The second one was skill development. By focusing on competencies such as creativity, communication, and collaboration, the CBC aims to prepare students for real-world challenges. This holistic development is intended to produce well-rounded individuals capable of adapting to various professional environments [7]. The third point was cultural relevance. The curriculum incorporates elements of Kenyan culture and heritage, allowing students to connect their learning to their own experiences and communities. This inclusion fosters a sense of identity and national pride among learners [7]. The last one was parental involvement which was the centre of this study. The CBC encourages active participation from parents in their children's education, fostering a collaborative environment that supports student learning both at school and at home [10].

Studies have also highlighted a number of documented weaknesses of the CBC as implemented in Kenya. The prominent challenge was implementation challenges. The transition to the CBC has faced obstacles, including inadequate teacher training and insufficient resources. Thus, many educators feel unprepared to effectively deliver the new curriculum, leading to inconsistencies in teaching quality [11]. Another challenge is the problem of resource constraints in schools and the national budget. Thus, many schools, particularly in rural areas, lack the necessary infrastructure and materials to support the hands-on learning activities promoted by the CBC [11]. This disparity creates inequalities in

educational experiences and outcomes. Another striking problem which was widely spread was parental resistance. Some parents have expressed concerns about the demands of the CBC, citing increased time and financial commitments. This resistance is often rooted in lack of understanding of the curriculum objectives and benefits [12]. A major challenge among teachers was assessment difficulties. Thus, evaluating competencies requires more nuanced assessment methods compared to traditional exams [11]. Developing and implementing assessment tools has proven challenging, leading to potential inconsistencies in measuring student progress. The last was equity issues. The CBC's reliance on resources such as internet access and parental involvement may disadvantage learners from lower socio-economic backgrounds, exacerbating existing educational inequalities.

Parental involvement in children learning at home

Parental engagement is defined as a partnership between family, school and society, through increasing parental awareness of the benefits of their involvement in their children's education as well as providing skills to parents to do so [9]. Parental engagement in children's education is characterized by active communication with the school, existence of learning connectivity at home and at school, forming a strong community and identity in children, clarifying the role of the family in achieving school goals, consulting with the school in making decisions about children, collaborating with parties outside the school that lead to achievement of educational goals, and participation in programs initiated by the school [9, 10].

In Kenya's CBC, parental involvement in homework and home-based learning is pivotal for reinforcing classroom instruction and fostering essential competencies [12]. This engagement not only enhances academic achievement but also promotes holistic development. Parental support in homework and home-based learning provides learners with personalized guidance, reinforcing concepts taught in school. This involvement is linked to improved academic performance and development of self-discipline and responsibility. The Kenya Institute the successful implementation of CBC, as it ensures that learning extends beyond the classroom into the home environment. However, parents face numerous challenges in the process of supporting their children with homework. Many parents lack a clear understanding of the CBC framework, making it difficult for them to effectively support

their children's learning at home ^[13,14]. Parents also face a big challenge of time constraints especially employed ones. Work commitments and busy schedules limit the time parents can dedicate to assisting their children with homework, affecting the consistency and quality of support provided ^[14]. Another challenge was resource limitations. Some parents lack access to necessary learning materials or a conducive home environment for studying, hindering effective support of their children ^[15].

The study also reviewed some of the strategies employed by stakeholders to include parents as active partners in the implementation of CBC. To address these challenges, the following strategies were recommended to support parents cope up with the many challenges. First, was the introduction of parental education programs ^[10]. This involved Organizing workshops to educate parents about the CBC structure and their role in supporting home-based learning that can bridge knowledge gaps. Next was flexibility of engagement opportunities. Schools can provide various avenues for parental involvement that accommodate different schedules, ensuring more parents participates ^[14]. There was also a recommendation on the provision of resources to deserving parents. This should involve collaborating with community organizations to supply necessary learning materials that can alleviate resource constraints faced by some families ^[15].

Parental Provision of Learning Resources in Kenya's CBC Implementation

In Kenya's Competency-Based Curriculum, parental involvement in providing learning resources is crucial for effective curriculum implementation. Parents are expected to supply materials such as textbooks, digital devices, and other educational tools to support their children's learning experiences. This active participation enhances the learning environment and aligns with the CBC's emphasis on practical skills and competencies. The KICD outlines specific parental roles in CBC implementation, including the provision of necessary learning materials ^[13]. By supplying resources like textbooks, art supplies, and technological devices, parents enable hands-on learning and facilitate development of critical skills. This support is essential for reinforcing classroom instruction and promoting learner autonomy.

Despite the recognized importance of parental support, several challenges hinder effective provision of learning resources. Economic limitations prevent some parents from acquiring

necessary educational materials, leading to disparities in learner preparedness and engagement [16,17]. Some parents may not fully understand the specific resource requirements of the CBC, resulting in inadequate support for their children's educational needs. Integration of digital tools in the CBC poses challenges for parents who may lack technological proficiency or access to digital devices, limiting their ability to support e-learning components [14, 18, 19].

Thus, parental provision of learning resources is integral to the successful implementation of Kenya's Competency-Based Curriculum [20]. By understanding and addressing the challenges faced by parents, stakeholders can develop supportive strategies that enhance parental involvement, thereby improving educational outcomes and promoting equity in learning opportunities [21, 22].

Parental Participation in School Activities and Decision-Making in Kenya's CBC Implementation

In Kenya's CBC, parental involvement in school activities and decision-making processes is pivotal for fostering a collaborative educational environment [21,22]. Such engagement ensures that educational strategies align with the needs of learners, thereby enhancing the effectiveness of the curriculum [23,24]. Active parental involvement in school activities and decision-making contributes to a holistic educational experience by enhancing educational outcomes [16,17]. When parents participate in school functions and governance, they collaborate with educators to create supportive learning environments, leading to improved student performance [20, 25]. Another way is to engaged parents serve to as bridges between schools and the broader community, facilitating resource mobilization and community support for educational initiatives [26, 27]. It was also observed that parental involvement in decision-making processes ensures that school administration remains accountable, fostering transparency in the implementation of educational policies [24, 28].

Despite its importance, many parents are unaware of opportunities to participate in school governance or feel unqualified to contribute meaningfully [17, 23]. Parents facing economic hardships may prioritize immediate financial needs over school involvement, limiting their participation and in some communities [16]. Cultural norms may discourage active parental

involvement in school affairs, viewing education as solely the school's responsibility 20, 27. Parental participation in school activities and decision-making is integral to the successful implementation of Kenya's CBC. By addressing existing challenges and adopting inclusive strategies, schools can foster a collaborative environment that enhances educational outcomes and aligns with the holistic goals of the curriculum [22-25].

Parental Monitoring and Assessment of Learning Progress in Kenya's CBC Implementation

In the context of Kenya's CBC, parental involvement in monitoring and assessing their children's learning progress is pivotal [22-23]. This engagement not only reinforces classroom learning but also ensures that educational objectives are met effectively [24]. The study observed that when parents regularly track their children's academic activities, it leads to improved educational outcomes [17-20]. This involvement ensures that learners remain focused and motivated, aligning with the goals of the CBC [21, 29]. Parents who monitor their children's progress can identify specific areas where additional support is required, facilitating timely interventions 19. Regular assessment and communication about a child's progress foster a collaborative relationship between parents and educators, enhancing the overall educational experience 16, 20.

Notably, however, some parents lack a comprehensive understanding of the CBC framework, making it difficult for them to effectively monitor and assess their children's progress [22, 30]. Busy work schedules and other commitments can also limit the time parents have available to engage in their children's academic activities. It was also observed that economic challenges restrict parents' ability to provide necessary resources or dedicate time to monitor academic progress [17, 29]. However, by addressing existing challenges and adopting supportive strategies, parents can significantly enhance their children's educational experiences and outcomes [20, 21].

Parental Role in Career Guidance and Talent Development in Kenya's CBC Implementation

Kenya's CBC emphasizes career guidance and talent development from an early age 22, 24. Unlike the previous content-based system, CBC nurtures learners' abilities beyond

academics, focusing on skills, talents, and personal interests [19, 21, 31]. Parents play a crucial role in this process by identifying, supporting, and providing opportunities for their children to explore their potential [32]. Parents observe their children's interests from an early age, whether in music, sports, drama, science, or entrepreneurship [33]. A parent who notices a child's interest in painting can enroll them in an art class or buy art supplies to encourage creativity [25]. Parents introduce children to professionals in different fields, helping them understand real-world career options. A parent working in healthcare might take their child to visit a hospital to learn about different medical careers.

Parents provide learning materials, enroll children in talent academies, or invest in training programs. A child excelling in soccer may be enrolled in a local football academy or provided with proper training kits. Parents motivate children to engage in school competitions, music festivals, science fairs, and sports tournaments [17]. A child passionate about coding can be supported to participate in STEM competitions or join a robotics club.

Parents work with teachers to ensure their child's skills align with CBC career pathways, including arts, technology, and vocational training [20]. A school may recommend TVET (Technical and Vocational Education and Training) courses for a child interested in hands-on skills like carpentry or fashion design. CBC promotes entrepreneurial skills, and parents can encourage their children to develop business ideas [28, 33]. A parent may provide small capital for a child to start a home-based business, such as selling handmade crafts or home-baked snacks. However, some parents do not fully understand CBC's focus on talent-based education [23]. Some talents require resources (e.g., musical instruments, sports gear) that may be expensive [25]. Some parents still prioritize traditional careers (doctor, lawyer, engineer) over talent-based careers. Parents are key players in ensuring the success of CBC's career and talent development goals. By recognizing and nurturing their children's interests, they prepare them for a dynamic job market and empower them to excel in their chosen fields.

Collaboration with Teachers and Educators in CBC Implementation

Competency-Based Curriculum requires a strong partnership between parents and teachers to ensure effective learning. Unlike the traditional education system, CBC focuses on

learner-centered approaches, making parent-teacher collaboration essential in tracking progress, addressing challenges, and enhancing skill development ^[36]. Parents and teachers share insights about a child's strengths, weaknesses, and learning needs ^[37].

A parent who notices their child struggling with reading can work with teachers to create a home-based literacy plan. Regular parent-teacher meetings help parents understand the child's performance and required improvements ^[35]. Schools should provide digital portals where parents access progress reports and teacher feedback. CBC assessments focus on competencies, not just exams; teachers guide parents on how to support learning at home ^[39]. A parent learns how to assess creativity by helping their child with art or project-based assignments. Teachers alert parents about possible learning difficulties like dyslexia, ADHD, or special needs, allowing early intervention ^[34]. If a child has difficulty concentrating, a teacher may recommend specialized support at home and in school. Schools organize CBC workshops, career days, and talent development programs where parents participate actively ^[37]. Parents attend career mentorship forums where professionals inspire learners about different career paths. CBC encourages real-life application of knowledge; teachers and parents coordinate to reinforce learning at home ³⁸. A teacher may suggest parents take their children to historical sites for practical Social Studies lessons. Despite all these opportunities, some parents are too busy to attend school meetings or follow up on learning ^[35]. Some parents still expect exam-based results instead of competency tracking while schools lack effective communication channels to update parents regularly.

Support for Learner Well-Being in CBC as the Role of Parental Involvement

In the process of implementing Competency-Based Curriculum, parental involvement is pivotal in ensuring the holistic development of learners ^{39, 40}. Beyond academic achievements, parents play a crucial role in supporting their children's emotional, social, and moral well-being, aligning with CBC's emphasis on life skills and values ^{13, 41}. Active involvement in a child's education fosters a sense of security and belonging, contributing positively to their emotional well-being ⁴². Parents who engage in open conversations about school experiences help children manage stress and build resilience ⁴³. Studies have highlighted that while parents generally exhibit high levels of parenting satisfaction and

self-efficacy, they also experience moderate levels of mental fatigue and stress, indicating the need for balanced support systems 44. Parents serve as primary role models, teaching children's essential social skills such as empathy, cooperation, and respect 45. Encouraging participation in community service or group activities enhances learners' social interactions and community awareness. Parents instill moral values and ethical principles, guiding children to distinguish right from wrong. Discussing real-life scenarios where honesty and integrity are emphasized reinforces moral development 41. Parents ensure children maintain balanced diets, regular physical activity, and adequate rest, which are vital for effective learning 44. Organizing family sports or outdoor activities promotes physical health and strengthens family bonds 46.

Every parent who values education of the child shall create a supportive home environment that values education and encourages a positive attitude toward learning 43. Designating a quiet study area and setting consistent study routines enhance academic focus. Despite all these, parents balancing work and family responsibilities may struggle to dedicate adequate time to their children's well-being. Some parents may be unaware of effective strategies to support their children's holistic development 40. Economic challenges can hinder access to materials and opportunities that promote well-being 44. The Basic Education Curriculum Framework provides opportunities for schools to empower parents to contribute to the learning outcomes for their children and to be engaged at all tiers and levels of basic education 22. Parents play a crucial role in ensuring that their children are developing the various competencies as envisaged in the Basic Education Curriculum Framework.

Conclusion

Parental involvement is integral to successful implementation of Kenya's CBC, particularly in nurturing learner well-being. By actively supporting their children's emotional, social, moral, and physical development, parents contribute to formation of well-rounded individuals equipped with essential life skills. Successful implementation of Kenya's Competency-Based Curriculum relies heavily on active parental involvement in areas such as home-based learning support, resource provision, career guidance, and learner well-being. However, challenges such as limited awareness, financial constraints, and weak parent-school collaboration have hindered full parental participation. This study has

highlighted the need for structured training programs, better communication strategies, and policy enhancements to strengthen parental engagement in CBC. There is need to create parental awareness through training workshops, improving collaboration between parents and schools through digital platforms and PTA engagement, and providing financial and policy support to facilitate equitable access to learning resources. If implemented effectively, these strategies will ensure that CBC achieves its goal of equipping learners with practical skills and competencies, fostering a well-rounded and future-ready generation.

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**AN EVALUATION OF THE RELATIONSHIP BETWEEN PERCEIVED PARENTING
STYLES AND SYMPTOMS OF DEPRESSION AMONG SECONDARY SCHOOL
ADOLESCENTS IN MURANG'A EAST SUB-COUNTY.**

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Abstract

This study evaluated the relationship between perceived parenting styles and symptoms of depression among secondary school adolescents in Murang'a East sub-County, Kenya. The study adopted a cross-sectional correlational design where a sample of 369 students aged 14–18 was selected from rural, peri-urban, and urban mixed-gender secondary schools using stratified random sampling. Parenting styles were assessed using the Parental Authority Questionnaire (PAQ), while depression symptoms were measured using the Beck Depression Inventory-II (BDI-II). Descriptive and inferential statistics data analysis were used. Authoritative parenting was the most dominant parenting style (M= 33.63), followed by authoritarian (M= 33.22) and permissive (M= 25.21). Majority of participants under authoritative parents, reported minimal depression symptoms (38.3%), and least severe symptoms of depression (14.9%), a higher proportion of participants from authoritarian parenting reported moderate symptoms (31%), while those from permissive parenting households reported the highest levels of severe depression symptoms (27.5%). Chi-square test revealed no statistically significant relationship between parenting styles and depression symptoms $\chi^2 (6, N = 357) = 8.794, p = .188$. Results suggest that while parenting styles collectively were not associated with symptoms of depression, descriptive analysis demonstrated that authoritative parenting style had a buffering effect against symptoms of depression among adolescents. This study highlights the influence of parenting approaches in adolescent mental health, and emphasizes the need to strengthen authoritative parenting practices, along with school-based psychosocial support systems to mitigate depression symptoms among adolescents. To ensure holistic mental health care, other key factors such as, learning environment and peer dynamics need be considered as key areas in mental health intervention strategies. The study fills a gap in adolescent mental health research by generating evidence that can inform context specific mental health interventions and support policy formulation focused on promoting adolescent mental health.

