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Spatial and Temporal Dynamics of Multidimensional Poverty in Khyber Pakhtunkhwa, Pakistan: A District-Level Analysis (2004 – 2020)

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Abstract

This study analyzes spatial and temporal dynamics of multidimensional poverty across 32 districts of Khyber Pakhtunkhwa, Pakistan, using 2004–05 to 2019–20 PSLM surveys. Applying the Alkire-Foster methodology, the Multidimensional Poverty Index (MPI) is constructed using education, health, and living standards dimensions. Results show, that although multidimensional poverty has declined overall in Khyber Pakhtunkhwa, large differences between districts continue to exist over time. Newly merged and remote districts (e.g., Kohistan, Mohmand, and Shangla) exhibit the highest MPI scores. Fixed-effects panel regressions reveal that higher dependency ratios, poor road infrastructure, and greater casual labor occurrence significantly increase multidimensional poverty. Year effects indicate significant poverty reduction until 2014–15, followed by partial reversal in 2019–20. Robustness checks using alternative poverty cut-offs (k=1/4) confirm stable district rankings. The findings demonstrate that multidimensional poverty in KP is structurally and spatially rooted, requiring district-specific, place-based policy interventions, as uniform policy approaches failed in resolving such like deprivations.

Keywords: Multidimensional poverty; Alkire-Foster methodology; district-level analysis; spatial disparities; fixed-effects model; PSLM
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1. INTRODUCTION

Poverty is a multidimensional problem that not only relates to income deprivation, but also arises from a lack of education, health, and living standards failities that jointly limit human capabilities and well-being (Sen, 1985; UNDP, 2010, 2019). The traditional income-based method for measurement of poverty is also useful but it often fails to capture the multiple and corresponding disadvantages experienced by households, mainly in developing countries where access to basic services and needs remains uneven (Ravallion, 2016; World Bank, 2018). Therefore, poverty should be understood and measured through a multidimensional lens for more effective

and inclusive policy responses (Alkire & Foster, 2011; Bourguignon & Chakravarty, 2003; Atkinson, 2015).

The Multidimensional Poverty Index (MPI), developed by Alkire and Foster (2011) and which was operationalized by the United Nations Development Programme (UNDP), has been widely accepted and employed to understand both the breadth and intensity of poverty. Unlike one-dimensional poverty measures, the MPI captures both the incidence and intensity of poverty by showing how many people are poor and the extent of their deprivation. Therefore, this methodology offers a nuanced understanding of deprivation (Alkire et al., 2015; Alkire & Santos, 2014). This methodology is widely used across countries to assess poverty dynamics and regional disparities (OPHI, 2018; UNDP, 2023).

In developing countries like Pakistan, poverty is considered a major development challenge linked with regional heterogeneity, inequalities and exposure to climatic shocks (Jamal, 2009; World Bank, 2016; Haque et al., 2021). The overall or average provincial poverty hides the district-level disparities. The unique geography of KP, characterized by conflicts, governance constraints, and repeated natural disasters has shaped development outcomes in the province (Hallegatte et al., 2016). Therefore in such situations district-level poverty assessment becomes essential to identify localized deprivation patterns and to design targeted policy interventions.

Some recent studies show that deprivations in education, health, and living conditions together create deprivation cycles (Dercon, 2004; Carter & Barrett, 2006; Heltberg et al., 2009). In KP, irregularities in school attendance, quality of education, health facilities, poor housing conditions, sanitation, and access to improved energy remain pronounced throughout the districts (Jamal, 2016). These disadvantages indicate that measuring poverty in one dimension is not enough. In Pakistan, several studies have employed the Alkire–Foster methodology to measure multidimensional poverty. Amjad et al. (2018) also applied the Multidimensional Poverty Index (MPI) using the 2013–14 Household Integrated Economic Survey (HIES) to assess the targeting performance of the Benazir Income Support Programme (BISP) and Zakat. However, the study focused only on assessing social protection programmes whereas spatial and temporal dynamics of multidimensional poverty at districts level were not studied. Furthermore, Haq et al. (2024) estimated multidimensional poverty in Pakistan at the national, provincial, and regional levels using the Alkire–Foster methodology. The study reported significant regional disparities in multidimensional poverty and identified education as the largest contributor to MPI, followed by living standards. However, the analysis was limited to national and provincial estimates and did not examine district-level spatial and temporal dynamics. Despite the growing literature on multidimensional poverty in Pakistan, temporal analysis at district-level for Khyber Pakhtunkhwa remains limited. Therefore this study also constructs a district-level Multidimensional Poverty Index (MPI) using multiple survey rounds from 2004–05 to 2019–20 employing the

Alkire–Foster methodology with three dimensions, namely, Education, Health, and Living Standards having equal weights.

This study contributes to the existing literature in several ways. First, it provides the longest temporal coverage of district-level MPI in KP (2004-05 to 2019-20), spanning seven PSLM survey rounds. This period covers multiple phases of conflict and stabilization in KP, including the Swat conflict (2007-2009), military operations in FATA (2004-2017), and the post-merger period (2018-2020).

Second, it is the first study to include 32 current districts of KP (the original 24 districts plus the eight newly merged former FATA districts: Bajaur, Khyber, Kurram, Mohmand, North Waziristan, Orakzai, South Waziristan, and Torghar) within a unified, methodologically comparable MPI framework. Prior estimates for these districts are not available in literature.

Third, the study integrates MPI decomposition with a district-level fixed-effects econometric model, enabling separation of structural determinants (geography, dependency ratios, and infrastructure deficits) from temporal shocks. This methodological integration has not been previously applied to KP's district-level poverty analysis.

This study is aligned with the objectives of the Sustainable Development Goals (SDG-1, No Poverty) and SDG-10 (Reduced Inequalities) (UN, 2015; UNDP, 2023).

2. CONCEPTUAL FRAMEWORK OF MULTIDIMENSIONAL POVERTY MEASUREMENT

Poverty is multi-dimensional and cannot be measured using one single indicator because there are several aspects of poverty that are not captured in income or consumption levels but affect human capabilities and the overall well-being of the poor, such as deprivations in education, health, and living conditions (Sen, 1985; Alkire & Foster, 2011). Sen's (1999) capability approach focuses on measuring what people can do with the capabilities they need to function and to enjoy a good life. Thus, the Multidimensional Poverty Index (MPI) is a well-adopted index that combines several indicators to give a more thorough picture of poverty. (Alkire & Santos, 2014; UNDP, 2019). This MPI framework is appropriate for estimating poverty in areas, such as in Khyber Pakhtunkhwa (KP) in Pakistan where opportunities and access to key public services are unevenly distributed (Carter & Barrett, 2006; Dercon, 2004). The indicators chosen are the dimensions of poverty in Khyber Pakhtunkhwa which are context-specific. Education-related indicators capture deficiencies in human capital and the intergenerational persistence of poverty, whereas health indicators measure access to essential preventive and maternal healthcare services. Living standards indicators show physical conditions and infrastructural access (UNDP, 2010; Hallegatte et al., 2016).

3. METHODOLOGY: CONSTRUCTION OF THE DISTRICT-LEVEL MULTIDIMENSIONAL POVERTY INDEX

3.1. Conceptual Foundation

This study employs the Alkire–Foster (AF) multidimensional poverty framework. The AF methodology is selected over alternative multidimensional poverty approaches, including fuzzy-set approaches, information-theoretic measures, and principal component methods, for several reasons specific to this study.

First, the AF framework is well suited to binary and ordinal deprivation indicators, which comprise most of the PSLM variables used in this study. (e.g., wall construction material, sanitation status, school attendance, and access to utilities). Methods based on continuous cardinal variables, such as Principal Component Analysis (PCA), are generally less suitable for binary and ordinal deprivation indicators, which constitute the majority of the indicators used in this study. Second, the dual cut-off methodology, together with the decomposition of poverty into incidence (H) and intensity (A), allows policymakers to distinguish between the prevalence of multidimensional poverty and the average intensity of deprivation among poor households. Third, the AF methodology produces decomposable results by dimension and indicator allowing consistent district-level and temporal comparisons across districts of Khyber Pakhtunkhwa. This is particularly important for spatial poverty analysis and district-level policy targeting.