Keywords:

Background

Perceived parenting styles namely authoritative, authoritarian, permissive, and neglectful are widely acknowledged as significant determinants of adolescent mental health [1]. These parenting approaches differ in levels of emotional warmth, discipline, and communication, all of which profoundly influence psychological development of adolescents [2]. Research has consistently shown that authoritative parenting, characterized by warmth and structure, is associated with lower rates of adolescent depression [3]. Conversely, authoritarian, permissive, and neglectful styles are often linked to increased emotional distress and a higher risk of depressive symptoms [4]. Understanding these relationships is crucial to developing effective early intervention strategies.

Authoritative parenting promotes emotional resilience by fostering open communication, consistent but flexible discipline, and strong emotional support [3]. Such an environment enables adolescents to express themselves freely, develop self-confidence, and build coping mechanisms that protect against psychological distress. In contrast, authoritarian parenting marked by rigid control and limited emotional responsiveness can suppress autonomy and reduce self-esteem, resulting in increased vulnerability to depression [5]. Lack of empathy and persistent criticism associated with this style can cultivate negative self-concepts, further compounding the risk of developing mental health challenges [6].

Permissive parenting, characterized by high levels of warmth but minimal enforcement of rules or expectations, often leaves adolescents without clear boundaries or emotional direction [7,8]. This lack of structure may contribute to poor self-regulation, emotional instability, and increased risk for depression [9,10]. Similarly, neglectful parenting, where emotional detachment and failure to meet basic needs prevail, can foster feelings of rejection and worthlessness in adolescents [11]. These individuals may also experience academic difficulties and social withdrawal, which, in turn, amplify their psychological distress and susceptibility to depressive disorders.

Globally, depression has emerged as a major mental health concern among adolescents. The World Health Organization estimates that 10% to 20% of adolescents suffer from a mental health condition, with many cases remaining undiagnosed due to their overlap with typical developmental challenges ^[12]. Depression ranges from mild emotional disturbances to clinical conditions marked by persistent low mood, loss of interest, and functional impairment ^[9]. Contributing factors include identity struggles, peer dynamics, academic pressure, and dysfunctional family environments ^[13]. There is thus an urgent need for targeted awareness and intervention programs to mitigate the long-term consequences of adolescent depression.

In the Kenyan context, adolescent depression is increasingly recognized as a pressing public health issue. A national mental health survey reported a 9.9% prevalence rate among older adolescents, with significant implications for school attendance, academic performance, and family relationships ^[7]. Certain groups, such as pregnant teenagers, exhibit even higher levels of depressive symptoms ^[14]. Among the most cited risk factors are harsh or inconsistent parenting, economic hardship, and lack of psychosocial support ^[15]. This study therefore seeks to evaluate the relationship between perceived parenting styles and clinical depression among secondary school adolescents in Murang'a East Sub-County, with the goal of informing context-specific mental health interventions.

Problem Statement

Childhood experiences, particularly those shaped by parenting styles, form the bedrock of an individual's emotional and psychological well-being. Parenting styles influence the development of coping mechanisms, self-worth, and emotional resilience. Adolescents who perceive their parents as authoritative characterized by warmth, support, and consistent responsiveness—are less likely to experience clinical depression due to the emotional security and autonomy they receive ^[15,16]. In contrast, perceptions of authoritarian, permissive, or neglectful parenting are frequently associated with emotional neglect, confusion, and heightened vulnerability to depressive symptoms. Despite this growing body of international evidence, limited attention has been paid to this phenomenon in the

Kenyan context, where adolescence is a particularly formative period for psychosocial development.

Adolescence is a critical developmental phase marked by rapid physical maturation, identity exploration, and expanding social relationships. These transitions, though natural, often generate increased susceptibility to mental health challenges, including depression. Environmental stressors such as academic expectations, peer dynamics, and familial discord can further strain adolescents' emotional well-being, especially when compounded by adverse parenting practices. In Kenya, cultural stigma around mental health, limited access to services, and the tendency to normalize behavioral shifts in adolescence contribute to the under diagnosis and neglect of depression among young people ^[17]. As a result, many adolescents endure emotional distress in silence, with few opportunities for therapeutic or preventative interventions grounded in their lived realities.

Although existing studies in Kenya have examined the influence of parenting styles on outcomes such as self-esteem, antisocial behavior, and juvenile delinquency ^[19,20], limited research has specifically addressed their relationship with clinical depression. Furthermore, a number of investigations are generalized, lacking granular, context-specific studies that explore regional variations in adolescent mental health. Notably, no known empirical study has comprehensively assessed the relationship between perceived parenting styles and adolescent depression within Murang'a East Sub-County. This research gap signals an urgent need for localized evidence to illuminate the psychosocial dynamics affecting adolescents in this area.

This study seeks to evaluate the relationship between perceived parenting styles and clinical depression among secondary school adolescents in Murang'a East Sub-County. By addressing this critical gap, the study aims to generate evidence that can inform locally relevant mental health interventions and support policy formulation targeted at adolescent well-being. Understanding the influence of parenting within specific cultural and socioeconomic contexts is essential to designing effective, culturally sensitive programs that promote mental health resilience among Kenyan adolescents.

Objective

To evaluate the relationship between perceived parenting styles and clinical depression among secondary school adolescents in Murang'a East sub-County.

Literature review

Parenting styles play a critical role in shaping adolescents' psychological development, particularly in relation to the onset and severity of clinical depression. Numerous studies across different cultural contexts have consistently shown that authoritarian or harsh parenting is positively associated with depressive symptoms in adolescents. For instance, it was observed that harsh parenting contributed to depression indirectly in China [21] through increased rumination and victimization. Elsewhere, a study conducted in Malaysia, observed that authoritarian parenting significantly correlated with negative emotional outcomes such as dysphoria and somatic complaints [22]. These findings collectively underscore the detrimental effects of emotionally rigid and punitive parenting on adolescent mental health.

Conversely, authoritative or positive parenting has been widely documented as a protective factor against depression in adolescents. Characterized by emotional warmth, consistent support, and balanced discipline, authoritative parenting fosters psychological resilience. Adolescents exposed to positive parenting profiles in China exhibited significantly lower levels of depression and anxiety [23]. The study identified emotional warmth and responsiveness as core elements of this parenting style, which were inversely associated with depressive symptoms (OR = 0.30). These findings, echoed across diverse cultural settings, highlight the centrality of emotionally supportive parenting in promoting adolescent mental well-being.

Beyond emotional warmth, the dimensions of responsiveness and behavioral control are also crucial in influencing adolescent mental health. In Ghana, it was established that authoritarian and permissive parenting styles were positively associated with depression, while authoritative parenting had a strong negative correlation [24]. Similarly, a study conducted in India reported that authoritative parenting was inversely related to adolescent depression ($r = -.677$), contrasting sharply with the depressive risks associated with

authoritarian and permissive approaches ^[25]. These observations suggest that parenting characterized by firm yet empathetic boundaries significantly reduces adolescents' vulnerability to depressive symptoms.

Cross-cultural research further reveals that parenting styles may shape adolescents' behavioral and emotional outcomes over time. For instance, optimal paternal parenting in Singapore moderated the relationship between childhood behavior problems and later socio-emotional functioning ^[26]. Studies conducted in Bangladesh ^[27] and Sri Lanka ^[28] also demonstrated that authoritative parenting was linked to lower levels of depression and stress. These findings suggest that when both paternal and maternal parenting styles are balanced and responsive, they serve as protective mechanisms against adolescent mental health challenges, irrespective of geographical or cultural context.

Evidence from African contexts, including Kenya, reinforces these global findings. A study conducted in Bungoma County, ^[29] linked parental dysfunction particularly intimate partner violence and parental depression—to adolescent depressive disorders. Elsewhere, studies conducted in Kiambu County also demonstrated that higher levels of paternal care were associated with lower depressive symptoms in adolescent boys ^[19, 30]. In Uganda, family cohesion was identified as a significant protective factor against depression ^[21]. These regional studies affirm the importance of parenting practices and family dynamics in influencing adolescent mental health within African socio-cultural settings.

Despite the robust body of international research, a notable gap persists in studies focusing on rural and underrepresented populations, particularly in low- and middle-income countries. Much of the existing literature has been derived from urban and Western contexts, limiting its applicability to more diverse environments. The reviewed evidence highlights both the universal relevance of parenting styles and the variations introduced by culture, socio-economic status, and local family dynamics. Therefore, the study in Murang'a East sub-County, Kenya, sought to address this gap by exploring how perceived parenting styles influence clinical depression among secondary school adolescents in a rural Kenyan context. The findings are expected to inform culturally sensitive interventions and shape

future mental health policy and practice.

Methodology

This study employed a cross-sectional correlational research design to examine the relationship between perceived parenting styles and clinical depression among adolescents in Murang'a East sub-County, Kenya. A total of 369 students, drawn from three mixed-gender secondary schools located in rural, peri-urban, and urban settings, were selected through purposive sampling. Within these schools, stratified random sampling by form and gender ensured proportionate representation across sub-groups. Data was collected using two validated instruments: The Parental Authority Questionnaire (PAQ) to assess parenting styles and the Beck Depression Inventory-II (BDI-II) to evaluate depressive symptoms.

PAQ was used to classify parenting styles into authoritative, authoritarian, and permissive categories, based on responses captured on a 5-point Likert scale. The BDI-II assessed depression severity across 21 symptoms, producing scores indicative of clinical depression risk. Both instruments have previously demonstrated strong psychometric reliability and validity in adolescent populations. Research tools were administered in a standardized format to ensure consistency, and the sampling approach allowed for a diverse and representative dataset, enhancing the generalizability of the study findings within the local context. Inclusion of schools from varying geographical settings enabled comparative insights across different environments.

Results

Correlation analysis was conducted to examine the relationship between perceived parenting styles and clinical depression among secondary school adolescents. Results as presented on Table 1 revealed a statistically significant negative correlation between authoritative parenting and clinical depression among adolescents ($r = -0.143$, $p = .006$). This indicates that adolescents who perceive their parents as warm, responsive, and appropriately controlling report fewer symptoms of depression. Such parenting fosters emotional security, open dialogue, and consistent guidance, which enhance psychological

resilience. These findings suggest that authoritative parenting serves a protective function against the onset of clinical depression. The style appears beneficial in nurturing adolescent mental health and could inform preventive frameworks in educational and familial contexts.

In contrast, authoritarian parenting demonstrated no statistically significant relationship with adolescent clinical depression ($r = -0.040$, $p = .452$). Despite being marked by strict discipline, high demands, and limited emotional warmth, this parenting style did not show a meaningful correlation with depressive symptoms. The absence of significance may be attributed to cultural norms that valorize parental authority or variations in adolescents' perceptions of strictness. These findings imply that authoritarian parenting does not directly influence adolescent depression in this context, though its long-term psychological effects warrant further investigation.

Permissive parenting exhibited a weak but non-significant positive correlation with clinical depression ($r = 0.049$, $p = .351$). Characterized by high responsiveness and minimal behavioral control, this style allows for emotional freedom but often lacks structure. Although the association was not statistically significant, the positive direction suggests a potential link to emotional instability or confusion in adolescents. The findings imply that, while not immediately harmful, permissive parenting may expose adolescents to vulnerability under certain conditions, particularly when consistent boundaries are absent. This area requires further longitudinal research to establish stronger causal relationships.

Neglectful parenting, also referred to as uninvolved parenting, showed a weak and statistically non-significant positive correlation with clinical depression ($r = 0.077$, $p = .145$). This style is characterized by low emotional responsiveness and minimal parental involvement. Adolescents raised in such environments may experience feelings of rejection, emotional neglect, or low self-worth risk factors known to contribute to depressive symptoms. Although the correlation did not reach statistical significance, the upward trend raises concern. These results suggest that neglectful parenting may subtly predispose adolescents to depression and should be further explored in future mental health studies.

Table 1*Correlation between parenting styles and clinical depression*

Parenting Style	Pearson Correlation (r)	p-value
Authoritative	-0.143**	0.006
Authoritarian	-0.04	0.452
Permissive	0.049	0.351
Neglectful/Uninvolved	0.077	0.145

A multiple linear regression analysis was performed to assess the predictive power of perceived parenting styles on the severity of clinical depression among secondary school adolescents. As shown on **Table 2**, the model yielded an R value of 0.162 and an R Square of 0.026, indicating that the four parenting styles collectively explained only 2.6% of the variance in depression severity. The adjusted R Square was 0.015, suggesting minimal improvement after accounting for the number of predictors. The standard error of the estimate was 10.280, reflecting moderate dispersion of scores around the regression line. The model's overall predictive strength was weak.

Table 2*Model summary for parenting styles and depression severity*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.162 ^a	.026	.015	10.28030
a. Predictors: (Constant), Permissive Parenting, Authoritative Parenting, Neglectful/Uninvolved parenting, Authoritarian Parenting				

An ANOVA test was conducted to determine whether the regression model predicting clinical depression from perceived parenting styles was statistically significant. As presented on **Table 3**, the model yielded an F-value of 2.402 with 4 and 358 degrees of freedom, and a p-value of .050. This result is on the threshold of statistical significance, suggesting that, taken together, the four parenting styles have a modest but noteworthy influence on depression severity among adolescents. However, considering the low R Square value reported earlier, the effect remains limited, indicating that additional unmeasured factors likely contribute more substantially to depression outcomes.

Table 3*ANOVA for perceived parenting styles and clinical depression*

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1015.287	4	253.822	2.402	.050 ^b
	Residual	37835.093	358	105.685		
	Total	38850.380	362			
a. Dependent Variable: Depression severity						
b. Predictors: (Constant), Permissive Parenting, Authoritative Parenting, Neglectful/Uninvolved parenting, Authoritarian Parenting						

Regression coefficients presented on **Table 4** provide insight into the individual contributions of each parenting style to adolescent depression severity. Neglectful or uninvolved parenting had a positive unstandardized coefficient ($B = 0.711$, $SE = 0.637$), but this relationship was not statistically significant ($p = 0.265$). Authoritative parenting, however, showed a significant negative association with depression severity ($B = -1.986$, $SE = 0.781$, $p = 0.011$), indicating that adolescents exposed to this style are less likely to exhibit symptoms of clinical depression. Authoritarian parenting demonstrated a negligible effect ($B = -0.027$, $p = 0.975$), confirming its lack of predictive value in this context.

Results further revealed that permissive parenting was weakly and positively associated with depression severity ($B = 0.486$, $p = 0.533$), but the relationship was not statistically significant. Collectively, the regression equation can be expressed as:

$$Y = 22.791 + 0.711X_1 - 1.986X_2 - 0.027X_3 + 0.486X_4 + \varepsilon,$$

where Y is depression severity, X_1 to X_4 represent the four parenting styles, and ε is the error term. While the overall model showed limited predictive power, authoritative parenting emerged as the only significant predictor, reinforcing its protective role in adolescent mental health. The findings highlight the importance of supportive and structured parenting in reducing depression risk among adolescents.

Table 4*Regression coefficients for parenting styles and depression severity*

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	22.791	4.094		5.567	0
Neglectful/Uninvolved	0.711	0.637	0.06	1.116	0.265
Authoritative	-1.986	0.781	-0.139	-2.542	.011*
Authoritarian	-0.027	0.872	-0.002	-0.032	0.975
Permissive	0.486	0.779	0.034	0.624	0.533

*Note: $p < .05$

Discussion

This study explored the relationship between perceived parenting styles and clinical depression among secondary school adolescents in Murang'a East Sub-County. Results showed that parenting styles collectively accounted for only 2.6% of the variance in depression severity, indicating a modest predictive effect. However, authoritative parenting emerged as the only statistically significant predictor, showing a negative association with depression. Adolescents who perceived their parents as warm, supportive, and structured exhibited fewer depressive symptoms, highlighting the beneficial role of this parenting style in adolescent mental health.

The other three parenting styles authoritarian, permissive, and neglectful/uninvolved did not show statistically significant relationships with depression. Authoritarian parenting, in particular, demonstrated no meaningful effect despite its high prevalence in the sample. This divergence from previous research may reflect cultural differences in how parenting behaviors are perceived and experienced. In many African communities, strict parenting is often interpreted as a sign of care rather than emotional rejection, potentially reducing its negative psychological impact.

These findings contribute valuable insights by focusing on a rural–urban transitional region in Kenya, a demographic often overlooked in adolescent mental health research. The study shows that while authoritative parenting is consistently protective, the effects of other parenting styles may be shaped by local cultural norms, family dynamics, and

environmental factors. Furthermore, the low overall explanatory power of parenting styles supports the idea that adolescent depression is influenced by multiple, interacting factors such as economic hardship, academic pressure, trauma, and peer relationships.

Conclusion

The study established that authoritative parenting had a statistically significant protective effect against clinical depression among adolescents. However, the overall regression model accounted for only 2.6% of the variance in depression severity ($R^2 = 0.026$), indicating limited predictive power. The other parenting styles authoritarian, permissive, and neglectful did not show significant associations with depression. These findings suggest that parenting style is just one of many factors influencing adolescent mental health. Broader influences such as peer interactions, school pressures, socio-economic challenges, and exposure to trauma must also be considered in addressing adolescent depression.

Recommendation

There is need for adolescent mental health interventions in Murang'a East Sub-County to adopt a comprehensive and collaborative approach. Schools should enhance their counseling departments and integrate mental health education into the curriculum to promote awareness and early detection. Parents should be equipped with practical skills to apply authoritative parenting strategies through targeted training and community outreach programs. There is also need for local health systems to establish community-based screening and referral services. A coordinated effort among educators, health professionals, and families is essential to addressing the multifaceted nature of adolescent depression effectively.

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BABIES AND BOOKS: INFLUENCE OF STUDENT-MOTHERHOOD ON THE CHALLENGES EXPERIENCED BY UNDERGRADUATE STUDENT MOTHERS IN KIRINYAGA UNIVERSITY, KENYA

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ABSTRACT

Female students who conceive during their studies at the university face challenges balancing between motherhood and studies. These challenges can affect their ability to successfully accomplish academic goals. This study investigated the challenges faced by student mothers and adopted the role conflict theory as the theoretical framework. The objectives of the study were to determine the academic challenges, establish financial challenges, to examining the child-care challenges, and identify coping mechanisms used by student mothers at Kirinyaga University, Kenya. Cross-sectional research design undertaken using snowballing sampling technical data collected using questionnaire and analyzed using descriptive statistics. 69.2% of respondents' indicated their children had experienced health problems, 41% had missed class since having a child. 25.6% of the respondents disagreed with the perception that they are unable to concentrate on their studies. 53.9% were unable to access school facilities. These findings will be used by the Medical Department and the Guidance and Counseling Department to advise interventions for student mothers as they continue with their studies.

Keywords: Undergraduate students, university, motherhood, babies,

INTRODUCTION

Motherhood and higher education are both life-changing experiences, each demanding significant emotional, psychological, and time investment. For university students who become mothers during studies these two roles often intersect in complex and challenging ways. Thus, while higher education institutions are traditionally designed around the assumption of a young, unencumbered student body, the realities of student mothers present a sharp contrast to this presumption. These women navigate a dual identity, both as students striving for academic success and as mothers responsible for the nurturing and well-being of their children. This duality often results in a conflict of roles that can affect not only academic outcomes but also mental health and personal development ^[1,2].

In Kenya, where education system has progressively opened up to women through affirmative action and inclusive policies, an increasing number of young women are enrolling in tertiary education ^[3]. However, for those who become mothers during their university years, the journey to obtaining a degree becomes significantly more demanding. Many student mothers face institutional, social, and psychological barriers that are rarely addressed within the structure of the university system. This study investigated the challenges that student mothers at Kirinyaga University face, focusing on academic, financial, and childcare-related constraints, and sought to understand the coping mechanisms they adopt to manage these competing demands. The theoretical underpinning of the study is role conflict theory, which posits that simultaneous demands from incompatible roles can generate stress, reduce performance, and negatively impact overall well-being ^[4].

Background to the Problem

The increasing enrollment of women in higher education in Kenya reflects a broader global trend toward gender parity in education. Women's access to tertiary education has improved dramatically over the past two decades ^[5], thanks to global and national commitments to gender equality. In Kenya, initiatives such as the Free Primary Education Policy, subsidized secondary schooling, and university-level affirmative action have contributed to a surge in female university students ^[6]. However, access alone does not guarantee equal experience or success. Thus, among female students, those who become

mothers while still in school are a particularly vulnerable group, often encountering challenges that stem from their dual responsibilities and the social stigma surrounding motherhood in academic settings [7].

For student mothers, the university environment can become a site of psychological strain and logistical complexity. The rigorous demands of academic life; attending lectures, completing assignments, participating in group work are often incompatible with the unpredictable and round-the-clock nature of childcare. The stress is further amplified by financial burdens, as many student mothers must fund their education, support their children, and cover living expenses, often without consistent financial support from family or partners [8]. Unlike in more developed countries where on-campus childcare and parental leave policies are more common, Kenyan universities generally lack institutional support systems that cater to student parents. This structural absence of institutionalized support exacerbates the emotional toll and heightens the risk of poor performance or academic attrition among student mothers.

From a psychological perspective, the lived experiences of student mothers can be best understood through the lens of role conflict theory. Originally articulated by Kahn et al 1964^[4] the theory suggests that individuals who occupy multiple roles with incompatible expectations often experience conflict, stress, and reduced performance in one or more areas. In this case, student mothers are expected to excel academically while simultaneously performing the emotionally and physically demanding role of caregiving. The constant negotiation between these roles can lead to internal conflict, feelings of inadequacy, chronic stress, and in some cases, mental health concerns such as depression and anxiety [2]. However, despite these significant challenges, many student mothers demonstrate remarkable resilience, often developing personalized coping strategies such as time management, peer support, and reliance on extended family. Notably, research on the psychosocial experiences of student mothers in Kenyan universities remains sparse. Existing literature tends to focus on general gender-based inequalities in education or on adolescent pregnancy, with limited empirical studies delving into the intersection of motherhood and higher education^[9]. Moreover, little is known about how student mothers in rural-based institutions, such as Kirinyaga University, navigate these intersecting roles.

This study addresses this gap by providing a focused analysis of the academic, financial, and childcare challenges faced by student mothers in this context and explores the coping mechanisms that enable them to persist in their studies.

Literature Review

Female students who conceive during studies at University face various challenges balancing between the role of mother and being a student at the same time. Student motherhood has been associated with detrimental outcome among them being health, psychosocial and financial^[10]. According to Cabbaging 2017^[11] a female student conceiving while undertaking undergraduate studies is considered a full time job and contradicts the role of being a student since the two roles demand time and physical energy of the student. A major assumption underlying university culture is that university students' core duty is to attend classes and that they have no other responsibilities. As such, taking on motherhood and childcare alongside educational pursuit is frowned upon in institutions of higher learning.

Consequently, student mothers are likely to face negative feedback and emotional pressure as this is perceived as negligent and a lack of commitment towards attaining her academic success^[12].

Dankyi et al., (2019)^[13] investigated the life of student mothers at the University of Cape Coast Distance Education program in Ghana using a mixed method design and purposive and convenient sampling techniques. Results showed that student mothers go through academic struggles such as inability to attend face to face lectures on a regular basis since they were tired and due to illness of the child and sometimes, having to take the child to welfare clinic and a lack of proper lactation rooms for the breastfeeding mothers. As means of coping with the struggles, the respondents depended on paid house-helps, keeping children at day care centers, raising loans and relying on partners and friends for support. Elsewhere, Anibijuwon and Esimai, (2020)^[12] conducted a study on the challenges and coping strategies of student nursing mothers at the University of Ibadan, Nigeria. The study adopted snowballing technique and included 250 student nursing mothers. Majority of student mothers faced financial, childcare and academic challenges. Student nursing mothers faced a challenge of poor practice of exclusive breastfeeding and poor

breastfeeding practices. Lack of exclusive breastfeeding practice leads to devastating impact on the health and growth of the child especially cognitive, emotional and physical development. This was evident as the respondents' children had diarrhea and skin infections. Student nursing mother had to combine childcare with learning at night and often arrived late for lectures and this could be attributed to tiredness as a result of staying late in the night. These academic challenges have implications on the academic performance of the student mothers with poor concentration and inadequate preparation for examinations contributing to poor performance in examination.

Maluleka et al., (2023) ^[14] conducted an exploratory study which looked into perceptions and experiences of student mothers at the University of Western Cape, South Africa. Purposive sampling was used to recruit 25 full time undergraduate female students with at least one child. The study established that while having children in the university allowed for a closer mother-child bond, it also complicated the ability of the mother to fulfil their academic duties. On the other hand, student mothers who did not have their children with them were able to perform well academically but being separated from their children took a toll on them emotionally. The study noted that support from family members enhanced the ability of the student mothers to perform well academically as they would take care of the child while allowing the mother to engage in her role as a student. Munyua et al., (2022) ^[15], conducted a study on influence of student motherhood on academic performance in public universities in western Kenya. Using mixed research design and multistage sampling, it was observed that student mothers face challenges such as inability to balance their studies and motherhood responsibilities, childcare, maternal stress, anxiety, time management, and feeling exhausted. These challenges affect their ability to perform well academically.

Objectives

Objectives of this study was to determine the academic challenges faced by student mothers in Kirinyaga University, Kenya, to establish the financial challenges faced by these students, to examine the child-care challenges faced by these students and to identify the coping mechanisms that are used by student mothers in Kirinyaga University, Kenya

Method

The study used a descriptive study approach and employed quantitative method of data collection. The eligibility criteria for the study was being a female undergraduate student at Kirinyaga University and having a child or children.

Procedure

Participants in this study were selected using nonprobability sampling technique of snowballing Snowballing since the number of student mothers was unknown. The selected student mothers were asked to provide a referral of similar individuals who were eligible for the study.

Theoretical framework

The study was founded on role theory in the field of sociology. Role theory emerged through the contributions of American sociologist Talcott Parsons, who explored social systems, alongside German sociologist Ralf Dahrendorf, as well as Erving Goffman.¹⁹⁵⁹ [19]. Sociologists employ the term "role" to delineate a collection of anticipated behaviors and responsibilities associated with an individual's position in society in relation to others, Goffman, Erving. (1961) [16]. Additionally, roles serve as both a framework to direct actions and a roadmap for achieving objectives, outlining tasks and appropriate conduct within specific contexts. According to role theory, much of our daily social conduct mirrors individuals fulfilling their designated roles, akin to actors on a stage. Sociologists contend that role theory offers predictive insights into behavior; understanding the anticipated responsibilities associated with a given role (e.g., father, mother, athlete, educator)? allows for the forecast of significant portions of individuals' actions within those roles. Roles not only steer behavior but also shape our convictions, as per the theory's assertion that individuals adjust their attitudes to align with their roles. Furthermore, role theory suggests that behavioral change necessitates role modification.

Role conflict arises when an individual experiences discrepancy between the various roles they assume or enact in their daily life. This conflict may stem from conflicting duties, leading to a clash of interests, or when roles possess differing statuses. Additionally,

disagreements regarding the expectations associated with a particular role can also trigger role conflict, whether in personal or professional spheres ^[17]. In the life of a student mother, role conflict exists when two or more social roles overlap, which are the student and parental roles and are incompatible. Conflict occurs because the performance of one role interferes with performance of another. Role conflict can be time-based, strain-based, or behavior-based. This eventually could lead to various challenges to the student mother.

Methodology

The study adopted a descriptive design specifically, cross-sectional research design to collect data at a specific point in time. Snowball sampling was used to identify and recruit participants. This technique was deemed suitable for accessing hard-to-reach populations, such as student mothers, who may not have been readily identifiable through conventional sampling methods. Initial participants were identified by reaching out to a few undergraduate student mothers in Kirinyaga University through contacts in relevant departments and student organizations. Initial data collection involved administering surveys to these identified participants to gather information about their challenges and experiences as student mothers. Referrals were requested at the end of each survey, asking participants to refer other student mothers they knew who might be interested in participating in the study. Additional participants were recruited by contacting the referred student mothers and inviting them to participate in the study. This process of data collection and referral was repeated until data saturation was reached, i.e., until no new information or themes emerged from the data. The sample size was determined based on the principle of data saturation, where recruitment stopped when no new information was obtained from additional participants. A diverse sample of 39 participants was aimed for to provide a comprehensive understanding of the topic. A structured questionnaire was developed, consisting of demographic questions and items related to the challenges faced by student mothers, such as academic stress, financial constraints, childcare responsibilities, social support, balancing academics and motherhood, coping mechanisms, and support systems available to respondents.

The questionnaire was administered to participants in-person, depending on their preference and accessibility. Confidentiality was ensured, and informed consent obtained.

A total of 39 questionnaires were administered. Quantitative data was analysed using descriptive statistics (e.g., mean, standard deviation) and inferential statistics (e.g., t-tests, ANOVA) to identify patterns and relationships among variables. Descriptive statistics was presented using frequency tables, pie charts, graphs, cross tabulation and correlations. Validity and reliability of the research instruments was ensured through pilot testing and validation procedures to enhance the trustworthiness of the findings.

Results

92.3% (36) of respondents were between age 18-25. The respondents were asked to indicate their current year of study. 46.2% (18) of respondents were in fourth year, 33.3% (13) third year and 20.5% (8) in 2nd year. 66.7% (26) of the respondents were from the School of Business and Education, 17.9% (7) school of Engineering and Technology, 10.3% (4) School of Health Sciences, while 5.1% (2) were from the School of Pure and Applied Sciences. 19 (48.7%) of the respondents conceived when they were in second year, 9 (23.1%) when in third year, 5 (12.8%) when in first year, 3 (7.7%) in 4th year and 7.7% conceived prior to joining university. 37 (94.9%) of respondents had one child while 2 (5.1%) had two children.

27 (69.2%) of respondents' indicated their children had experienced health problems. Among the most common health related challenges were coughs at 29.6%, fever 27.8%, diarrhea 16.7%, skin infection 13.0%, poor weight 9.3%, and ear/eye infections 3.7%. Majority of the respondents coped with the health challenges by seeking help from health care facilities, while others worked on improving the hygiene and consulted the elderly, parents and guardians. 41% indicated they had missed class since having a child. 48.7% indicated they were able to combine child care and learning during the night., 41.0% indicated they were unable to combine childcare with learning during the day while 35.9% indicated that they were able to combine child care duties with learning during the day. A comparison of the ability to combine childcare during the day and night shows that it is easier to combine childcare and learning during the night than during the day. This could be explained by the fact that the students have lectures to attend during the day.

38.4% of the respondents agreed with the statement that they are able to concentrate on their studies while 25.6% disagreed with the perception that they were not able to concentrate on

their studies. 43.6% indicated they were able to understand topics which are taught in their absence, 23.1% indicated that they were unable to understand topics which were taught in their absence. 21(53.9%) indicated that they were unable to access school facilities, while 11(28.2%) indicated that they were able to access school facilities.

The student mothers employed coping mechanisms such as learning how to balance house chores with academics, accepting the circumstances that they have a child, seeking support from parents, taking the child to daycare, engaging in group discussions and consultations and relying on tutorials from online platforms. 35.9% of the respondents indicated that they were able to get to lecturers even as they have a baby while 43.2% disagreed with the perception that they were unable to get to lecture room on time since having a baby. 41.0% indicated they were able to concentrate on their lectures, 66.7% disagreed with the statement that they fall asleep during lectures while 20.5% indicated they agreed that they do fall asleep during lectures. 46.1% indicated they find themselves leaving the class as lecturers are continuing while 38.4% indicated they did not agree with the statement that they find themselves leaving class as the lecturers were continuing. 76.9% indicated that they do not carry their child to attend lectures while 20.6% do carry they children as they attend the lecturers. This could be attributed to the fact that there are available options where the children can be taken such as daycare centers. 59.5% of the respondents indicated that they do not occasionally carry their child to group discussions while 33.3% indicated they do carry their child occasionally to group discussions.