Fourth, the AF framework aligns with Pakistan's official multidimensional poverty monitoring framework adopted by the Planning Commission of Pakistan and UNDP, thereby ensuring comparability with national MPI estimates and enhancing policy relevance (Planning Commission of Pakistan, 2016; UNDP, 2020).

The conceptual basis of this approach is grounded in the capability framework that highlights individuals' functional freedoms and opportunities (Sen, 1985, 1999). Furthermore, a district fixed effects model is also employed to determine the effect of different variables (dependency ratio, Km^2 per km of road and households with casual workers) on MPI at the district level. The fixed-effects model is ideal in this study and therefore is preferred over the random-effects model due to the risk of potential correlation between unobserved district-specific characteristics like geography, institutional capacity, and historical development patterns and the explanatory variables. This approach ensures a consistent and unbiased estimation by controlling for time-invariant heterogeneity across districts.

3.2. Dimensions, Indicators, And Weighting Structure

Following UNDP/OPHI (2023) guidelines, this study constructs the MPI using three equally weighted dimensions, namely, Education, Health, and Living Standards and equal weights of 1/3 (33.33 percent) are assigned to each dimension, reflecting that these dimensions are equally important (Alkire & Foster, 2011; Bourguignon & Chakravarty, 2003). Within each dimension,

equal weights are assigned to all indicators. Details of the three dimensions are given below.

a) Education Dimension (Weight = 1/3)

The education dimension includes Years of Schooling (A household is considered deprived if any household member above age 10 has not completed five years of schooling), Children Attending School (A household is deprived if any member between 6 and 11 years of age is not attending school) and Quality of Education (deprived if any child is not attending school because of insufficient teachers, school distance, high educational expenses, non-availability of a male or female teacher and non availability of essential facilities or substandard school). Each indicator within the dimension is assigned equal weight. Deprivation cut-offs are defined following the UNDP and OPHI guidelines, reflecting minimum acceptable educational attainment and access (UNDP, 2019; Alkire & Santos, 2014).

b) Health Dimension (Weight = 1/3)

The health dimension shows access to essential preventive health and maternal health services, indicated through Child Vaccination, Antenatal Check-ups and childbirth assistance by trained health professionals. These indicators show both child health and maternal health outcomes, which are relevant in regions exposed to service delivery gaps and constraints (Hallegatte et al., 2016; World Bank, 2018).

c) Living Standards Dimension (Weight = 1/3)

The living standards dimension shows household access to essential infrastructure and durable assets through Improved drinking water, Improved sanitation, Wall construction material, Overcrowding (4 or more individuals per room), Electricity, clean cooking fuel and asset ownership. Each indicator is assigned equal weight. This dimension reflects long-term structural deprivation and asset deficits, which are related to poverty and vulnerability in Pakistan (Carter & Barrett, 2006; Jamal, 2016).

3.3. Justification of the Indicators in the Context of Khyber Pakhtunkhwa

While the three dimensions follow UNDP/OPHI global standards, the specific indicators and deprivation thresholds have been adapted to the KP context as follows.

Education - Years of Schooling (threshold: 5 years): This threshold is based on KP's historically poor literacy rates (52% in 2019-20 against 62% nationally) and the fact that an incomplete primary level education provides only some functional literacy. Education - Quality of Education: It reflects region specific constraints such as: (a) non-availability of female teachers (important in conservative districts like Mohmand and Bajaur where male teachers are not allowed to teach female students); (b) school distance > 5 km (significant in a mountainous region); (c) expenses beyond government fee

waiver (d) lack of appropriate facilities (boundary walls, latrines, drinking water).

Health – Antenatal check-ups and assisted delivery: KP's MMR is 165 per 100,000 live births while SDG's target for the MMR is to reduce it to 70 maternal deaths per 100,000 live births by 2030. This rate is much higher in rural areas (199 per 100,000 live births). The proportion of deliveries taking place at home is 36% in KP (NIPS & ICF, 2022). The following are proxies of health system access.

Living Standards – Wall construction Material: Following Planning Commission (2016), "improved" wall construction material includes baked brick, concrete block, stone with mortar, or wood; "unimproved" includes mud, unburnt brick and bamboo. Overcrowding (threshold: >4 persons per room): This follows WHO housing standards and captures a binding constraint in KP where average household size is 7.2 (national 6.4) in poor districts (various issues of PSLM).

3.4. Identification of the Multidimensional Poor

A household and individuals within it are considered multidimensional poor if their weighted score is 1/3 or higher (cut-off score). The poverty cut-off "k" is set at 33.33 percent, which implies that a household should be deprived at least in one full dimension or a combination of other indicators (in all three dimensions) to be classified as multidimensional poor. This threshold and its robustness are widely used in national and global MPI measurement (Alkire et al., 2015; UNDP, 2023).

3.5. Aggregation: Headcount Ratio, Intensity, And Mpi

At the district level, multidimensional poverty is summarized using three key measures, namely, "Headcount Ratio (H)" shows the proportion of the households that are multidimensional poor, second "Intensity of Poverty (A)" shows the average share of deprivations experienced by poor households and Multidimensional Poverty Index (MPI) is defined as the product of headcount and intensity, $MPI=H \times A$

3.6. District-Level and Temporal Comparability

The MPI is estimated at the district level for Khyber Pakhtunkhwa across multiple survey rounds, ensuring consistent indicators, weights, and deprivation cut-offs over time. This methodology is helpful in spatial and temporal measurement and comparisons of multidimensional poverty. For estimation, population weights are used to make the results representative (Haque et al., 2021; UNDP, 2023).

3.7. Robustness Check: Alternative Poverty Cut-off (k = 1/4)

To strengthen the analytical depth of the study and to address concerns regarding threshold sensitivity, an additional robustness analysis of the districts was conducted and an alternative poverty cut-off ($k = ¼$) was also used. This alternative cut-off allows examining whether district rankings,

spatial disparities, and temporal trends are sensitive to different multidimensional poverty cut-offs.

The use of k = 1/4 classifies households deprived in at least 25 percent of weighted indicators, thereby expanding the identification of the multidimensionally poor. All indicators, weights, and aggregation procedures remained unchanged to ensure comparability with the baseline estimates.

4. DATA SOURCES AND UNIT OF ANALYSIS

This study is based on a secondary quantitative analysis of existing PSLM household survey datasets. No primary field data collection was conducted. The PSLM is a repeated cross-sectional household survey conducted by the Pakistan Bureau of Statistics for the years 2004–05, 2006-07, 2008-09, 2010-11, 2012-13, 2014-15 and 2019–20. The sampling frame uses a two-stage stratified design: primary sampling units (PSUs) are census blocks (urban) and villages (rural), selected with probability proportional to size; secondary sampling units are households selected via systematic random sampling within PSUs. These surveys provide extensive information on household socioeconomic characteristics, which are essential for the construction of the MPI (Jamal, 2016). PSLM data are widely regarded as reliable and have been extensively used in poverty and vulnerability research in Pakistan (Arif & Farooq, 2014; World Bank, 2018). The analysis is carried out at the household level and then results are aggregated at the district level.

5. DISTRICT-LEVEL MULTIDIMENSIONAL POVERTY IN KHYBER PAKHTUNKHWA

5.1. Overall Patterns of Multidimensional Poverty

District level Multidimensional Poverty Index (MPI) estimates show wide-ranging spatial heterogeneity in deprivation throughout Khyber Pakhtunkhwa (KP) during the study period 2004–05 to 2019–20. Although multidimensional poverty declined overall at the provincial level, poverty remains deeply rooted in specific districts, mainly those characterized by geographic remoteness, weak infrastructure and inadequate access to basic services. These findings support the argument that provincial-level MPI averages hide intra-provincial inequalities, thereby emphasizing the need for district-level poverty identification (Alkire et al., 2015; Jamal, 2016; World Bank, 2018). Detailed results are presented in Table 1 below.

	H	A	MPI	H	A	MPI	H	A	MPI	H	A	MPI	H	A	MPI	H	A	MPI	H	A	MPI
Abbottabad	0.563	0.482	0.271	0.329	0.474	0.156	0.407	0.450	0.183	0.327	0.490	0.160	0.193	0.472	0.091	0.227	0.433	0.098	0.299	0.452	0.135
Bajaur	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.864	0.565	0.488
Bannu	0.761	0.547	0.416	0.668	0.507	0.339	0.655	0.519	0.340	0.564	0.478	0.270	0.648	0.529	0.342	0.525	0.511	0.268	0.601	0.513	0.308
Battagram	0.900	0.592	0.533	0.833	0.536	0.446	0.631	0.519	0.328	0.505	0.495	0.250	0.632	0.542	0.343	0.711	0.573	0.407	0.516	0.509	0.263
Buner	0.945	0.656	0.621	0.828	0.577	0.477	0.727	0.553	0.402	0.654	0.530	0.346	0.567	0.541	0.307	0.632	0.524	0.331	0.771	0.516	0.398
Charsadda	0.793	0.596	0.472	0.649	0.523	0.340	0.607	0.523	0.317	0.546	0.484	0.264	0.401	0.488	0.195	0.408	0.480	0.196	0.510	0.462	0.236
Chitral	0.938	0.540	0.506	0.656	0.490	0.321	0.684	0.496	0.339	0.533	0.500	0.267	0.330	0.467	0.154	0.397	0.451	0.179	0.557	0.490	0.273
D.I. Khan	0.782	0.586	0.458	0.791	0.552	0.437	0.810	0.568	0.461	0.628	0.515	0.323	0.703	0.571	0.401	0.695	0.564	0.392	0.536	0.503	0.270
Dir Lower	0.869	0.572	0.497	0.679	0.575	0.390	0.734	0.533	0.391	0.593	0.520	0.308	0.616	0.482	0.297	0.472	0.496	0.234	0.634	0.521	0.330
Dir Upper	0.973	0.655	0.638	0.888	0.589	0.523	0.859	0.571	0.490	0.627	0.514	0.322	0.747	0.557	0.416	0.814	0.581	0.473	0.748	0.542	0.406
Hangu	0.721	0.554	0.400	0.683	0.531	0.363	0.599	0.524	0.314	0.715	0.529	0.378	0.521	0.486	0.253	0.374	0.473	0.177	0.751	0.498	0.374
Haripur	0.625	0.541	0.339	0.410	0.479	0.196	0.353	0.478	0.169	0.362	0.466	0.169	0.299	0.462	0.138	0.318	0.462	0.147	0.282	0.472	0.133
Karak	0.810	0.570	0.461	0.751	0.525	0.394	0.745	0.582	0.433	0.746	0.556	0.415	0.576	0.515	0.297	0.575	0.518	0.298	0.359	0.459	0.165
Khyber	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.484	0.479	0.231
Kohat	0.775	0.567	0.439	0.542	0.508	0.275	0.580	0.528	0.306	0.556	0.507	0.282	0.412	0.522	0.215	0.413	0.471	0.195	0.599	0.490	0.294
Kohistan	0.983	0.644	0.634	0.865	0.530	0.458	0.931	0.627	0.584	0.842	0.555	0.467	0.901	0.557	0.502	0.806	0.625	0.504	0.917	0.631	0.579
Kurram	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.615	0.540	0.332
Lakki Marwat	0.835	0.593	0.496	0.757	0.534	0.404	0.790	0.549	0.434	0.676	0.537	0.363	0.689	0.570	0.393	0.624	0.561	0.350	0.590	0.523	0.309
Malakand	0.847	0.596	0.505	0.667	0.529	0.353	0.610	0.483	0.295	0.356	0.467	0.166	0.388	0.501	0.194	0.348	0.482	0.168	0.432	0.455	0.196
Mansehra	0.716	0.531	0.380	0.615	0.514	0.316	0.605	0.521	0.315	0.478	0.533	0.255	0.427	0.508	0.217	0.391	0.489	0.191	0.424	0.494	0.210
Mardan	0.701	0.560	0.393	0.602	0.493	0.297	0.575	0.497	0.286	0.513	0.495	0.254	0.395	0.470	0.186	0.343	0.471	0.161	0.474	0.452	0.214
Mohmand	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.930	0.602	0.560

North Waziristan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.599	0.514	0.308
Nowshera	0.654	0.531	0.348	0.454	0.461	0.209	0.410	0.467	0.191	0.605	0.515	0.311	0.346	0.496	0.172	0.321	0.467	0.150	0.439	0.451	0.198
Orakzai	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.827	0.514	0.425
Peshawar	0.624	0.569	0.356	0.525	0.509	0.267	0.375	0.495	0.185	0.408	0.497	0.203	0.235	0.466	0.109	0.319	0.483	0.154	0.500	0.445	0.223
Shangla	0.941	0.683	0.642	0.829	0.572	0.474	0.778	0.565	0.440	0.781	0.573	0.448	0.710	0.600	0.427	0.699	0.560	0.391	0.834	0.538	0.448
South Waziristan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.712	0.523	0.372
Swabi	0.713	0.554	0.395	0.605	0.517	0.312	0.533	0.489	0.260	0.489	0.491	0.240	0.289	0.473	0.137	0.269	0.476	0.128	0.409	0.479	0.196
Swat	0.834	0.610	0.509	0.609	0.514	0.313	0.759	0.573	0.435	0.614	0.525	0.322	0.476	0.505	0.240	0.436	0.461	0.201	0.515	0.509	0.262
Tank	0.866	0.580	0.503	0.746	0.547	0.409	0.778	0.559	0.435	0.731	0.541	0.395	0.751	0.561	0.422	0.786	0.599	0.471	0.547	0.521	0.285
Torghar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.837	0.616	0.515	0.828	0.627	0.519	0.590	0.533	0.314

Source: Authors' calculations

5.2. Interpretation of District-Level MPI Figures (Spatial and Temporal Variation)

Kohistan, Shangla and Dir Upper are persistently highly deprived and their geographical location and structural disadvantages are linked to each other in a number of ways that explain the persistence of multidimensional poverty.

Barriers related to terrain make it more expensive and challenging to provide services. Poor topography, low population density and inadequate transport links increase the cost of service delivery (Government of Khyber Pakhtunkhwa, 2018). Second, conflict legacies and institutional fragility affected the districts that were affected by conflict and displacement in 2007 to 2009, including Shangla, Buner, Swat and other affected areas, which continued to suffer from high rates of deprivation due to the destruction of schools, health facilities, roads and administrative facilities (Avis, 2016). Third, the demographic pressure and the high dependency ratio lead to lower investment capacity of households. Districts with persistently high MPI generally exhibit larger household sizes and higher dependency burdens, which place pressure on household resources and reduce the ability to invest in education, healthcare and improved living conditions. The econometric findings of this study also support this relationship as dependency ratio is positively and significantly associated with MPI. These mechanisms help explain why multidimensional poverty remains persistently high in remote districts despite overall provincial improvement.

The data of 2019–20 highlight the deprivation in the newly merged districts as for the first time these districts were included in the data, where MPI values are at the highest level. Mohmand recorded an MPI of 0.560, Bajaur 0.488, Orakzai 0.425, and North Waziristan 0.308, all with high headcount ratios and high intensity levels. Inclusion of these districts in surveys suggests that spatial disadvantage has not reduced over time but has expanded geographically.

Overall the estimates indicate that multidimensional poverty has declined at the provincial level but district-level MPI values remain highly polarized. The results show that low-MPI districts generally recorded values below 0.20–0.25 whereas high-poverty districts frequently recorded MPI values between 0.40 and 0.50. These numerical gaps show that multidimensional poverty in Khyber Pakhtunkhwa is structural rather than transitional. It is evident that reductions in headcount are often not matched by a reduction in the intensity of deprivation.

5.3. Dimension-Wise Contribution to Multidimensional Poverty

This section examines the contribution of the three dimensions to the Multidimensional Poverty Index (MPI). The results highlight that the living standards dimension is the largest contributor to MPI in the majority of the districts of Khyber Pakhtunkhwa, followed by education, whereas the contribution of the health dimension is the smallest. Deprivation is dominant

in the living standards dimension which shows the widespread lack of improved housing quality, sanitation, energy access, overcrowding, and asset ownership, indicating that material conditions are central drivers of multidimensional poverty in KP (UNDP, 2010; Alkire et al., 2015; Jamal, 2016).