Coping mechanisms for challenges faced during lectures

The student mothers engaged in various activities to help them cope with the challenges they face such as missing classes, arriving late for classes, leaving lecturers early, looking for a baby sitter, developing uneven sleeping patterns, waking up early to prepare and creating extra time to study and concentrating during lecturers. 56.4% indicated they are able to prepare for their exams, 53.8% were able to find a place to keep their children during exams, 43.6% were able to concentrate when reading for their exams, 41.0% were able to feed their children when the examinations are continuing while 33.4% indicated they are not able to feed their children well during examinations. 90.5% indicated they have average performance while 9.5% indicated they had below average performance.

Coping with challenges faced during examinations.

When asked to respond to how they cope with examination challenges the respondents indicated they sleep late and woke up early. They have to create extra time to study and prepare. In addition, they find a baby sitter, daycare or parent to look after their child. The respondents further indicated they cope by adopting healthy attitudes such as being committed to attend the classes, adopting an attitude of self-acceptance and maximizing the time they have to study by fully concentrating during their free time. Some have to ensure they complete the exam in shorter duration so that they can go back to looking after their child.

Financial Challenges

66.7% of the respondents indicated they are not able to hire a baby sitter. 10.3% of those who are able to hire a baby sitter receive financial support from their partners, 5.1% hire the nanny on their own, 10.3% get support from the family to hire a baby sitter. 20.5% were able to afford a balanced diet while 33.3% were not able. 33.3% used part of their school fees to meet their obligations, 10.3% had taken academic leave due financial challenges while 41% were not able to cater for expenses. 65.7% coped with financial challenge by getting support from parents, 20% look for job and 14.3% prioritize their needs as way to cope with financial challenges. 61.5% indicated they were able to exclusively breastfeed their children for the first six months, 51.3% indicated they weaned their children early. 46.1% were able to access comfortable room for breastfeeding. 46.2% of the respondents indicated they experienced stigma from being a student mother. 46.1% indicated they have adequate time to bond and play with their children.

Coping with Childcare challenges

On ways of coping with childcare challenges, respondents indicated they cope by taking care of the child on their own, some received support from the guardians, friends, parents and relatives. A number of respondents provided meals for the child early to ease breastfeeding so that they could concentrate on their studies.

Mental Health Challenges

61.9% indicated they had not had a mental health challenge since becoming a student mother while only 38.1% indicated they had experienced a mental health challenge. Depression and stress were the most common mental health challenges faced by the student mothers. To cope with the mental health challenges, they visited healthcare facilities, received support from families, friends, parents and guardians. The respondents proposed several approaches towards addressing mental health challenges. These include offering daycare services within the institution, more guidance and counseling sessions with the student mothers, accepting themselves as student mothers, offering support financially, physically, emotionally and spiritually.

Discussion

Student mothers experience immense mental pressure ranging from financial to stigma coping with learning to taking examination in stressful circumstances. In order to protect these students from sliding into mental depression, there is need for Universities to put in place child nursing rooms on campus to enable student mothers to come to University with their babies during learning hours.

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BURNOUT AND PSYCHOLOGICAL WELLBEING AMONG NURSES IN MURANG'A COUNTY, KENYA: A CORRELATIONAL STUDY

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ABSTRACT

Burnout is a major health hazard that puts the general wellbeing of nurses at risk. The aim of this study was to determine the relationship between burnout and psychological wellbeing of nurses in Murang'a County public hospitals. The aim of this study was to examine the interplay between burnout and psychological wellbeing of general ward nurses in government hospitals. The study was informed by the multidimensional theory of burnout and the theory of psychological wellbeing. The study applied a correlational design as the framework of operation and was conducted in Murang'a County. Purposive sampling and simple random sampling methods was used to select 230 participants for the study. Ethical approval was obtained and data collected from the sampled facilities using the Maslach Burnout Inventory for Medical Personnel and the Psychological Wellbeing Scale. Data was analysed using mean, percentages, standard deviation and Pearson product moment correlation. The study adhered to ethical standards in order to protect participants from any harm. There was a significant correlation between burnout and psychological wellbeing ($r[205] = -0.384, p = .000$), implying that high levels of burnout translated to low levels of psychological wellbeing and vice versa. The study findings may inform policies on burnout management among nurses in public hospitals and county health boards. Predictive studies may be conducted to ascertain the causal relationship between burnout and psychological wellbeing.

Key Words: Emotional Exhaustion, Depersonalization, Reduced Personal Achievement, Psychological Wellbeing, County Public Hospitals

Introduction

Burnout is a significant issue that adversely impacts the psychological wellbeing of nurses and which may in turn affect provision of health services as observed by the World Health Organization^[1]. Nurses may thus find themselves seeking health services when the problem is not illness but burnout. Burnout becomes a significant risk to psychological wellbeing which is about one's life "going well", and functioning at optimal levels^[2]. Maintaining nurses' physical and psychological wellbeing is core to keeping them available and productive. Lohmann et al.^[3] reiterate that it is a way of keeping health risks at bay since their work demands place healthcare workers in danger of incapacitation with mental illness or poor psychological wellbeing. Studying how burnout interacts with positive psychological wellbeing may shed light into the related risks and possibly how they correlate.

Psychological wellbeing is a goal that every healthcare professional desires considering its importance to good mental health. According to^[4] psychological wellbeing can be hedonic, eudaimonic or resilience. This means psychological wellbeing consists of pleasure and enjoyment, meaning and fulfilment, coping abilities, emotional regulation and robust problem-solving abilities. In other terms, psychological wellbeing encompasses not only having good feelings but also functioning well.^[5] noted that psychological wellbeing does not imply the absence of pain because experiencing painful emotions is part of normal living. Learning to manage such emotions is what matters and failure to do so interferes with one's functioning. Psychological wellbeing was therefore considered in a positive sense.

Association between burnout and psychological wellbeing has been studied in regard to different subscales of burnout of emotional exhaustion, personal accomplishment and depersonalization.^[6] in their study on association between burnout and wellbeing and the mediating role of psychological capital and self-esteem among nurses in China. Burnout correlated with psychological wellbeing ($r = 0.658$, $p = 0.02$), although psychological wellbeing was considered in terms of general wellbeing. Other studies describe burnout in terms of absence of distress. In a systematic review of published cross-sectional studies,^[7] found correlations between burnout and absence of sickness. This trend is reflected in^[8] in

their study in West Bank - Palestine that found significant relationship between psychological distress and burnout ($p = .008$). While the correlations existed between the three dimensions of burnout and psychological distress, this study sought to assess the connection between burnout and positive psychological wellbeing.

Another approach to studying the relationship between burnout and psychological wellbeing is assessing the associated factors. Elsewhere, it was reported that quality of life to be negatively correlated ($r = -0.368, p = .001$) with burnout among nurses in Saudi Arabia [8]. Although quality of life is related to psychological wellbeing, they are conceptualized differently, and the current study limits itself to positive psychological wellbeing.

Studies in Africa that assess the relationship between burnout and psychological wellbeing conceptualize psychological wellbeing as job satisfaction, poor health status and psychological distress. In South Africa, [10] found significant negative correlation between burnout and job satisfaction ($r = -0.077, p = 0.01$). [11] also focused on the predictors of burnout rather than the relationship with psychological wellbeing. Results showed that 44.4% experienced burnout which was predicted by different factors like marital status, poor health status, long work periods, intention to leave working in an emergency room and being on medication for problems associated with the nature of work. There were high chances that a person with poor health status (AOR: 4.8, 95% CI: (1.1-21.4) and fair health status (AOR:12, 95% CI:(4.5-32) had high burnout. While the studies point to the nature of relationship that may exist between burnout and psychological wellbeing, the relationship is only by inference. The studies correlate burnout with positive or negative aspects of psychological wellbeing, whereas the current study focuses on the latter.

Local studies on the relationship between burnout and psychological wellbeing are mostly related and do not directly assess this relationship. [12] focused on the predictors of burnout where long working hours significantly contributed to burnout, and which was higher in females than in males (46 vs. 24, $p = 0.05$). This shows that nurses working for unfavourably long hours were likely to develop burnout. This leans towards the connection between burnout and negative rather than positive psychological wellbeing. Elsewhere, [13] studied mental disorders among healthcare workers as a result of COVID-19 pandemic rather than burnout. The findings showed that depression was high among females than males (36.5 vs.

26.9%, $p = .003$), younger vs. older (38.1 vs. 26.4%, $p = .001$), Generalized anxiety was higher among younger vs. older healthcare workers (41.7 vs. 29.2%, $p = .001$) and insomnia among the younger compared to the older (30.3 vs. 18, $p = .001$). These studies fail to show burnout may interact with positive health precisely among nurses as intended in the current study.

[14] assessed how COVID-19 affected health care workers in a health facility in Kenya, where depression (17.3 vs. 3.4% ($p = .026$) for frontline vs. second line; anxiety (11.1 vs. 5.1% ($p = .681$), insomnia (9.1 vs. 0.0% ($p = .0052$) and burnout (56.1 vs. 32.8% ($p = .005$) were established as the key experiences of frontline workers most of whom included nurses. These factors only point out that COVID-19 affected nurses among other healthcare workers which in turn may have impacted their psychological wellbeing. While burnout has been explored extensively, existing studies tend to conflate psychological wellbeing with distress or general health. This study addresses this gap by focusing on positive psychological wellbeing as a distinct outcome variable."

Statement of the Problem

Psychological wellbeing is an important aspect of a nurse's mental health because it determines their individual capacity to withstand health risks. Burnout is among the risks that may lower psychological wellbeing of nurses which may in turn impact their efficiency in carrying out their duties. Studies show a global burnout prevalence of 43% [15] although it differs from country to country. For example, a prevalence of 31.5% has been realized in the US, 22% in China and 43% in Kenya [16]. This implies that nurses in Kenya may experience higher levels of burnout compared to other regions which may translate to low efficiency at work.

A global review studies focusing on the relationship between burnout and psychological wellbeing differ in their measurement of psychological wellbeing. Some have focused on the relationship between burnout and the absence of sickness [17] while others pay attention to burnout and psychological distress [18], and quality of life [19]. The same trend is portrayed in regional studies which correlate burnout with other variables such as job satisfaction and general wellbeing [20]. Local studies appear to be limited, and much of the reviewed studies are mostly related. For instance, [21] focuses on predictors of burnout like long working hours, while [14] and [13] explore mental disorders resulting from COVID-19 pandemic. While

these studies show the relationship between burnout and psychological wellbeing, majority of them have focused on negative rather than positive psychological wellbeing. In addition, studies focusing precisely on Murang'a County are limited which requires further exploration.

Nurse burnout has been found to affect nurse turnover with many leaving the profession as observed by [22]. It may also lead to cognitive dysfunction, depression and impaired sleep [23] as well as worsen patient safety [24]. [25] have demonstrated that nurses experience high levels of burnout (43.7%) that require to be investigated on how they affect psychological wellbeing. Despite these known effects and levels of burnout, the relationship between burnout and psychological wellbeing among nurses, specifically in Murang'a County, remains underexplored and poorly understood.

Purpose of the Study

The purpose of this study was to examine the relationship between burnout and psychological wellbeing among general nurses in hospitals in Murang'a County with a view to improving healthcare outcomes and inform policy.

Hypothesis

H₀1: There is no statistically significant relationship between burnout and psychological wellbeing among nurses in Murang'a County hospitals.

Theoretical Framework

The study was informed by the multidimensional theory of burnout and the theory of psychological wellbeing. The multidimensional theory was propounded by [26]. This theory posits that burnout is a psychological symptom that is characterized by emotional exhaustion, depersonalization and reduced personal achievement, which can surface among persons working with others in some defined capacity [27]. This suggests that burnout is not just fatigue, but fatigue that affects various dimensions of the individual and thus affecting their psychological wellbeing and diminishing their mental health. Maslach further states that emotional exhaustion dimension refers to feelings of emotional overextension and depletion of one's emotional resources. Depersonalization on the other hand encompasses negativity, callousness, and excessive detachment in response to others who ought to receive the service or care one offers. Reduced personal accomplishment is

used to describe the failing feelings of one's competence and success in achieving according to one's work or duty.

This theory has been criticized for equating emotional exhaustion with depersonalization and reduced personal accomplishment. Thus, it has been argued that emotional exhaustion should be considered as the main component of burnout and the rest as related variables and not elements of burnout [28]. However, the theory is in line with the biopsychosocial model which considers illness from a holistic perspective. It is therefore important because it explains the independent variable (burnout) in three main subdivisions of emotional exhaustion, depersonalization and reduced personal accomplishment. It also shows how psychological wellbeing may be affected when a person experiences extreme burnout.

The theory of psychological wellbeing was developed by [29]. The theory states that for a person to develop and have self-realization, they must first have a sound and optimal psychological functioning and experience [30]. There are generally two philosophical standpoints that underpin wellbeing, that is, hedonism and eudaimonism. Hedonism emphasizes happiness while eudaimonism emphasizes meaning or being meaningful [31]. While different scholars have emphasized either of the two standpoints in explaining psychological wellbeing, [29] has underscored the eudaimonic approach with six distinct aspects of psychological wellbeing. The six aspects are all characteristics of positive functioning and they include autonomy, environmental mastery, personal development, purposeful life, positive interpersonal relations and self-acceptance [31]. While there are different types of wellbeing, this study aligned itself with the multidimensional aspect of wellbeing because it sought to maximize on the multiplicity of experiences that contribute to nurses' positive psychological wellbeing.

The theory of psychological wellbeing has been criticized for overemphasizing on environmental mastery or the capacity of individuals to change and intervene in transforming the environment around them. This is at the expense of abandoning the positive functioning like meaningful life engagement, realizing personal capacities and enlightened self-knowledge [30]. However, [32] came to this realization and revised the theory by adding one modality of resilience which refers to the ability to maintain and recover wellbeing in the face of adversity. Thus, resilience runs parallel to the six dimensions or

categories of wellbeing such that, whenever one of them is threatened, a person is able to use the available resources to balance and maintain their wellbeing.

Conceptual Framework

In figure 1, it is hypothesized that burnout is correlated with psychological wellbeing. Burnout is conceptualized according to multidimensional theory which identifies three domains or components; emotional exhaustion (EE), Depersonalization (DP) and reduced personal achievement (PA). On the other hand, psychological wellbeing is indicated by autonomy, environmental mastery, personal development, purposeful life, positive interpersonal relations and self-acceptance. Accordingly, this relationship is moderated by resilience – the ability to withstand adverse experiences related to burnout.

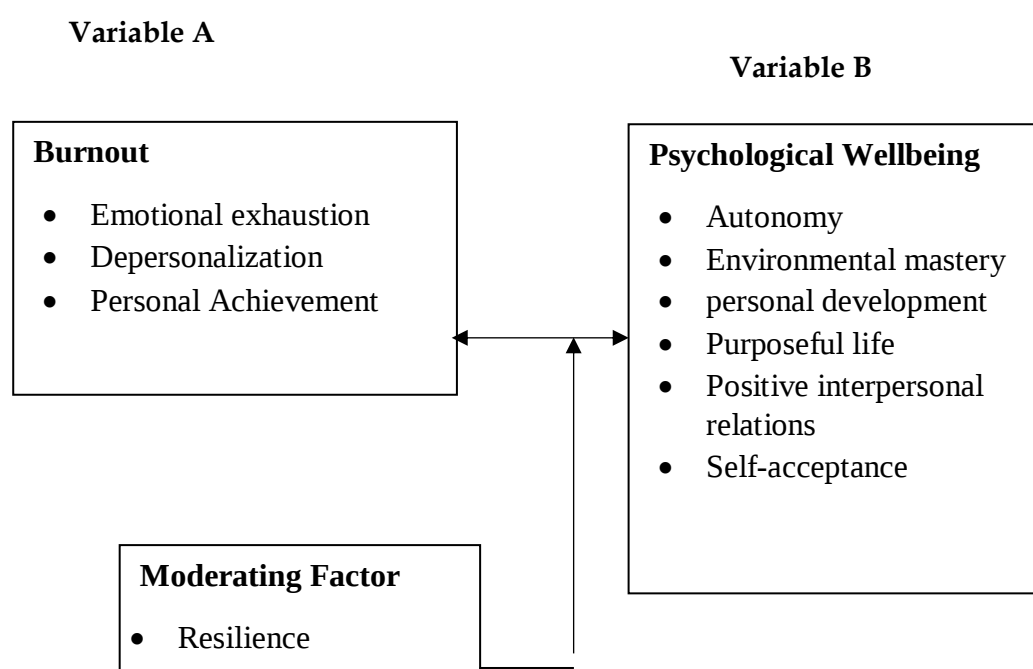


Figure 1: A conceptual Framework

Source: Author (2023)

Empirical Review

The relationship between burnout and psychological wellbeing is one that has been studied in different settings. In a multinational cross-sectional study, ^[33] assessed the determinants of burnout and other aspects of psychological wellbeing among healthcare workers in three countries, UK, Poland and Singapore. Relevant scales for safety, burnout, anxiety and

depression were used to gather data from the respondents. Multivariate analyses showed that, among other findings, burnout was found to correlate with psychological wellbeing of healthcare workers in the selected countries (UK, Poland and Singapore) (OR 0.64; 95%CI 0.51-0.82). This study however relied on absence of disorder as the definition psychological wellbeing. The current study diverged from this approach and determined this relationship while relying on positive psychological wellbeing as one of the variables.