5.3.1. Education Deprivation: Structural and Intergenerational Constraints

The variables such as years of schooling, school attendance, and quality of education reflect both stock and flow dimensions of human capital deficiency. Districts like Dir Upper, Kohistan, Shangla, Bajaur, Hangu, Mohmand, North and South Waziristan show high education-related deprivation. These findings are consistent with previous studies showing that educational deprivation in Pakistan is strongly spatial and intergenerational in nature (Sen, 1999; Chaudhuri, 2003; World Bank, 2018).

5.3.2. Health Deprivation: Lower Contribution but Persistent Risks

The study suggests that compared to education and living standards, the contribution of the health dimension to MPI is comparatively lower. However, a lower contribution does not mean absence of vulnerability. In some districts such as Tank, Kohistan, Mohmand, deprivation in health cannot be ignored. Antenatal check-ups and childbirth assistance by trained health personnel remain important contributors, showing limited access to maternal health services. Child vaccination deprivation contributes less to the MPI (Health dimension), but remains relevant in districts with weak outreach and limited health services availability. The comparatively smaller contribution of health indicators suggests that basic health interventions have been more evenly addressed than education and infrastructure, though some disparities persist.

5.3.3. Living Standards: The Dominant Driver of MPI

The living standards dimension including improved water, sanitation, wall construction material, overcrowding, electricity, cooking fuel, and asset ownership is the single largest contributor to MPI across almost all districts of KP and survey rounds. High score of deprivation in this dimension is evident in highly deprived remote districts, where households face infrastructural deficits in multiple indicators. The living standards dimension dominates MPI largely due to multiple overlapping deprivations across its indicators. In these indicators, improved sanitation and safe drinking water are the main contributors in persistently deprived districts which show lack of basic public services and necessities. Similarly, overcrowding and poor wall construction material greatly affects districts welfare. Access to electricity and clean cooking fuel is also inadequate, which increases economic vulnerability and environmental and health issues. Lack of asset ownership is also widespread in low-income districts, showing low capacity to absorb shocks.

The results support the argument that poverty in KP is not only income-based but deeply rooted in insufficient physical infrastructure, which constrains well-being even when households are not income-poor (UNDP, 2010; Alkire & Santos, 2014; Hallegatte et al., 2016).

5.4. Temporal Evolution of Multidimensional Poverty in Khyber Pakhtunkhwa

The temporal Multidimensional Poverty Index (MPI) shows extensive and uneven progress in multidimensional poverty reduction throughout the districts of Khyber Pakhtunkhwa (KP) from 2004–05 to 2019–20. Overall, the province experienced a gradual decline in MPI levels, reflecting improvements in access to education, basic healthcare services, and living standards indicators. This trend of poverty reduction is a dynamic process shaped by economic growth, public investment, and demographic change (Alkire & Foster, 2011; Ravalli on, 2016).

Phase I: Slow Progress and Structural Constraints (2004–05 to 2008–09)

This period predates major social protection expansion. The Benazir Income Support Programme (BISP) was launched in 2008, toward the end of this phase. The lack of coordinated poverty reduction programs during this period explains the minimal MPI improvement. During the period of 2004–05 to 2008–09, MPI values were high in most of the districts, particularly in Shangla, Kohistan, Dir Upper, Lower Dir, Battagram, Swat, Chitral, Malakand, Tank and Buner. In contrast some urbanized districts such as Peshawar, Haripur, and Abbottabad were comparatively better.

Phase II: Accelerated Decline and Service Expansion (2010–11 to 2014–15)

Three major policy developments coincided with the observed reduction in multidimensional poverty during 2010–2015. First, the Benazir Income Support Programme (BISP) significantly expanded social protection coverage among low-income households, including in Khyber Pakhtunkhwa, with increasing emphasis on education and health-related conditional support mechanisms. Second, the provincial health protection initiative later institutionalized through the Sehat Sahulat Program, expanded access to secondary healthcare services for vulnerable households. Third, improvements in rural electrification and infrastructure connectivity increased household access to basic services in several districts. Although causal attribution cannot be established directly within this study, the temporal association suggests that these interventions may have contributed to improvements in MPI indicators during this period (BISP, 2015; Government of Khyber Pakhtunkhwa, 2016). The years from 2010–11 to 2014–15 are a notable period in MPI reduction across many KP districts. In this phase, the expansion of social protection programs, improvements in school enrollment, greater maternal and child health outreach, better electrification and

development in infrastructure occurred simultaneously. In this period, Swat, Chitral, Mansehra, and Malakand showed remarkable progress in MPI reduction. This is due to improvements in education indicators and selected health indicators.

Phase III: Stagnation and Partial Reversal (2019–20)

During this period, progress slowed in various districts. MPI reduction slowed or reversed despite continued BISP expansion. The COVID-19 pandemic and lockdowns and the merger of new districts (Ex-FATA) made a major contribution to this reversal. This pattern suggests MPI gains are vulnerable to climate and health shocks.

MPI values in various districts either nearly remained the same or slightly increased. The reversal in MPI values in some districts strongly supports the vulnerability literature which underlines the fact that households may escape poverty temporarily but there remains a substantial risk of falling back into poverty (Chaudhuri, 2003; Dercon, 2006).

5.5. Spatial Inequality and Temporal Evolution in Multidimensional Poverty

The temporal estimation results exhibit an overall decline in multidimensional poverty in Khyber Pakhtunkhwa (KP) for the period 2004–05 to 2019–20 but this overall development hides distinct spatial disparities. Multidimensional poverty in KP is uneven, showing persistent regional inequalities. District-wise categorization has been carried out in the study, and districts have been categorized over time on the basis of MPI levels, as tabulated below.

In the table the newly formed districts (formerly known as FATA) are also included in the 2019-20 survey year. The districts have been categorized on the basis of MPI value as very high (MPI $\geq$ 0.50), high (0.33 $\leq$ MPI $<$ 0.50), moderate (0.20 $\leq$ MPI $<$ 0.33) and low (MPI $<$ 0.20). The results show that in 2004-05, nine districts were placed in the very high category, fourteen districts were in the high category and only one district was placed in the moderate MPI category, whereas no district fell into the low MPI category. In the next survey year (2006-07) majority of the districts fell in the high MPI category, and 8 districts fell in the moderate MPI category whereas only two districts, namely, Abbottabad and Haripur fell into the low MPI category. Up to 2014-15 substantia progress was observed but in the last survey year (2019-20) a reversal was observed and only 6 districts are categorized as low MPI districts, whereas in 2014-15 the number in this category was double. A comparison of MPI values across districts in terms of highest and lowest values, shows that as per Government of Pakistan, Planning Commission, 2016 report, in Balochistan the highest MPI values was recorded as 0.641for Killa Abdullah, in Sindh province the highest value is 0.504 for District Umerkot. In Punjab province, the highest MPI value is 0.357 for District Rajanpur, and the highest MPI values in KP province is 0.571 for District Torghar (Planning Commission, 2016). However, according to our

calculations Torghar MPI value is 0.519 for survey year 2014-15. On the other hand the lowest values for the same period in different districts were 0.213 for Quetta (Balochistan), 0.019 for Karachi (Sindh), 0.017 for Lahore (Punjab) and 0.110 for Haripur (KP). However, as per our calculations it is 0.147 for Haripur (Planning commission, 2016), but according to our estimates the lowest MPI value is recorded for District Abbottabad in 2014-15, that is 0.098.

5.6 Synthesizing Drivers: A Conceptual Model of Persistent Multidimensional Poverty in KP

The patterns documented in Sections 5.2–5.5 reveal three empirical regularities that any explanatory model must account for:

(1) Spatial concentration of poverty in twelve districts that account for approximately 65% of the multidimensionally poor population (based on headcount ratios weighted by district population shares) despite representing 12 of 32 districts (37.5%). These 12 districts are: Kohistan, Mohmand, Bajaur, Shangla, Orakzai, Dir Upper, Buner, Hangu, South Waziristan, Kurram, Torghar, and Lakki Marwat.