[34] in a survey studied the levels of burnout and psychological wellbeing of government employed nurses in India. From a sample of 603 participants, data was collected using the Copenhagen Burnout Inventory, the General Health Questionnaire, and the Perceived Stress Scale. The findings showed high levels of burnout among the nurses but it was not correlated with psychological wellbeing ($r = .284$, $p=.0.072$). The study conceptualized psychological wellbeing using the GHQ-28 whose purpose is to identify minor psychiatric disorders. Conceptualizing psychological wellbeing in terms of disorder is limited and the current study sought to explore it from a positive perspective and how it may correlate with burnout.

In a multi-centre study, [35] measured burnout against the corresponding risk profile of paediatric nurses. A sample of 95 nurses drawn from four hospitals in the Spanish province of Granada was put into study, from which data was collected using the MBI, NEO Personality Inventory, and the Educational-Clinical questionnaire. It was found that 22 percent, 18.5 percent and 39 percent scored high on emotional exhaustion, depersonalization and low personal achievement respectively on the MBI scale. The scores on overall burnout did not correspond to the nurses' sociodemographic profile, work variables but the three domains were found to relate to the analysed psychological factors. While the study showed significant correlation between burnout domains and personal profiles, the current study explored further on how the domains correlated with positive psychological wellbeing.

While [33] and [34] measured psychological wellbeing by paying attention to absence of disorder and according to general health. [36] linked burnout and psychological wellbeing and the mediating role of social support in a cross-sectional study. The study was conducted on 486 Chinese university students aged 18-35 years of age and MBI, multidimensional scale of perceived social support (MSPSS), motivation strategy learning scale (MSLS) and

Psychological Wellbeing Scale (PWS). Social support was found to mediate burnout and subjective wellbeing such that high levels of social support minimized burnout effects while enhancing psychological wellbeing. This study, while linking burnout and psychological wellbeing, it did so by assessing the mediating role of social support. In a setting with limited study on the relationship between burnout and psychological wellbeing has been explored, the current study assessed the direct correlation between the two variables without any mediating variable. Differences in study population triggered the current study for comparison purposes.

[37] assessed the relationship between psychological wellbeing and burnout amongst medical students in India. Burnout was measured using the OLBI, psychological wellbeing using GHQ-12 and substance use using CAGE. Findings from the study indicated that 86% and 80% of the respondents experienced disengagement and emotional exhaustion, and 70% scored over 2 suggesting the possibility of gender specific scores in burnout. The results of GHQ-12 positively correlated with burnout (disengagement and exhaustion domains) of the OLBI. The GHQ-12 that was used measures wellbeing with focus on disease, which explains the combination with CAGE scale to measure negative psychological wellbeing. On the other hand, OLBI is not specifically tailored for nurses but wider populations compared to MBI which has versions suitable for healthcare professionals.

In a cross-sectional study, [38] explored the relationship between job stress, positive psychological resources, burnout and wellbeing. The study sampled 1500 workers from 26 factories in Northern China and data collected using MBI-GS, Psychological Capital Questionnaire (PCQ), Rosenberg Self-esteem Scale (RSS), and the Flourishing Scale (FS). Among other findings, psychological capital mediated the relationship between emotional exhaustion, depersonalization and professional efficacy and wellbeing. Despite the difference in population, the study could imply that in the presence of proper interventions, burnout is negatively correlated with psychological wellbeing ($r = -.322, p = 0.02$). In the study, general wellbeing was equated to psychological wellbeing even though they are two different constructs. Studying positive psychological wellbeing would be more suitable in exploring the quality of mental health of nurses.

In the regional arena, [39] studied burnout in relation to quality of life of nurses in South West Nigerian health institutions. The study was descriptive in nature and 259 nurses were recruited for the study and MBI and Short-Form health survey (SF-12) used in collecting data from the respondents. In the findings, the physical health component (PHC) of the quality of life (QOL) scale were significantly negatively correlated to emotional exhaustion ($r=.640$, $p<.001$), depersonalization but not reduced personal achievement. This study correlated individual dimensions of burnout with the physical health of nurses, thus the need to explore the interplay between burnout and positive psychological wellbeing.

The study by [39] is closely related to another one by [40] who in their survey on Nigerian health workers assessed the status of mental health and psychological wellbeing and related factors. The study involved 384 participants from public health facilities in Sokoto Metropolis from whom the Kessler-10 Distress Scale, personal wellbeing index (PWB) were used to collect data. Among other findings, psychological wellbeing was found to significantly correlate with work-related variables which may imply burnout ($\chi^2=4.99$, $p=.007$). This study did not measure burnout *per se* but it was implied in work-related variables and which correlated with personal wellbeing. A more direct study on a Kenyan population was necessary to explicate the relationship between burnout and psychological wellbeing.

In a local study, [14] assessed the mental wellbeing of nurses during the COVID-19 pandemic in a tertiary institution in Kenya. The study was cross-sectional and it involved 255 participants who were recruited for the study. Through multivariate logistic regression, the findings showed that burnout was linked to anxiety, depression, insomnia, and distress ($p<.05$). Despite this study providing insight on the local statistics on burnout and psychological wellbeing, psychological wellbeing was measured by implication. In addition, the study leaned more on presence of distress as the measure of psychological wellbeing, a limitation the current study aimed to overcome.

A number of studies have examined the relationship between burnout and psychological wellbeing. However, direct literature on positive psychological wellbeing is limited and in most cases the relationship is implied. In some studies, burnout is measured against mental wellbeing in terms of mental disorders and psychological distress. At the same time, the

studies that measure burnout and psychological wellbeing have correlated the two with the mediating role of another variable. There is also limitation in terms of the instruments that measure burnout and psychological wellbeing. On one hand, burnout is measured using MBI-GS which may not apply to nurses or OLBI that is suitable for general populations, and on the other, psychological wellbeing is conceptualized as absence of distress and disease. Some tools like QOL, GHI-12, 28, CAGE, focus more on negative attributes of psychological wellbeing rather than the positive. While numerous studies have explored burnout's impact on general wellbeing, few have employed Ryff's multidimensional model to explicitly assess psychological wellbeing in healthcare settings, particularly among nurses in Kenya. This creates a difficulty in interpreting the relationship between the two variables, a gap the current study aimed to fill.

Materials and Methods

Research Design

This study adopts a correlational research design to determine the relationship between burnout and psychological wellbeing. According to ^[41], correlational design involves measurements that indicate how two or more factors predict or estimate the level to which the values of each factor relates or changes according to an observable pattern. Accordingly, this design helped determine how burnout and psychological wellbeing interact to predict the mental health of nurses in public hospitals in Murang'a. This design was thus selected because it assisted in showing the magnitude and direction of burnout and psychological wellbeing especially in a healthcare setting.

Study Site

This study was conducted in Murang'a county of Kenya. The county is located in the Central region of Kenya (See Appendix 1). Murang'a County has a population of 942,581 which translates to about 524 people per square kilometre. It has seven sub-counties, namely, Kangema, Mathioya, Kiharu, Kigumo, Maragwa, Kandara and Gatanga, each of which has at least one sub county hospital. This county was selected because it has a largely rural population but is still vibrant in provision of healthcare services. For example, it was among the first counties to open a COVID-19 intensive care unit with a 35-bed capacity in April 2020 as a response to the pandemic, public hospitals in this County also extend their services

to patients from the neighbouring Counties of Nyeri, Machakos and Kirinyaga as these facilities are more accessible than their respective main county referral hospitals. It is therefore expected that the healthcare staff experienced and may still be experiencing burnout and thus the reason for its choice. Recently they have added the Kang'ata Care which encourages hospital deliveries and takes care of those with chronic illnesses and so they come for reviews in the different county hospitals.

Population

This study targets 611 nurses working in Murang'a County in all levels of government hospitals. The accessible population of the nurses is 439 formally employed nurses working in the sub-county public health hospitals in 6 sub-counties and in the county referral hospital. There are 347 female and 92 male nurses serving the seven facilities in the county. This population has been selected because it works in the sub-county and county hospitals which handle larger populations of patients and also provide more specialized services compared to the lower levels (level 3 and below). Table 1 shows the distribution of nurses and facilities in sub-counties.

Table 1 *Distribution of the Study Population*

Sub County Name	Main Hospital	Sub County	Female Nurses	Male Nurses	Total Number of Nurses
1.Gatanga	Kirwara		37	4	41
2.Murang'a South	Maragwa		73	15	88
3.Kigumo	Kigumo		26	4	30
4.Kiharu	1.Murang'a hospital	Referral	138	49	187
	2.Muriranjias		31	8	39
5.Kandara	Kandara		27	3	30
6.Kangema	Kangema		15	9	24

TOTAL	347	92	439
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Source: Murang'a County Government (2022)

Sampling Design

The study utilized both probability and non-probability sampling designs. According to ^[41] a probability design provides the participants with the equal opportunity to participate in research while a non-probability design-clients are chosen according to their availability or convenience. The probability design was applied to the selection of the six sub-counties and the selection of nurses from each sub-county hospital so as to come up with a study sample. This gave equal chance for any subcounty or nurse participant to be part of the study. The non-probability design was used in the choice of the county and the selection of the sub-county hospitals because they had the required characteristics suitable for the current study. Figure 3.1 shows the sampling design.

Sampling Frame

A sampling frame, as ^[41] offers, is a list of available respondents in the target population either through their mail or published names. In this study, the researcher made use of a single sampling frame of all the published names of nurses working in Murang'a County, whether under contract or permanent employment. The reason for this sampling frame is because whether the participants are on contract or permanent employment, they provide services to the same population of patients. Furthermore, the list of available names is published by the records office in each sub-county hospital on a monthly basis and so it is ever up-to-date.

Sampling Procedure

This study applied multi-stage sampling procedure in selecting the participants of the study. In this case Murang'a County was purposively sampled because it has the desired characteristics of a busy rural hospital. Similarly, six sub-counties were purposively selected because the subcounty hospitals are located within them. Six sub-county hospitals were selected through purposive sampling as well as they allowed the researcher to apply own judgement. Random sampling was used in selecting the participants for the study because it gave them an equal chance in participating in the study. To achieve this random sample,

the researcher used a list acquired from the records office to select random names of participants who were then allowed to participate in the study.

Sample Size

The researcher selected a sample of 209 participants (Female = 140, Male =69) from the accessible population which was generated using a Yamane (1967) formula for calculating sample size. This formula was used because it is used in generating sample sizes of different populations and is simplified. The sample generation is shown below.

$$n = \frac{N}{1 + N(e)^2}$$

Where n = desired sample size,

N= the study population and

e= margin of error. Therefore:

$$n = \frac{439}{1 + 439(0.05)^2}$$

$$n = 209.296 = 209$$

The distribution of the sample is shown below in table 2

Table 2: Distribution of the Sample Size

Sub County Name	Main County Hospital	Sub County Nurses	Female Nurses	Male Nurses	Total Number of Nurses	Sample Distribution		Total Sample
						Female	Male	
1.Gatanga	Kirwara		37	4	41	13	4	17
2.Murang'a South	Maragwa		73	15	88	23	10	33
3.Kigumo	Kigumo		26	4	30	13	4	17
4.Kiharu	1.Murang'a Referral hospital		138	49	187	63	40	103
	2.Muriranjias		31	8	39	21	8	29
5.Kandara	Kandara		27	3	30	17	3	20
TOTAL			347	83	439	140	69	209

Research Procedures

This section outlines the sources of data and the instruments to be used to collect data for each variable. Data collection is the process of gathering information from the respondents within a given period of time and using a specified instrument. This research relied on primary data collected from the respondents on their experiences of burnout and psychological wellbeing.

Pilot Study

A pilot study was conducted in Kangema Sub County Hospital on a sample of 23 participants, who accounted for 10 percent of the total population. According to [42], a 10 percent of the total sample is suitable for a pilot study using a correlational design. Kangema Sub-County was selected because the participants had similar characteristics as the study population. In order to avoid data contamination, the participants of the pilot study were excluded from the actual study. Data from the pilot study produced a Cronbach's alpha of 0.823 and 0.784 for MBI-HSS and PWBS-18 respectively. All the items were found suitable for data collection permitting progress to the next level of data collection.

Research Instruments

The following research instruments were used for the study.

Maslach Burnout Inventory for Medical Personnel (MBI-HSS-MP)

In order to collect data on burnout, the researcher used the Maslach Burnout Inventory for Human Services Survey on Medical Personnel [26]. This tool was originated by [26] and it assesses how individuals who provide human services experience exhaustion and burnout. Since medical personnel are much studied than many other populations, this tool was specifically tailored in order to capture some constructs that are specific to them. The tool contains 22 items with seven points and are distributed across 3 dimensions of emotional exhaustion (EE), Personal accomplishment (PA), and Depersonalization (DP). The EE has nine items, PA eight items and DP five items. The response scales range from 0-7 where 0 = never, 1 = a few times a year or less, 2 = once a month or less, 3 = a few times a month, 4 = once a week, 5 = a few times a week, and 6 = every day. The highest possible score for this tool is 154 while the lowest possible score is 22. Items 1-7 are meant to measure emotional exhaustion, 8-14 depersonalization and 15-22 reduced personal achievement.

The tool was scored by summing up the item scores for each dimension and dividing them into dimensions of low, moderate and high. The highest score for EE and DP is 49 and 56 for PA while the lowest possible score for EE and DP is 7 and 8 for PA. The scores can be divided into ranges of 7-21 (low), 22-36 (moderate) and 37-49 (high) for EE and DP and 7-23 (low), 24-39 (moderate) and 40-56 (high) for DP.

Psychological Wellbeing Scale

Psychological Wellbeing was measured using the Psychological Wellbeing Scale (PWBS-18). This scale was developed by Ryff and Keyes (1995). This tool consists of 18 survey items in which respondents give a rating of how strongly they agree or disagree with the 18 statements on a 7-point scale. There are 6 subscales in the PWBS which include autonomy (items 15, 17, 18), environmental mastery (items 4, 8, 9), personal growth (items 11, 12, 14), positive relations with others (items 6, 13, 16), purpose in life (items 3, 7, 10), and self-acceptance (items 1, 2, 5). Item 1, 2, 3, 8, 9, 11, 12, 13, 17 and 18 are reverse coded. The 7-point scale consists of: 1 = strongly agree, 2 = somewhat disagree, 3 = a little agree; 4 = neither agree or disagree; 5 = a little disagree; 6 = somewhat disagree; 7 = strongly disagree. In order to calculate the scores of every respondent to the items, the scores are summed where higher scores imply higher levels of psychological wellbeing. Accordingly, the highest possible score for this tool is 126 and the lowest possible score is 18. By dividing the scores into low, moderate and high levels psychological wellbeing, a score of 18-54 counted as low, 55-90 moderate, and 91-126 (high). The current study adopted this scoring methods of the instruments because it gives a more direct interpretation of the dimension scores. The tools have also been tested in different contexts where high consistency levels were realized making it suitable for a Kenyan setting, and thus its adoption.