(2) Temporal vulnerability to shocks, evidenced by MPI reversal in 17 districts after 2014-15, with MPI increasing from 2014-15 to 2019-20. These districts are: Abbottabad (0.098 → 0.135), Bannu (0.268 → 0.308), Buner (0.331 → 0.398), Charsadda (0.196 → 0.236), Chitral (0.179 → 0.273), Dir Lower (0.234 → 0.330), Hangu (0.177 → 0.374), Kohat (0.195 → 0.294), Kohistan (0.504 → 0.579), Malakand (0.168 → 0.196), Mansehra (0.191 → 0.210), Mardan (0.161 → 0.214), Nowshera (0.150 → 0.198), Peshawar (0.154 → 0.223), Shangla (0.391 → 0.448), Swabi (0.128 → 0.196), and Swat (0.201 → 0.262). This reversal suggests that poverty reduction gains are fragile and susceptible to economic, climatic and security shocks.

(3) Structural persistence despite overall provincial decline. Among the ten districts with the highest MPI in 2004-05 (Dir Upper, Shangla, Kohistan, Buner, Battagram, Chitral, Swat, Malakand, Tank, and Dir Lower), 7 remain among the 10 highest MPI districts in 2019-20 (Kohistan, Shangla, Dir Upper, Buner, Mohmand, Bajaur, and Orakzai with newly merged districts Mohmand, Bajaur, and Orakzai now included). This persistence indicates that multidimensional poverty in KP is deeply rooted in structural characteristics.

Table 2. Categorization of Districts by MPI Level

MPI Category	2004–05	2006–07	2008–09	2010–11	2012–13	2014–15	2019–20
Very High MPI	Shangla, Dir Upper, Kohistan, Buner, Battagram, Swat, Chitral, Malakand, Tank	Dir Upper	Kohistan	None	Torghar, Kohistan	Torghar, Kohistan	Kohistan, Mohmand
High MPI	Dir Lower, Lakki Marwat, Charsadda, Karak, D.I. Khan, Kohat, Bannu, Hangu, Swabi, Mardan, Mansehra, Peshawar, Nowshera, Haripur	Buner, Shangla, Kohistan, Battagram, D.I. Khan, Tank, Lakki Marwat, Karak, Dir Lower, Hangu, Malakand, Charsadda, Bannu	Dir Upper, D.I. Khan, Shangla, Swat, Tank, Lakki Marwat, Karak, Buner, Dir Lower, Bannu, Chitral	Kohistan, Shangla, Karak, Tank, Hangu, Lakki Marwat, Buner	Shangla, Tank, Dir Upper, D.I. Khan, Lakki Marwat, Battagram, Bannu	Dir Upper, Tank, Battagram, D.I. Khan, Shangla, Lakki Marwat, Buner	Bajaur, Shangla, Orakzai, Dir Upper, Buner, Hangu, South Waziristan, Kurram, Dir Lower
Moderate MPI	Abbottabad	Chitral, Mansehra, Swat, Swabi, Mardan, Kohat, Peshawar, Nowshera	Battagram, Charsadda, Mansehra, Hangu, Kohat, Malakand, Mardan, Swabi	D.I. Khan, Dir Upper, Swat, Nowshera, Dir Lower, Kohat, Bannu, Chitral, Charsadda, Mansehra, Mardan, Battagram, Swabi, Peshawar	Buner, Dir Lower, Karak, Hangu, Swat, Mansehra, Kohat	Karak, Bannu, Swat	Torghar, Lakki Marwat, Bannu, North Waziristan, Kohat, Tank, Chitral, D.I. Khan, Battagram, Swat, Charsadda, Khyber, Peshawar, Mardan, Mansehra
Low MPI	None	Haripur, Abbottabad	Nowshera, Peshawar, Abbottabad, Haripur	Haripur, Malakand, Abbottabad	Charsadda, Malakand, Mardan, Chitral, Haripur, Swabi, Peshawar, Abbottabad	Charsadda, Kohat, Mansehra, Chitral, Hangu, Malakand, Mardan, Peshawar, Nowshera, Haripur, Swabi, Abbottabad	Nowshera, Malakand, Swabi, Karak, Abbottabad, Haripur

6. ROLE OF GEOGRAPHY AND REMOTENESS

The geographical position of a district is also a key factor in shaping district-level MPI outcomes. It is evident from this study that mountainous terrain and geographic isolation substantially increase the cost and difficulty of service delivery, particularly in remote and newly merged districts. In these districts, the headcount ratios and deprivation intensity remained constantly high. These geographic limitations worsen deprivation in living standards indicators such as access to improved sanitation, clean cooking fuel, and electricity, thereby increasing overall MPI.

These results are consistent with global evidence stating that topography and remoteness are significant predictors of multidimensional poverty, particularly in low-income and fragile regions (Bird, Higgins, & Harris, 2010). In Pakistan, regional differences in public investment and service provision further expand topographical disadvantages (Jamal, 2016; World Bank, 2019).The spatial distribution of MPI in KP suggests the existence of policy-relevant poverty clusters, particularly in geographically remote and conflict-affected districts such as Upper Dir, Kohistan, Shangla, Bajaur, Hangu, Mohmand, and North and South Waziristan. These clusters highlight the limitations of uniform poverty reduction policies. Therefore the evidence supports spatially targeted interventions. International practice suggests that geographically targeted infrastructure investment and human capital programs are necessary and effective in reducing multidimensional poverty in such areas (Kanbur & Venables, 2005; World Bank, 2009).

The preceding analysis demonstrates that multidimensional poverty in KP exhibits strong spatial and temporal variation. However, the robustness and sensitivity of the MPI estimates must also be evaluated." Accordingly, the MPI was re-estimated using an alternative poverty cut-off (k = 1/4), with the results presented in Table 3.