Validity and Reliability

Validity

Validity is the capacity of a tool to measure what it purports to measure. This study made use of face, content and construct validities. Face validity was achieved by ensuring that the tool is as consistent as possible with the subject matter of the research and that it was well understood by the participants. Content validity was achieved by ensuring that extensive

literature review informs the construction of the tool as well as expert opinion on the quality of the tool. This ensured that all the items covered the subject matter of the research.

Construct validity on the other hand was achieved by ensuring that the items of the study are those contained in the topic and objectives of the study. The MBI-HSS was validated in a study by [42] population of dental students in a Spanish university on a sample of 533 participants. Its construct validity was found to have a value (> 1.5) explaining for 51.2% of the total variance and a specificity of 92.1% with an area under curve of 0.96. This makes it suitable for the current study. Although this population differed from that of nurses, it is assumed that the experiences of dental students was closely related to that of nurses because of similar work environments.

On the other hand, [43] conducted a study to determine the validity and reliability of the PWBS-18 during the recruitment of clinical nurses in a medical centre in Taipei, Taiwan. The construct and criterion validities were tested in the study which were found to be good with a confirmatory factor index (CFI) was found at 0.90. This makes it suitable for the current study because of the high level of validity.

Reliability

The MBI-HSS-MP was selected because it has good psychometric properties in assessing burnout accurately among healthcare professionals in the three dimensions of emotional exhaustion (EE), personal achievement (PA) and depersonalization (DP). The tool was tested on a population of 306 health professionals in Persia where a comparative fit index was .941 and the Tucker Lewis index at .929. Its test-retest reliability of the items was satisfactory and differential item functioning was not found across genders or healthcare professionals [44]. On the other hand, the PWBS-18 was preferred because after it was applied on a population of 474 nurses in Taiwan it produced a Cronbach's alpha of .880 and aggregate subscale alphas of .720 to .880 except .570 for autonomy. Despite that, its construct and criterion validity of the short form were good [45] With the validation from the cited research, the tools were found to be reliable after pilot study which reaffirmed their capacity for the current study.

Data Analysis Methods

The researcher made use of both descriptive and inferential statistics to analyse data. Descriptive statistics involved percentages, mean and standard deviation and were chosen to help in quantifying and describing the basic features of the collected data. On the other hand, inferential statistics was useful because they helped in showing the extent of interaction between the burnout and psychological wellbeing among nurses.

Ethical Consideration

As a requisite for any research exercise, the researcher obtained authorization to carry out the study from United States International University graduate school -Institutional Research Board (IRB) and the National Commission for Science, Technology and Innovation (NACOSTI). The permit assisted the researcher to obtain a mandate from both county and respective sub county levels of administration. The researcher also sought permission from the instrument developers in order to use the instrument on the participants of the study. The researcher provided informed consent to the participants by explaining the purpose, harms and benefits of the research to the respondents. Furthermore, the respondents were free to participate in the study or withdraw at any time with no penalty to their decision. The researcher then obtained a written consent from each of the participants before recruiting them for the study.

Confidentiality was assured to the participants by making sure that the study instrument does not bear any name of the participants. A code was assigned to each participant. The questionnaires also remained under lock and key and were only accessed during the period of analysis. The questionnaires were destroyed six months after analysis and after the work has been submitted and published to ensure that no unauthorized access is made on them. The soft data was however kept and protected with a password so that it may be produced on demand.

After the research, the participants were debriefed in case they experienced any form of discomfort and reassured on the privacy of their information. The researcher helped the participants who experienced psychological distress after completing the test by providing them with psychological first aid and later referring them for psychological therapy.

Results

Response Rate

This study sampled 209 participants to whom questionnaires were issued. Out of the issued questionnaires, 205 were returned accounting for a response rate of 98.1%. The response rate is shown in table 3

Table 3 *Response Rate*

Sample	Collected Questionnaires	Response Rate (%)
209	205	98.1

objectives.

4.3.1 Demographic characteristics

The researcher sought to describe the demographic characteristics of the respondents. These were measured in terms of age, gender, length of service, marital status and level of education. The findings for the demographic characteristics are shown in table 4.

Table 4 *Demographic Characteristics of the Respondents*

	Frequency	Percent
Age		
Below 30 years	52	25.4
31-40	85	41.5
41-50	34	16.6
51+	34	16.6
Gender		
Male	46	22.4
Female	159	77.6
Length of service		
Below 5 years	35	17.1
5-10	53	25.9
11-15	45	22.0
16-20	21	10.2
21+	51	24.9
Marital status		
Single	59	28.8
Married	142	69.3
Divorced	3	1.5
Separated	1	.5
Level of education		
Certificate	10	4.9
Diploma	152	74.1
Degree	39	19.0
Masters	4	2.0
Total	205	100

Table 4 shows that 41.5% of the participants were aged between 31-40 years. Those aged 41-50 years and 51 and above were the least accounting for 16.6% each. Over three quarters (77.6%) of the participants were female and less than a quarter (22.4%) male. Slightly over a

quarter (25.9%) of the participants had worked for a period of 5-10 years and only 10.2% had worked for a period of 16-20 years. Over two thirds (69.3%) were married and only 0.5% were separated. Those with diploma were nearly three quarters (74.1%) of the total participants and only 2% held a Master's degree. The findings on demographic characteristics of the participants indicate that each of the targeted projected characteristics was available among the respondents. This indicates that the data was representative and suitable for analysis.

Relationship between Burnout and Psychological Wellbeing

The main objective of this study was to examine the relationship between burnout and psychological wellbeing. Although the original items are ordinal, composite scores were treated as continuous variables for Pearson correlation, as is common in psychological research. The relationship between burnout and psychological wellbeing was examined by correlating burnout together with its components and psychological wellbeing. The null hypothesis was also tested.

H₀: There is no statistically significant relationship between burnout and psychological wellbeing among nurses in Murang'a County Hospitals.

It was thus rejected and restated as below:

H_A: There is a statistically significant relationship between burnout and psychological wellbeing among nurses in Murang'a County Hospitals.

The findings are shown in table 5.

Table 5 *Relationship between Burnout and Psychological Wellbeing*

		Psychological Wellbeing
Burnout	Pearson Correlation	-.384**
	Sig. (2-tailed)	.000
	N	205
Emotional Exhaustion	Pearson Correlation	-.192**
	Sig. (2-tailed)	.006

	N	205
Depersonalization	Pearson Correlation	-.356**
	Sig. (2-tailed)	.000
	N	205
Reduced Personal Achievement	Pearson Correlation	-.329**
	Sig. (2-tailed)	.000
	N	205

Table 5 shows that the individual dimensions of burnout were significantly correlated with psychological wellbeing; Emotional exhaustion [$r(205) = -.192, p = .000$]; Depersonalization [$r(205) = -.356, p = .006$]; and reduced personal achievement [$r(205) = .329, p = .000$]. The overall burnout was also found to be significantly correlated to psychological wellbeing [$r(205) = -.384, p = .000$]. The moderate negative correlation found ($r = -0.384$) suggests that as burnout increases, psychological wellbeing among nurses' declines. This supports the conceptual assumption that burnout undermines emotional and cognitive resources necessary for wellbeing. These results also support Maslach's conceptualization of burnout as a multidimensional syndrome that negatively impacts an individual's sense of accomplishment and emotional capacity, thus impairing aspects of Ryff's psychological wellbeing such as self-acceptance and purpose in life. Burnout effects are detrimental to nurse psychological wellbeing and can deplete positive emotions, erode positive relationships hinder self-worth and personal growth causing vicious cycle of vulnerability to burnout.

Discussions and Recommendations

These findings agree with [33] who found burnout to correlate significantly with psychological wellbeing of nurses in select European countries. The findings also agree with [35] who found the different domains of burnout to correlate with depression, even though the study focused on negative aspects of psychological wellbeing. [37] found positive correlation between psychological wellbeing and burnout, although GHQ-12 was used to measure psychological wellbeing and was the manipulated variable, possibly explaining the similarity. [40] also found a significant relationship between work-related variables

(including burnout) and personal wellbeing that measures individual subjective wellbeing, and thus the similarity. [14] studied psychological wellbeing in terms of distress, their findings resonated with the current study perhaps due to the COVID-19 period influence to the former.

The current study partially diverges from the findings by [39] which found Nigerian nurses' burnout to negatively correlate with physical health component of QOL scale – a difference that could be accounted for by the difference in measurement. The present study contradicted [34] who unlike the present study, used GHQ-28 to assess wellbeing, which emphasizes psychological distress rather than positive functioning, potentially explaining the divergent findings. [36] found social support to mediate the relationship between burnout and subjective wellbeing. Despite there being a relationship, the findings may not parallel the current study.

Recommendations

Healthcare institutions should implement structured interventions to reduce burnout risks such as workload management, psychological support programs and professional development which can promote nurses' psychological wellbeing.

The Ministry of Health in collaboration with county governments should tailor a policy that incorporates mental health in health care training, accessible psychological services, adequate staffing and fostering a culture of psychological safety and open dialogue.

Mental health practitioners can also play a role in advocacy and policy influence on mental health policies, action plans and mental health amendment acts to ensure continuous growth and attention to the nurse's wellbeing.

Suggestions for Further Studies

This study was correlational in nature and further studies may determine the causal relationship between burnout and psychological wellbeing.

Similar research can be conducted in other counties in Kenya to assess whether there are differences in burnout response in different regions.

A study on interventions to prevent occurrence of burnout amongst nurses in order to achieve and maintain a healthy psychological wellbeing.

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**IMPACT OF SOCIAL NETWORK STRUCTURES ON KNOWLEDGE SHARING
DYNAMICS FOR COMMUNITY EMPOWERMENT: A STUDY OF MANGO FARMERS
IN MAKING COUNTY**

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Abstract

This study examines the crucial role of social network structures in empowering mango farming communities in Makueni County, Kenya, by fostering enhanced knowledge-sharing dynamics. It examines how social network structures (formal and informal) are utilized to facilitate the dissemination of agricultural knowledge, improve market access, and strengthen community resilience, and assesses the role of digital platforms (e.g., WhatsApp, SMS groups) in enhancing knowledge exchange and collaboration among farmers, and finally to evaluate the contribution of social capital (trust, reciprocity, and collective action) in building resilience and economic empowerment among mango farming communities. The study was anchored on Social Capital Theory (SCT). The study employed a survey as a research design. The target population was 12622 registered mango farmers. The sample size of the study was 292 individuals who were sampled using multi-criteria and calculated using Andrew Fisher's formula of 2023. Data collection tools were interviews, questionnaires, document reviews, and observations. The instruments were validated by piloting and reviewed by a panel of experts. Analysis was done through thematic narrative, which includes descriptive and inferential statistics. Results showed that these networks serve as powerful enablers of collective learning, joint resource mobilization, and economic coordination. Cooperatives and farmer groups not only enhance bargaining power but also provide vital access to inputs, training, and infrastructure, such as centralized processing and storage. Informal digital networks further accelerate the flow of information, enabling timely decisions on pest control, market prices, and climate adaptation. The study underscores the importance of social capital – trust, reciprocity, and shared norms as a foundation for effective knowledge exchange and sustainable development. Barriers affecting participation in social networks should be addressed, especially exclusion of small-scale farmers in the dominant networks, the need to promote trust building and transparent governance in networking where the networks should operate with clear leadership structures, regular meetings, and fair dispute resolutions processes to sustain farmers' confidence and long-term participation. There is need to set up local mechanism to monitor and evaluate the effectiveness of the social networks and how farmer groups are functioning, sharing knowledge and livelihoods, and strengthening areas with weak penetration of internet connections.

Keywords: Knowledge Sharing, Social Networks, Community Empowerment.

Introduction and Background of the Study

Knowledge sharing in agriculture is essential for sustainable development and improving food security. Through various knowledge sharing programs, an increase in accessibility and visibility of research products related to food and agriculture has been made available, accessible, and usable globally. The Knowledge Lab supports initiatives building the capabilities of the communities of practice by providing specialized online training activities to current stakeholders who utilize the knowledge platforms, providing free access to structured bibliographic records on food and agricultural literature in over ninety languages, while other organizations focus on subscription-based journals to advance higher education and inform public policy decisions.

Statement of the Problem

Despite the increasing recognition of agriculture as the backbone and driver of rural development in Kenya, small-scale mango farmers in Makueni County continue to face challenges related to poor market access and limited adoption of improved farming practices. The challenges are mostly rooted in inadequate access to real-time, relevant, and practical agricultural knowledge. Traditional Extension officers are stretched to reach all farmers effectively, leading to a gap that hinders resilience, innovation, and economic empowerment. Emerging evidence suggests that social network structures can play a vital role in enhancing knowledge sharing among farmers. These networks offer a pathway for information exchange, resource mobilization, and collective actions, all critical for community empowerment and sustainable agricultural development. This study investigates the Impact of Social Network Structures on Knowledge Sharing Dynamics for Community Empowerment for mango farmers in Makueni County.

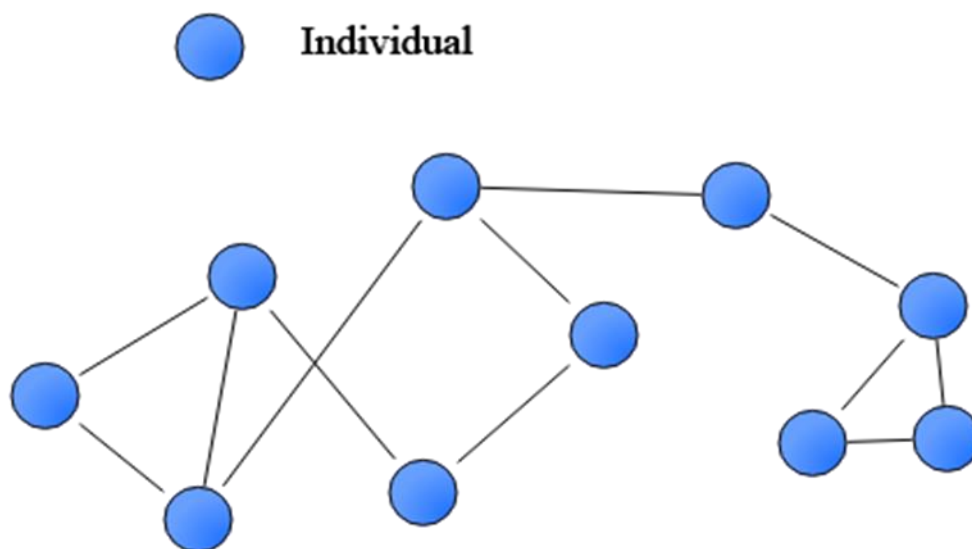
Objective of the Study

1. To identify the types of social network structures (formal and informal) used by mango farmers in Makueni County.

2. To analyze how the networks facilitate sharing of agricultural knowledge, practices, and innovations among mango farmers.
3. To assess the role of digital platforms such as WhatsApp and SMS groups in enhancing knowledge exchange and collaboration among farmers.
4. To evaluate the contribution of social capital (trust, reciprocity, and collective action) in building resilience and economic empowerment among mango farming communities.

Empirical Literature Review

A social network is a social structure between actors, either individuals or organizations. It shows how connections are made through various social familiarities, ranging from casual acquaintance to close familial bonds. The study of social networks is called both “social network analysis” and “social network theory” [17] Research in several academic disciplines have demonstrated that social networks operate on many levels, from families up to the level of nations, and play a great role in determining different way of problems solving on how organizations are run, and the degree to which individuals succeed in achieving their goals. Sociologists are interested in social networks because of their influence on and importance to the individual. Social networks are the basic tools used by individuals to meet other people, recreate, and find social support.



Social Network Illustration: An example of a social network diagram
Source: [17]

Social networks are interactive and digital channels that allow online communication [11]. These platforms encourage discussion, mass communication, advertising, and the sharing of knowledge [13]. They are online platforms and apps that people choose to use for virtual content production, sharing, and social engagement. Farms use social networks to communicate, seek knowledge, and form partnerships with other farms [5]. Social media platforms have enabled communication between farmers and their clients. They have also improved farmers' online presence and activity on social media. They use social networking sites for more than just obtaining information and connecting with other information searchers. Knowledge sharing is essential to expanding the spread of knowledge and extending the benefits of that knowledge. Connecting individuals is an efficient technique to encourage and facilitate knowledge sharing [12]. Social network, in computers, is an online community of individuals who exchange messages, share information, and sometimes cooperate on joint activities [14]. Social media and social networking are related ideas. However, social media is mostly about using social networking sites and similar platforms to grow an audience, whereas social networking is thought to be about users creating communities within themselves. Social networks facilitate the exchange of information, ideas, and resources, allowing users to stay connected and collaborate on different topics [4].

Types of social network structures

Social network structures refer to the patterns of relationships and interactions among individuals, groups, or organizations [15]. These structures influence how information flows, how influence is exerted, and how communities function. The network can either be formal or informal, playing the same role of knowledge sharing. Formal networks include formation of Farmer Cooperatives and Producer Groups, which entail cooperatives that offer structured, registered platforms where farmers collectively purchase inputs, sell produce, and access extension services. These formal networks reduce transaction costs and improve market access. The cooperative can be group-based or a Community-Based Organization (CBO). They convene regularly and operate under written bylaws and democratic governance. Farmer Research Committees is another formal social network that serves as a bridge entity between farmers and formal extension systems, enabling participatory trials and adaptation of technologies.

Informal Networks include Family, Kinship, Village Ties, and peer-to-peer networks ^[6]. This is when farmers often rely on kin and neighbor networks for new knowledge, local knowledge, and mutual support, especially where formal services are not available. Sharing knowledge informally is influenced by social capital, where information is exchanged according to factors such as reciprocity, trust, and reward. This fosters mutual accountability and pooling resources to gain additional advantages. Resilience and adaptation in communities provide Well-structured social networks that enhance community resilience by enabling rapid knowledge exchange during crises like droughts or pest outbreaks, helping farmers adapt more effectively.

Social network structures facilitate the sharing of agricultural knowledge

Social network structures play a crucial role in facilitating the sharing of agricultural knowledge by shaping how information flows among farmers, extension agents, and other stakeholders. Some of the roles played by social networks in facilitating knowledge sharing include creating bonding and bridging Ties ^[1]. Bonding ties involve close relationships among family, friends, and neighbors who help spread practical, experience-based knowledge within tight-knit communities. Bridging ties include connections to external actors like NGOs, researchers, or government officials who introduce new techniques and innovations that may not be available locally. Social network influences Centrality and Influence amongst farmers. ^[18] stated that farmers who occupy central positions in their local networks, those who are well-connected, often act as knowledge hubs, influencing others' adoption of new practices. These individuals can accelerate the diffusion of innovations like climate-smart agriculture or pest control methods.

Role of digital platforms in enhancing knowledge exchange

^[9] Digital platforms are powerful catalysts for enhancing knowledge exchange, transforming how individuals, communities, and organizations share and access information. Some of the roles played by digital platforms in enhancing knowledge exchange include facilitating real-time and asynchronous Communication. Digital platforms like forums, collaborative tools, and social media enable both instant and time-flexible interactions. This allows users across different time zones and disciplines to contribute insights, ask questions, and build on each other's knowledge, whether through

live webinars or archived discussion threads. ^[16] and ^[8] Digital platforms help in democratizing access to information, such as open-access journals, and knowledge repositories break down traditional barriers to education and expertise, despite the distance, as long as connectivity and access are provided. Digital platforms enable collective intelligence and innovation through features like crowdsourcing, peer review, and collaborative editing. Digital platforms harness the wisdom of the crowd. They support co-creation, refinement, and validation of knowledge, which accelerates problem-solving and drives innovation across sectors, promoting knowledge sharing globally.

Contribution of social capital in community empowerment and resilience

Social capital is viewed in terms of social relationships as nodes and ties. Nodes are the individual actors within the networks, and ties are the relationships between the actors. There can be many kinds of ties between the nodes. In its simplest form, a social network is a map of all of the relevant ties between the nodes being studied. The network can also be used to determine the social capital of individual actors. In sociology, social capital is the expected collective or economic benefits derived from the preferential treatment and cooperation between individuals and groups. According to the ^[10] Social capital plays a pivotal role in fostering community empowerment and resilience by strengthening the social fabric that binds individuals together to enhance knowledge sharing. Empowerment acts as a catalyst for positive change and collective well-being within a community. It enhances individual agency, fosters a sense of community efficacy, and contributes to the overall resilience and vibrancy of social connections.

Empowerment within a community ensures that individuals feel a sense of ownership and influence over their collective destiny and are actively involved in community activities.

^[3], empowerment contributes to the development of a community's social fabric. When individuals feel empowered, they are more likely to collaborate, share resources, and support one another. This collaborative spirit enhances the overall cohesion of the community and facilitates the creation of strong social bonds, fostering a sense of belonging and shared identity. Again, social capital plays a crucial role in fostering inclusivity and diversity. By empowering individuals from diverse backgrounds, communities can tap into a broader range of perspectives and talents. This inclusivity not only enriches the social capital by promoting a diversity of ideas but also ensures that a wide array of voices is heard

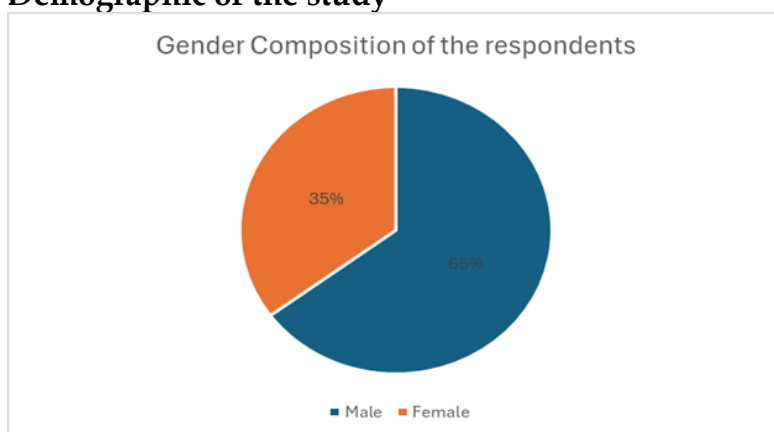
and valued within the community. [1] social capital builds resilience to the community by empowerment through trust and participation, facilitating collective action and promoting inclusion and equity, which leads to higher levels of trust, safety, and mutual support in the communities.

Methodology

The research used survey design, random sampling was used to get the sample population and simple random sampling was used to get the target population. Mixed research methods were used to collect data, and the tools for collecting data were questionnaires and focus groups. The analysis of the data commenced from descriptive to inferential statistics, and lastly, the findings were interpreted into a conclusion. The results were presented clearly and concisely, with tables and graphs that were appropriate to visualize the data. The researcher conducted a pilot study to ensure validity and tested the tools to ensure reliability and measurement of the study. Ethical Clearance were approved before the study commenced.

4.0 Data Interpretation, Findings and Discussion

Demographic of the study



Types of social network structures

The results indicate that the most commonly used communication channel among respondents is social media and messaging, reported by 66.3% (n = 169) of the sample. Agricultural Platforms are the second most prevalent, utilized by 20.8% (n = 53) of respondents. Radio is also notable, with 9.8% (n = 25) indicating it as their primary network. Other channels-including Farmer Networks, Direct Communication, Print Media, and Workshops/Seminars-are each used by less than 1% of respondents. Only 1.2% (n = 3)

reported not using any network at all. The data findings indicated that several networks are in place, including both traditional and digital networks.

Social Network used	Frequency	Percent
Social media & Messaging	169	66.27%
Agricultural Platforms	53	20.78%
Radio	25	9.80%
Do not use	3	1.18%
Farmer Networks	2	0.78%
Direct Communication	1	0.39%
Print Media	1	0.39%
Workshops/Seminars	1	0.39%
Total	255	100.00%

Source: Field Data,2025

The findings highlight a strong reliance on digital and social media platforms for information dissemination, with traditional media like radio still serving a significant minority, while other forms of communication play a minimal role in this context. The findings suggest that more farmers prefer digital networks to traditional networks.

Types of Agricultural Information Shared

The study sought to understand the type of information shared on the social network. The study revealed that different Information is shared on social networks. The respondents reported on a wide range of topics. The most commonly shared information relates to Crop & Farm Management, which accounts for nearly 31% of all responses. This is followed by Market Links & Value Chains (15.3%) and General Innovations (9.4%). Other notable categories include Innovations & Digital Technologies (7.1%), Community Engagement & Extension (5.9%), and Irrigation & Water Management, Language & Localization, and Variety & Seed Selection (4.7%). A small proportion of respondents (1.96%) indicated they share no agricultural information.

The study therefore noted that most shared information includes best crop management practices, which include soil testing, the appropriate type of mango tree, irrigation, climate change, adopting new technologies, and accessing markets, are among the most shared information by the farmers.

Role of digital platforms in enhancing knowledge exchange

When asked how using digital platforms has improved their access to agricultural knowledge, respondents provided a broad spectrum of answers, which have been grouped into meaningful categories. The most frequently cited improvement was Information Sharing & Communication, representing 44.5% of all responses. This highlights the central role that digital platforms play in facilitating the exchange of knowledge, ideas, and best practices among farmers and agricultural stakeholders. Other notable areas of improvement include Water & Irrigation Management (11.0%), reflecting the importance of efficient water use and irrigation techniques in modern agriculture. Both Market Access & Trends and Technology & Innovation were each cited in 10.2% of responses, indicating that social networks are valuable tools for being informed about market opportunities and technological advancements. Production & Yield Improvement was mentioned in 9.4% of the responses, while Training, Knowledge & Extension activities made up 8.2%. These findings suggest that digital platforms are key sources of current and innovative agricultural practices. Overall, these results demonstrate that digital platforms have become a vital resource for accessing a wide range of agricultural knowledge, from best technical practices to market information and collaborative opportunities. The research concludes that digital platforms have revolutionized access to agricultural knowledge, making it faster, broader, and more collaborative. When integrated with formal agricultural support systems, they can significantly enhance productivity, sustainability, and resilience in farming communities.

Contribution of social capital in community empowerment and resilience

The study sought to understand the challenges farmers experience when using social capital to share knowledge. The results reveal the main challenges farmers face when using social capital for knowledge sharing as follows: Misinformation, fake information, and mistrust are the most commonly reported issues (52.94%), followed by information overload (21.96%). Connectivity issues (14.90%) and market access and buyer-related challenges (10.98%) are also significant barriers. Technical or operational issues (6.67%), monetization or commercialization of information (13.14%). The study concludes that social capital can contribute to a major knowledge sharing tool among the farmers and peer to peer if enhanced in the communities through training programs on how to filter fake information

and remain with reliable and verifiable information alone, this will help in reducing information overload and fake information as well.

Conclusions and Recommendations

Social network structure, both formal and informal, plays a great role in facilitating the sharing of agricultural knowledge among mango farmers. Formal structures such as cooperatives, farmer associations, and extension-linked groups provide organized channels through which technical knowledge, training, and resources are disseminated efficiently. These platforms offer structured learning environments, collective bargaining power, and access to institutional support, enabling farmers to adopt modern and sustainable practices. Equally important are informal networks, including family ties, neighbor interactions, local savings groups (chamas), and increasingly, digital platforms like WhatsApp. These informal structures foster trust-based knowledge exchange, quick information dissemination, and peer-to-peer learning, particularly on matters such as pest control, weather patterns, and market opportunities. They help overcome barriers such as limited extension coverage and literacy challenges, ensuring that practical and locally relevant knowledge circulates widely and rapidly.

Overall, social network structures enhance collaboration, innovation diffusion, and community empowerment. They serve as a foundation for building social capital, strengthening resilience, and fostering inclusive agricultural development especially in rural contexts like Makueni County, where resource constraints and geographic dispersion make individual learning and access difficult. The integration of both formal and informal networks creates a robust ecosystem for continuous agricultural learning and transformation.

Recommendations

- 1) **Strengthen Farmer Cooperatives and Producer Groups:** The County Government and development partners should continue to support the formation and capacity building of farmer cooperatives. These groups provide structured environments for

disseminating agricultural information, organizing training, and linking farmers to extension officers and buyers.

- 2) **Expand Access to Digital Platforms for Knowledge Sharing:** Promote the use of digital tools, especially WhatsApp, SMS groups, and Agri-mobile apps by training farmers in digital literacy and supporting affordable smartphone access. These platforms have proven effective in enabling rapid, peer-to-peer knowledge transfer.
- 3) **Train and Deploy More Village-Based Advisors (VBAs):** Invest in training local lead farmers or community-based advisors to act as trusted sources of information within their social networks. VBAs can serve as effective mediators between formal extension services and grassroots farmer groups.
- 4) **Leverage Informal Networks through Inclusive Community Programs:** Recognize and support informal networks like *chamas*, women's groups, and religious associations as channels for agricultural learning. Integrating extension services with these groups can help reach marginalized or hard-to-reach farmers.
- 5) **Develop Community-Based Knowledge Hubs:** Establish village or ward-level resource centers or demonstration farms where farmers can gather, access printed/digital materials, and participate in field days. These can become local focal points for structured and informal knowledge exchange.
- 6) **Encourage Farmer-to-Farmer Knowledge Sharing Initiatives:** Facilitate farmer exposure visits, inter-group exchange forums, and peer demonstrations where experienced farmers can share best practices in mango production with others, particularly youths and new entrants.
- 7) **Monitor and Evaluate Knowledge Flows in Social Networks.** Implement tools to map and analyze how knowledge flows within and between networks, so that gaps can be addressed and effective structures strengthened. This can help extension programs become more targeted and community-driven.
- 8) **Promote Trust and Transparency within Groups:** Provide leadership and governance training for group leaders to ensure that networks function transparently, inclusively, and with mutual respect, essential for maintaining trust and consistent participation in knowledge-sharing activities.

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INFLUENCE OF COMMERCIAL BANKS' WEIGHTED INTEREST RATE ON CONSTRUCTION INDUSTRY GROWTH RATE IN KENYA

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Abstract

The importance of construction industry in any economy cannot be overemphasized. This is due to the major role played by this industry in building construction, dam construction and many other major infrastructure developments in the economy. In Kenya, this industry is indispensable. Over and above the above-stated roles, it is also a major contributor to the country's gross domestic product (GDP). In line with this, this study sought to establish whether the industry's growth rate is affected by interest rates due to its heavy reliance on borrowed funds. To achieve this goal, data was obtained from the Kenya National Bureau of Statistics (KNBS) and the Central Bank of Kenya (CBK). Time Series data was collected using an abstraction sheet for two variables; Construction Output Growth Rate (COGR) and Commercial Banks's Weighted Interest Rate (CBWR) for 48 years (1977 – 2024). Data was analysed using EViews software version 10. Analysis was done in three ways which included graphical, correlation and regression analysis. Results showed that construction industry output growth rate is impacted by commercial banks' interest rates. Graphically, it is observed that if CBR rises, COGR drops, even though not immediately. Correlation analysis showed that COGR and CBWR are inversely correlated with a coefficient (r) of -0.336. Finally, the first differences of COGR were regressed on the first differences of CBWR and gave an R^2 value of 0.000074 in the current year of construction. But when COGR is regressed on lagged CBWR by one (1) year up to thirteen (13) years, the R^2 value changed to 0.365 with a regression coefficient (β) of -0.481438 indicating that COGR is negatively impacted by CBWR, but not in the current year of construction but much later. These findings can be used to inform policy formulation for the construction industry growth in Kenya.

Key Words: Construction Industry Output, Time Series, First Differences

Introduction

Construction industry is globally recognized as a key contributor to any economy's gross domestic product (GDP). Several researchers have pointed this out indicating that an economy cannot stand in the absence of the construction industry [1-3]. The industry is viewed from this perspective due to the important role that it plays in the economy. These roles involve provision of physical infrastructure and constructed facilities such as roads, railways, airports, seaports, and buildings. The industry is also charged with the role of demolition and maintenance of the physical infrastructure and the constructed facilities.