District	2004-05 H	2004-05 A	2004-05 MPI	2006-07 H	2006-07 A	2006-07 MPI	2008-09 H	2008-09 A	2008-09 MPI	2010-11 H	2010-11 A	2010-11 MPI	2012-13 H	2012-13 A	2012-13 MPI	2014-15 H	2014-15 A	2014-15 MPI	2019-20 H	2019-20 A	2019-20 MPI
Abbottabad	0.793	0.424	0.336	0.559	0.372	0.208	0.671	0.385	0.258	0.548	0.407	0.223	0.447	0.364	0.163	0.485	0.355	0.172	0.553	0.376	0.208
Bajaur	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.980	0.532	0.521
Bannu	0.945	0.496	0.468	0.877	0.425	0.373	0.871	0.463	0.403	0.862	0.413	0.356	0.839	0.473	0.397	0.774	0.438	0.339	0.794	0.460	0.365
Batagram	0.977	0.568	0.554	0.938	0.488	0.457	0.819	0.467	0.383	0.692	0.437	0.303	0.847	0.477	0.404	0.878	0.519	0.455	0.795	0.432	0.344
Buner	0.995	0.638	0.635	0.937	0.500	0.469	0.915	0.500	0.457	0.864	0.469	0.405	0.796	0.466	0.371	0.855	0.461	0.395	0.911	0.481	0.438
Charsadda	0.927	0.552	0.512	0.794	0.463	0.367	0.826	0.459	0.379	0.789	0.425	0.335	0.641	0.412	0.264	0.632	0.411	0.260	0.700	0.414	0.290
Chitral	0.980	0.529	0.519	0.944	0.415	0.392	0.938	0.438	0.411	0.792	0.433	0.343	0.729	0.364	0.266	0.748	0.369	0.276	0.896	0.411	0.368
D.I.Khan	0.936	0.537	0.502	0.901	0.494	0.445	0.938	0.530	0.497	0.836	0.458	0.383	0.876	0.514	0.450	0.853	0.512	0.437	0.766	0.438	0.335
Hangu	0.920	0.496	0.456	0.854	0.446	0.381	0.861	0.451	0.389	0.883	0.483	0.427	0.776	0.420	0.326	0.625	0.397	0.248	0.888	0.465	0.413
Haripur	0.827	0.479	0.396	0.675	0.394	0.266	0.643	0.393	0.253	0.617	0.390	0.240	0.520	0.389	0.202	0.542	0.389	0.211	0.543	0.384	0.209
Karak	0.971	0.521	0.507	0.893	0.445	0.397	0.916	0.526	0.482	0.911	0.508	0.463	0.786	0.455	0.358	0.759	0.462	0.351	0.570	0.394	0.225
Khyber	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.798	0.403	0.321
Kohat	0.877	0.534	0.469	0.730	0.419	0.306	0.804	0.460	0.370	0.790	0.441	0.348	0.660	0.432	0.285	0.657	0.401	0.264	0.763	0.447	0.341
Kohistan	1.000	0.638	0.638	0.986	0.481	0.474	0.991	0.607	0.602	0.974	0.519	0.505	0.988	0.534	0.528	0.980	0.566	0.555	0.994	0.605	0.601
Kurram	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.836	0.472	0.395
Lakki Marwat	0.964	0.553	0.533	0.928	0.459	0.426	0.925	0.511	0.473	0.876	0.480	0.420	0.861	0.515	0.443	0.824	0.495	0.408	0.783	0.463	0.363
Lower Dir	0.961	0.546	0.524	0.831	0.500	0.415	0.969	0.470	0.456	0.858	0.448	0.384	0.798	0.437	0.349	0.738	0.420	0.310	0.849	0.461	0.392
Malakand	0.951	0.562	0.535	0.831	0.467	0.388	0.864	0.425	0.367	0.605	0.392	0.237	0.608	0.423	0.258	0.639	0.390	0.249	0.698	0.391	0.272
Mansehra	0.896	0.483	0.433	0.810	0.443	0.359	0.822	0.459	0.377	0.728	0.447	0.326	0.709	0.420	0.298	0.647	0.407	0.263	0.680	0.415	0.282
Mardan	0.881	0.504	0.444	0.790	0.429	0.339	0.823	0.433	0.357	0.733	0.433	0.318	0.620	0.402	0.249	0.600	0.389	0.233	0.704	0.398	0.280
Mohmand	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.981	0.585	0.574
North Waziristan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.87	0.44	0.386
Nowshera	0.859	0.473	0.406	0.661	0.401	0.265	0.639	0.401	0.256	0.864	0.445	0.385	0.520	0.425	0.221	0.487	0.405	0.197	0.642	0.400	0.257
Orakzai	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.979	0.478	0.468
Peshawar	0.771	0.515	0.397	0.722	0.426	0.308	0.567	0.424	0.240	0.680	0.412	0.280	0.412	0.387	0.159	0.442	0.427	0.189	0.634	0.411	0.261
Shangla	0.991	0.663	0.657	0.957	0.504	0.482	0.915	0.524	0.480	0.922	0.530	0.488	0.907	0.533	0.483	0.889	0.500	0.445	0.964	0.503	0.485
South Waziristan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.903	0.473	0.427
Swabi	0.916	0.494	0.453	0.830	0.433	0.359	0.791	0.422	0.333	0.768	0.415	0.319	0.570	0.379	0.216	0.479	0.391	0.187	0.643	0.409	0.263
Swat	0.947	0.572	0.542	0.819	0.430	0.352	0.906	0.529	0.479	0.825	0.465	0.383	0.757	0.423	0.320	0.695	0.394	0.274	0.776	0.433	0.336
Tank	0.956	0.554	0.529	0.925	0.475	0.439	0.951	0.509	0.484	0.916	0.490	0.449	0.921	0.511	0.470	0.915	0.554	0.508	0.825	0.437	0.360
Torghar	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.971	0.571	0.554	0.968	0.577	0.559	0.854	0.458	0.391
Dir Upper	0.995	0.647	0.644	0.974	0.531	0.518	0.984	0.533	0.525	0.858	0.452	0.387	0.927	0.504	0.467	0.956	0.537	0.514	0.926	0.493	0.456

7. SENSITIVITY ANALYSIS: COMPARISON OF K = 1/3 AND K =1/4 (ROBUSTNESS CHECK: ALTERNATIVE CUT-OFF (K = 1/4))

To test whether district rankings are sensitive to the poverty cut-off, we re-estimated MPI using an alternative threshold of k = 1/4 (households deprived in 25% of weighted indicators). The MPI results under the alternative cut-off (k = 1/4) show higher values across districts, as expected due to the lower threshold. The relative ranking of districts remains stable. Districts like Kohistan, Shangla, Dir Upper, and many of the newly merged districts continue to record the highest MPI values under both cut-off values. However, the absolute classification of districts changes in two ways. First the number of districts classified as "very high MPI" (using the categorization in Table 2) increases from 2 to 9 when moving from k = 1/3 to k = 1/4. Second, districts with MPI values just below the k = 1/3 threshold (0.30–0.33) become classified as multidimensionally poor under k = 1/4. In KP, this includes Swabi (MPI 0.196 at k = 1/3, 0.263 at k = 1/4), Nowshera (0.198 → 0.257), and Mardan (0.214 → 0.280). This consistency in the ranking of districts based on MPI suggests that spatial poverty patterns in Khyber Pakhtunkhwa are persistent. Although absolute poverty levels change under different cut-offs, the overall spatial distribution and deprivation clustering remain robust. This alternative check strengthens the reliability of the empirical findings of this study and confirms that district-level disparities are not driven by methodological choices.

7.1 Robustness Assessment: Correlation Analysis and Theoretical Consistency

Table 4. Pairwise Correlation Matrix

Variables	MPI	Dependency Ratio	Road (km² per km)	Casual Workers (%)
MPI	1.000			
Dependency Ratio	0.726***	1.000		
Road (km² per km)	0.455***	0.454***	1.000	
Casual Workers (%)	0.234***	0.179**	0.124	1.000

Source: Authors' calculations

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

In order to better determine the strength of the empirical findings, a pairwise correlation analysis was conducted between the Multidimensional Poverty Index (MPI) and the main explanatory variables, shown in Table 4.

The results indicate that there are positive and statistically significant correlations between MPI and dependency ratio ($r = 0.726$, $p < 0.01$), road infrastructure variable ($r = 0.455$, $p < 0.01$), and households in casual labour ($r = 0.234$, $p < 0.01$). The findings are similar to those of the fixed-effects regression estimates, which also find that the relationships are theoretically valid and empirically valid. Furthermore, the results obtained with different poverty thresholds ($k = 1/3$ and $1/4$) further increase the robustness of the results of this study.

8. ANALYZE AND INTERPRET THE ECONOMETRIC RESULTS.

The description of the different dimensions of spatial disparities in Section 5 does not provide any insight into the structural causes of these disparities. This section attempts to supplement descriptive analysis by estimating a panel model with fixed-effects at the district level to explore how multidimensional poverty is related to three theoretically motivated factors: demographic dependency, road infrastructure, and labor market vulnerability. With this method, temporal differences among districts are captured, while district-specific differences over time are taken into account with district-specific variables such as geography, historical development paths, institutional capacity and socio-cultural structures that are possible because they are static. Year fixed effects further account for common macroeconomic or policy shocks affecting all districts, including national economic and climatic shocks.

$$MPI_{dt} = \alpha + \beta 1 Dep_{dt} + \beta 2 Road_{dt} + \beta 3 Casual_{dt} + \mu d + \lambda t + \epsilon_{dt}$$

Where MPI_{dt} represents the Multidimensional Poverty Index for district "d" at time "t", Dep_{dt} represents the dependency ratio; $Road_{dt}$ indicates road infrastructure (km² per km of road) and $Casual_{dt}$ denotes the percentage of households engaged in casual labor. α is the constant term, β_1,β_2,β_3 are the estimated coefficients, "μd" captures district fixed effects, "λt" shows year fixed effects, and ϵ_{dt} is the error term.

The results of the fixed effects model are presented below.

Table 5. Determinants of District-Level Multidimensional Poverty (Fixed-Effects Estimates)

Variables	MPI
Dependency ratio	0.0012539*** (0.0004195)
Km² per km of road	0.0074021*** (0.0024983)
Households with casual workers (%)	0.0024629*** (0.0002982)
Year fixed effects	Yes
District fixed effects	Yes

Observations	178
Number of districts	32
Within R^2	0.7639
Between R^2	0.3137
Overall R^2	0.5930
F-statistic	62.73
Prob > F	0.0000
ρ (fraction of variance due to district effects)	0.7824

Source: Authors' calculations

Notes: Cluster-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Base year = 2004–05.

Table 5 presents the district-level fixed-effects regression results for the determinants of multidimensional poverty (MPI) across the districts over time. The model controls both district fixed effects and year fixed effects. This means that the estimates capture changes within each district over time accounting for unobserved, time-invariant district characteristics and common year specific shocks. The use of district level cluster robust standard errors further strengthens the reliability of the estimations by addressing heteroskedasticity and serial correlation in districts.

The coefficient of the dependency ratio is positive and statistically significant at the 1 percent level ($\beta = 0.0012539$, $p = 0.005$). This shows that districts with higher dependency burden tend to record higher multidimensional poverty. As dependency ratio increases, the economic pressure on households also rises, thereby limiting expenditure on education, health, and living standards. A high dependency ratio consequently worsens multidimensional deprivation by lowering the capability of productive household members to support non-working members. The coefficient for km^2 per km of road (road density) is also positive and statistically significant at the 1 percent level ($\beta = 0.0074021$, $p = 0.006$). This variable indicates that the land area served or connected by each kilometer of road, and a higher value suggests lower road density and hence poorer road and transport connectivity. The positive sign shows that, districts with weaker road infrastructure face higher multidimensional poverty. This is essentially important as poor road access restricts mobility, reduces access to schools, health facilities, markets, and employment opportunities, and therefore raises costs for households and firms. The households with casual workers have the most statistically robust coefficient in this model ($\beta = 0.0024629$, $p < 0.001$). This indicates that districts with a greater prevalence of casual labor tend to

show significantly higher MPI. Casual employment is usually linked with low wages, insecurity, lack of social protection, and unstable income. Such labor market conditions directly undermine household welfare and make it more difficult for families to invest in health, education, housing, and basic welfare conditions.

The explanatory power of the model is high. The value of R^2 (0.7639) indicates that around 76.4 percent of the variation in multidimensional poverty within districts over time is explained by the variables included in the model and the time effects. The joint significance of the model is also confirmed by an F-statistic of 62.73 with a p value (0.0000), indicating that the regressors together are highly significant. The reported rho value (ρ = 0.7824) is very important. It indicates that about 78.2 percent of the total variance in MPI is attributable to district-specific effects, whereas only around 21.8 percent is due to idiosyncratic within-district variation. This shows that persistent structural differences across districts, such as geography, historical disadvantage, institutional weakness, infrastructure differences and socioeconomic conditions play a leading role in shaping multidimensional poverty. Therefore, this result strongly justifies the use of a fixed-effects framework. Overall Table 5 provides strong evidence that at the district level demographic pressure, infrastructure weakness and labor market vulnerability are important and statistically significant determinants of multidimensional poverty. The findings suggest that policies aimed at reducing dependency burdens, expanding road connectivity and providing permanent employment opportunities could substantially contribute to poverty reduction across districts.

Table 6. Year Effects in District-Level Multidimensional Poverty (Base Year: 2004–05)

Year	Coefficient	Std. Error	t-value	P>|t|	95% Confidence Interval
2006–07	-0.0673858***	0.0149135	-4.52	0.000	[-0.097802 -0.0369695]
2008–09	-0.1083356***	0.0185387	-5.84	0.000	[-0.1461456 -0.0705256]
2010–11	-0.1595690***	0.0221738	-7.20	0.000	[-0.2047927 -0.1143453]
2012–13	-0.1561591***	0.0190273	-8.21	0.000	[-0.1949655 -0.1173526]
2014–15	-0.1664401***	0.0212759	-7.82	0.000	[-0.2098327 -0.1230476]
2019–20	-0.1489544***	0.0234736	-6.35	0.000	[-0.1968292-0.1010796]

Source: Authors' calculations

Table 6 shows the estimated year effects in the fixed-effects model, setting 2004–05 as the reference year. All year coefficients are negative and

statistically significant which shows that district-level multidimensional poverty is lower in each subsequent survey round relative to the base year.

The regression results explain the descriptive patterns from Section 5 in the following ways.

The reversal in MPI after 2014-15 (documented in Section 5.5) is not explained by the structural variables, which change slowly. The year fixed effects (Table 6) capture this reversal, with the 2019-20 coefficient (-0.149) being smaller in magnitude than the 2014-15 coefficient (-0.166). This suggests that external shocks such as drought and COVID-19 eroded earlier gains. The high rho value ($\rho = 0.782$) in Table 5 indicates that 78% of MPI variance is attributable to district-specific effects. This confirms the descriptive finding (Section 5.2) that spatial inequality is structural, not transitory. The coefficient for 2006–07 survey year is -0.0674, indicating that MPI declined significantly compared to 2004–05. The reduction in MPI deepens further in the 2008–09 survey year (-0.1083), signifying that multidimensional poverty continued to decline. The largest decline was observed in the year 2014–15 (-0.1664), followed by 2010–11 and 2012–13 which show that the most considerable improvements in district-level welfare mainly occurred in the middle phase of the survey periods.

Although MPI remained substantially lower than the base year, the smaller magnitude of the 2019–20 coefficients suggests partial reversal or slowing progress. It is somewhat smaller in magnitude than that of 2014–15. This suggests that multidimensional poverty in 2019–20 is still much lower than in 2004–05. Overall multidimensional poverty declined significantly throughout the study period. The yearly negative effects at the district level capture the combined influence of wider economic and social changes, including improvements in public services, infrastructure development, welfare interventions, educational progress, poverty targeted programs, and structural changes throughout the province.

9. DISCUSSION

This study provides a comprehensive district-level analysis of multidimensional poverty in Khyber Pakhtunkhwa (KP) for the period 2004–05 to 2019–20, by combining education, health and living standards into a unified Multidimensional Poverty Index (MPI), while also highlighting the important role of the geographical position of districts . The findings contribute to the literature highlighting that poverty is a multifaceted and spatially driven phenomenon.

9.1. Uneven Progress across Dimensions

An important finding of the study is the unequal contribution of different dimensions to MPI across the districts and over time. Improvements in education, mainly in school attendance have contributed to MPI reductions in many districts. However, health indicators (vaccination, antenatal care, assisted delivery) and living standards indicators have shown slower and more

uneven contributions. In KP, limited access to health and living-standard facilities continues to exert unequal influence on MPI in remote districts. Taken together, the results of the econometric model show that multidimensional poverty rises with a higher dependency ratio, weaker road connectivity and a greater percentage of casual labor in a district. Second, the year effects indicate that multidimensional poverty declined over time relative to 2004–05, showing overall progress in living standards throughout the province. Third, despite the temporal improvement, the study reveals deep and persistent spatial inequalities among the districts.

Practically, the results advocate that poverty in Khyber Pakhtunkhwa is dual in nature, namely, dynamic and structural. It is dynamic as it changes over time with evolving socioeconomic conditions. It is structural in nature as a large portion of poverty disparities is tied to entrenched district-level characteristics. This dual nature of poverty suggests that effective policy must combine broad-based development measures with district-specific targeted interventions.

10. COMPARISON WITH NATIONAL AND INTERNATIONAL MPI STUDIES

The MPI estimates calculated at a district-level can be compared with the national and international multidimensional poverty estimates.

Comparisons with Planning Commission of Pakistan (2016): The official Multidimensional Poverty Report of Pakistan estimated Khyber Pakhtunkhwa provincial MPI at around 0.247 in 2014-15 (Planning Commission of Pakistan & UNDP, 2016). The estimate found in this study is slightly less. Minor differences may result from variations in the specification of the indicators, the weighting used, the treatment of the indicators relating to education quality, and the aggregation method used for the sample. However, the general level and provincial positioning are generally similar to the official national level estimates.

Comparison across Pakistani provinces: Multidimensional poverty in Khyber Pakhtunkhwa remained significantly higher than that of Punjab but lower than Balochistan during the same period and the same was also true for rural Sindh which showed a relatively high level of poverty (Planning Commission of Pakistan & UNDP, 2016). These comparisons corroborate the main finding that KP lies somewhere between the two poles of the multidimensional poverty framework in Pakistan, but not equally.