While the industry performs the above-stated roles, it also employs the unemployed. This ranges from unskilled to skilled and professional workers in the industry. In the year 2023, the industry recorded an employment growth of 2.1% growth rate in the public sector. This is an increase from 9,500 people in 2022 to 9,700 employees in 2023, KNBS⁴. The construction industry in the private sector also experienced similar growth in employment during the same period as observed in KNBS⁴. It recorded a growth of 1.8%, which increased the number employed by the industry to 226,300 people in 2023.

From the foregoing observations, the importance of the construction industry to the economy cannot be overemphasized. For the industry in Kenya to continue playing this pivotal role, it is necessary to point out the challenges the industry faces such as growth fluctuations. This study sought to determine what causes fluctuations in growth of construction and Industry in Kenya. and stunted growth of the industry in Kenya. In this regard, this paper examines whether interest rates may be one of the causes of these fluctuations and if they can be used as a policy instrument to control and manage the industry for steady growth.

The objective of this study was to establish whether the impact of commercial banks' weighted interest rates can be used to control and manage the construction industry in Kenya at macro- macro-level for the growth trajectory of the industry. The industry growth rates fluctuate a lot as opposed to an ideal steady growth as envisaged in Vision 2030. This means that the industry in Kenya, as it is, cannot meet the demand for constructed facilities

in the country. There is indeed a need for a policy instrument to guide and enable the industry to achieve or realize the goals of Vision 2030. The study followed the path taken by Bickerton¹, who studied the London Interbank Offered Rate (LIBOR) and the UK's construction industry output as reported in 2013.

Method

This study adopted a quantitative strategy and longitudinal research design. The quantitative research approach emphasizes on quantification of data in both the way it is collected and the manner it is analyzed [5]. A longitudinal research design is adopted in this study because the data collected is ordered in time. Data was obtained from the Kenya National Bureau of Statistics (KNBS) and the Central Bank of Kenya (CBK) and analyzed using bivariate regression analysis, which falls under time series analysis. The two-time series variables in this study are construction output growth rate (COGR) and commercial banks' weighted interest rate covering forty-seven (47) years. Data analysis was conducted using EViews version 10, incorporating graphical analysis, correlation analysis, stationarity tests, and regression analysis. The construction output growth rate (dependent variable) was regressed against commercial banks' interest rate (independent variable) using first-difference transformations.

Regression was carried out by applying the standard time series bivariate regression model to the construction output growth rate and the following regression equation was formulated as follows: -

$$COGR_t = \alpha + \beta_1 CBWR_t + \beta_1 CBWR_{t-1} \dots\dots + \varepsilon_t$$

Where:

$COGR_t$ = Construction Output Growth Rate in a specific year

$CBWR_t$ = Weighted Interest Rates of Commercial Banks in a specific year

β = Regression Coefficient

ε = Error Term or Residual

α = Intercept - the $COGR_t$ value when independent variables are zero-rated

The hypothesis in this study is that construction output growth rate levels are impacted by interest rates in Kenya. Therefore, the research hypothesis (H_1) is expressed

mathematically in the study as $\beta_i \neq 0$ for a single coefficient of regression, and the null hypothesis is taken as (H_0) such that $\beta_i = 0$. Therefore, the null hypothesis can be stated as follows:

H₀: Construction output growth rate levels in Kenya are not influenced by commercial banks' weighted interest rates in Kenya.

Data

I. Graphical Analysis

This is usually important in any work involving econometrics, where economic data for economic variables is analyzed. In this case, economic variables are the construction industry growth rate (COGR) and commercial banks' weighted interest rate. Data for the two variables was collected from 1977 to 2024 and graphically presented in Figures 1, 2 and 3.

Fig. 1: Construction Output Growth Rate (%) 1977 - 2024

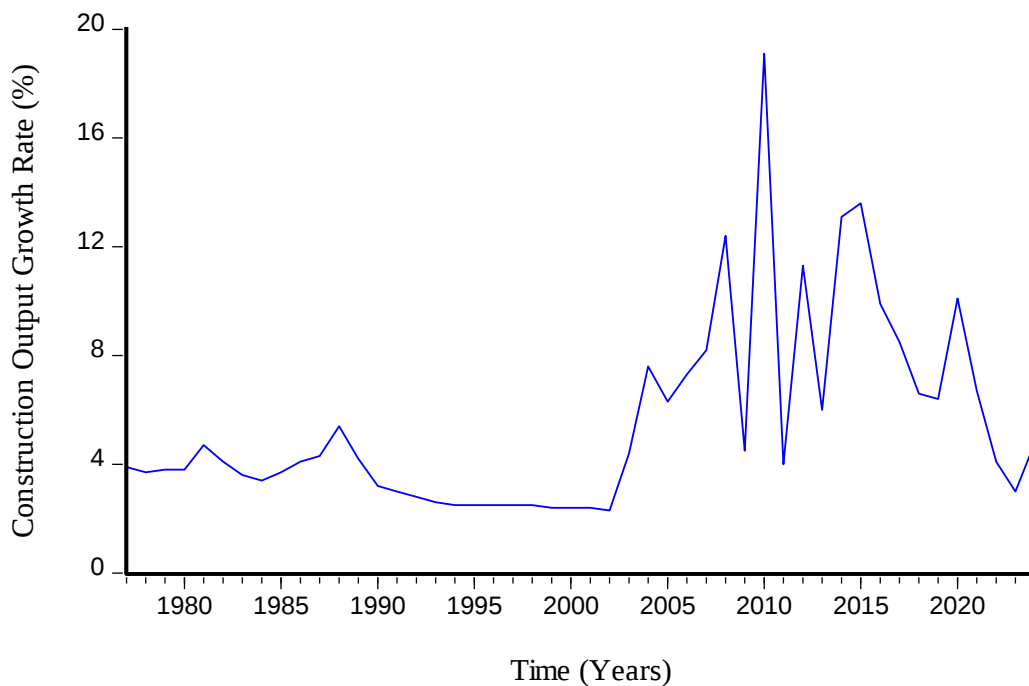


Fig. 2: Commercial Bank Weighted Interest Rate (%) 1977 - 2024

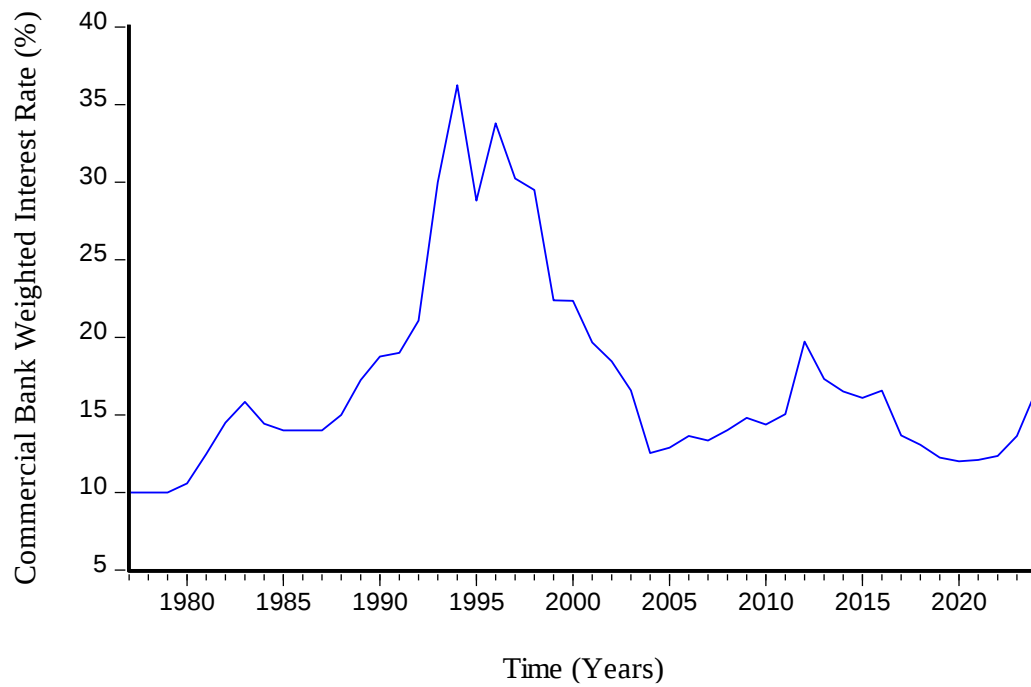
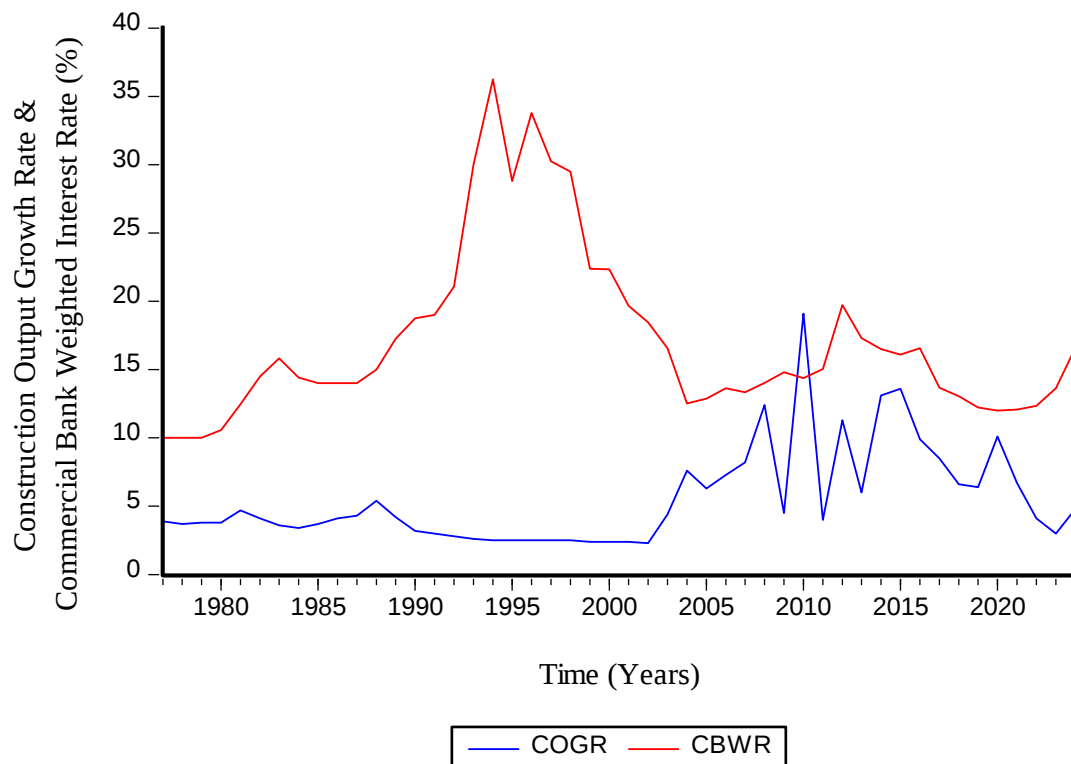


Fig. 3: Construction Output Growth Rate & Commercial Bank Weighted Interest Rate (%) 1977 - 2024



II. Correlation analysis

Table 1: Correlation Coefficient (r)

	COGR	CBWR
COGR	1.000000	-0.335755
CBWR	-0.335755	1.000000

Table 1 above displays the result of the correlation analysis. Construction output growth rate (COGR) is inversely correlated to commercial bank-weighted interest rate. This relationship is denoted by a correlation coefficient (r) of -0.336. Thus, when interest rates go up, it suppresses growth rate of the construction industry in Kenya and vice versa.

III. Stationarity Tests

Table 2: Unit Root Test Results for Undifferenced COGR

Null Hypothesis: COGR has a unit root

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.719090	0.4152
Test critical values:		
1% level	-3.581152	
5% level	-2.926622	
10% level	-2.601424	

Table 2 displays the stationarity test results for COGR before differencing. The indicated p-value of 0.4152 is clear proof of the presence of a unit root in this data. Therefore, the null hypothesis that COGR has a unit is upheld.

Table 3: Unit Root Test Results for First Differences of COGR

Null Hypothesis: D(COGR) has a unit root

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-17.24598	0.0000
Test critical values:		
1% level	-3.581152	
5% level	-2.926622	
10% level	-2.601424	

The first differences of COGR data are stationary. These results are confirmed by a p-value of 0.0000 as indicated in table 3.

Table 4: Unit Root Test Results for Undifferenced CBWR

Null Hypothesis: CBWR has a unit root

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.752640	0.3989
Test critical values:		
1% level	-3.577723	
5% level	-2.925169	
10% level	-2.600658	

The unit root test results of the undifferenced CBWR are displayed on Table 4 above. The p-value of 0.3989 indicates the presence of a unit root, which is not desirable for time series data. Therefore, the first difference transformation is necessary to make the data stationary.

Table 5: Unit Root Test Results for First Differences of CBWR

Null Hypothesis: D(CBWR) has a unit root

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.480847	0.0000

Test critical values:	1% level	-3.581152
	5% level	-2.926622
	10% level	-2.601424

The unit root test results for the first differences of CBWR indicate stationarity. The results are shown in Table 5, where the p-value is 0.0000. This shows that the data can be analysed further and give accurate results.⁶

IV. Regression Analysis

Once it was confirmed that data for all the variables were stationary, regression analysis followed. COGR was regressed on CBWR in the current year and lagged by 1 to 13 years. The regression results are displayed on Tables 5 and 6.

Table 5: Regression Results of First Differences of COGR and CBWR

Included observations: 47 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	t			
C	0.017437	0.589325	0.029589	0.9765
D(CBWR)	0.012207	0.210944	0.057870	0.9541
R-squared	0.000074			

Table 6: Regression Results of First Differences of COGR and CBWR Lagged Up to 13 Years

Dependent Variable: D(COGR)

Method: Least Squares

Date: 03/13/25 Time: 13:58

Sample (adjusted): 1991 2024

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	t			

C	0.015828	0.853645	0.018541	0.9854
D(CBWR)	-0.106751	0.309806	-0.344574	0.7342
D(CBWR(-1))	-0.047908	0.310702	-0.154192	0.8791
D(CBWR(-2))	0.236104	0.302889	0.779508	0.4453
D(CBWR(-3))	-0.124089	0.301890	-0.411042	0.6856
D(CBWR(-4))	0.047166	0.323792	0.145667	0.8857
D(CBWR(-5))	-0.114541	0.323436	-0.354139	0.7271
D(CBWR(-6))	-0.325237	0.316418	-1.027874	0.3169
D(CBWR(-7))	0.164583	0.317689	0.518064	0.6104
D(CBWR(-8))	-0.063414	0.326030	-0.194503	0.8478
D(CBWR(-9))	-0.055089	0.316884	-0.173848	0.8638
D(CBWR(-10))	0.317383	0.298411	1.063575	0.3009
D(CBWR(-11))	-0.395891	0.298229	-1.327474	0.2001
D(CBWR(-12))	0.476004	0.302446	1.573849	0.1320
D(CBWR(-13))	-0.481438	0.308686	-1.559635	0.1353
	Mean dependent			
R-squared	0.364857	var		0.047059

Discussion

The results, as shown on Table 5, indicate that the commercial bank-weighted interest rate does not affect construction output in the current year of construction. From the table, the R^2 value and regression coefficient (β) are 0.00 and 0.012, respectively, which translates to no impact at all in the current year. However, the regression results of COGR on CBWR lagged by up to 13 years show a negative impact. The results from Table 6 show an R^2 value of 0.365 and a regression coefficient (β) of -0.481.

Conclusions

Results showed that Interest rates had no immediate significant impact on the growth of Kenya's construction industry, as indicated by a close to zero coefficient of determination (R^2). However, a lagged regression model demonstrated a stronger explanatory power, with a significant R^2 value, suggesting that commercial banks' weighted interest rates influence

construction output growth rate with a time lag. These findings highlight the lagged effects of commercial banks' weighted interest rates on the construction industry output growth rate and provide insights for economics and policy interventions.

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