International MPI estimates (UNDP & OPHI, 2023): Multidimensional poverty is strongly associated with areas where services are not readily available, human capital is low, and infrastructure is weak. The inequalities were large between districts in Khyber Pakhtunkhwa, from the relatively low MPI districts like Haripur to the most deprived districts like Kohistan, indicating subnational inequality within the province. The results confirm the international body of literature which continues to stress the spatial dimension

of multidimensional poverty and the significant spatial inequalities that exist within countries.

This study's results clearly point to the importance of a need based development strategy. The districts, such as Mohmand, Bajaur, Torghar, Shangla, Orakzai etc. need targeted interventions, employment, and increased institutional investment. Likewise, the high importance of dependency ratios and casual employment in the MPI indicates that interventions in education, skills development, labour formalisation and social protection are also key for the significant impact on reducing the multidimensional poverty across the province.

10.1. Extending, Confirming, and Challenging Existing Literature

The inclusion of these districts reveals that MPI in Bajaur (0.488), Mohmand (0.560), and Orakzai (0.425) exceed the 2004-05 provincial average (0.258). Excluding these districts underestimates KP's poverty by approximately 15-20% in 2019-20.

Confirming existing literature: Our finding that dependency ratio strongly predicts MPI ($\beta = 0.00125$, $p < 0.01$) confirms Carter & Barrett's (2006) poverty traps framework for the KP context. Households with higher dependency burdens face binding constraints on human capital investment, extending the asset-based poverty traps literature to multidimensional measurement.

Challenging existing literature: Contrary to Hallegatte et al. (2016)'s suggestion that health shocks are the primary poverty driver in fragile regions, our decomposition shows health contributes least to MPI in all KP districts (average contribution 18% vs. 42% for living standards and 40% for education). This does not mean that health is unimportant but health deprivation is more evenly distributed across districts than education and living standards, making health a less discriminating factor in explaining spatial inequality.

11. CONCLUSION

This study offers a wide-ranging and dynamic assessment of multidimensional poverty in Khyber Pakhtunkhwa (KP) by combining education, health and living standards into a unified Multidimensional Poverty Index (MPI) over the period 2004-05 to 2019-20. Equal weights are assigned to all dimensions, and the weights are also distributed uniformly among different indicators within each dimension.

The findings yield three important implications. First, KP is not a homogeneous place and multidimensional poverty is structurally persistent. Although the overall time trend of MPI is declining most of the districts with very high MPI values are those that are facing severe deprivation, such as mainly Dir Upper, Kohistan and Shangla, Bajaur, Hangu, Mohmand, North Waziristan and South Waziristan, which cannot be adequately reflected in income-based poverty measures. This validates previous research that argues

poverty is multidimensional in mountainous areas, chronic and less sensitive to short- term economic improvements (Chambers,1989; Kanbur & Venables,2005).

Secondly, the analysis of district-level indicators confirms that profiles of deprivation vary geographically. But some districts have education-related deprivations that dominate. Other districts have a more important impact on health and living standards indicators. The diversity in this heterogeneity is the analytical strength of MPI over 1D approaches (Alkire et al., 2015; Ligon & Schechter, 2003).

Thirdly, the temporal dynamics of MPI suggest vulnerability to shocks and uneven resiliency. Progress in several districts did not accelerate or even maintain its gains in the early 2010s, although a few made remarkable gains.

12. POLICY IMPLICATIONS AND RECOMMENDATIONS

The patterns of multidimensional poverty revealed in this study have important policy, planning and resource allocation implications. Evidence indicates that a one-size fits all approach to poverty reduction is not enough because poverty varies across time and space, both in terms of type and the magnitude of poverty.

12.1. Transitions from income to multidimensional policy frameworks.

Overall, the findings from these analyses are robust in favour of using multidimensional poverty diagnostics as a main policy tool. The results of this analysis also corroborate the global policy recommendations for using MPI-based targeting to enhance policy accuracy and effectiveness (Alkire et al., 2015; UNDP, 2020). However, adding district-level MPI indicators to the provincial development policies would help the provincial policy makers decide on which indicators are important and where to act upon when intervening.

12.2. District-Specific and Place-Based Interventions

The high concentration of multidimensional poverty in the districts of Dir Upper, Kohistan and Shangla, Bajaur, Hangu, Mohmand, North Waziristan and South Waziristan shows the need for place-based development policies. These districts face multiple disadvantages arising from remoteness, difficult terrain, limited market access and weak service delivery. International best practices suggest that spatially targeted interventions are required in such situations (Barca et al., 2012; Kanbur & Venables, 2005). For KP this implies prioritizing lagging districts for infrastructure development, human capital investments and service delivery reforms, rather than distributing resources uniformly across districts.

12.3. Education Policies: Beyond Access to Quality

As improvements in school attendance have greatly contributed to MPI reductions, quality of education and years of schooling remain serious bottlenecks in high-poverty districts. Therefore, policies should not only focus on enrollment but also on improving teacher quality and school infrastructure, especially for girls and rural populations. In developing regions gains in educational quality have stronger, more positive and long-term poverty-reducing effects compared to school access alone (Hanushek & Woessmann, 2008; Psacharopoulos & Patrinos, 2018). Scholarships, conditional cash transfers to grade completion, and district level education reforms could significantly reduce educational deprivation in KP.

12.4. Strengthening Preventive and Maternal Health Systems

Health indicators, namely, child vaccination, antenatal care, and childbirth assistance by trained helper effectively contribute to MPI. These findings highlight the need to strengthen healthcare systems and provide basic health facilities, especially maternal and child health services. This can be achieved through improving accessibility, and reducing financial and cultural constraints. Several studies are available which validate that investment in preventive health services produces high social returns and help reduce poverty in long run (Victora et al., 2010; World Bank, 2018).

12.5. Improving Living Standards through Infrastructure and Basic Services

Indicators of this dimension, namely, sanitation, clean water, electricity, housing quality, cooking fuel, and asset ownership appear as a dominant contributor to MPI in various districts. The results suggest that provision of basic infrastructure plays a key role in poverty reduction. Clean sanitation, energy, and good housing not only help in reducing deprivation, but also provide multiple opportunities for health and education improvement (Gertler et al., 2015; Duflo et al., 2008). Therefore, investments in rural electrification, clean cooking fuel, and improved sanitation infrastructure are necessary.

12.6. Evidence-Based Targeting Based on Econometric Findings

The findings of the econometric model provide further policy guidance beyond descriptive MPI analysis. Given the strong relationship between dependency ratios and MPI, social protection programs should be prioritized in districts with higher demographic burdens and dependency ratio. Investments in road infrastructure and connectivity are very necessary in mountainous and remote districts, and they will help to reduce structural deprivation.

Additionally, livelihood diversification policies must move beyond survival-based income expansion toward productivity enhancing strategies which include skills development and market integration.

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Evaluating the Effectiveness of Government Policies in Controlling Crime: A Data-Driven Analysis of Pakistan (2010-2020)

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Abstract

This study analyzes the effectiveness of government policies in controlling crimes in Pakistan. The study uses official data from the Ministry of Interior and the National Police Bureau to establish trends from the past eleven years, from 2010 to 2020, concerning crimes such as murder, robbery, car theft, kidnapping, or other crime categories. During these years, around 7.58 million crimes have been recorded, out of which robbery comprises the largest number, followed by motor vehicle theft and other crimes. Other significant types of crime that were reported included attempted murder, kidnapping or abduction, burglary, and cattle theft. However, murder and dacoity are less reported in comparison with other crimes. While the gradual decrease in the number of murders, attempted murders, and burglaries shows that enforcement policies worked, at the same time, the increase in the total number of crimes reported, especially kidnapping and some other serious crimes, shows the weaknesses of public policies. The authors of this article stress the necessity and significance of using evidence-based deterrent measures in conjunction with social reforms to devise and apply effective and all-inclusive state policies. They also suggest several recommendations developed in response to the changes in crime.

Keywords: Crime Control Policies, Crime Statistics, Community Policing, Crime Trends
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1. INTRODUCTION

Any criminal behavior is a serious violation of the principle. Crime prevention involves several approaches aimed at minimizing the rate of crime and reducing its negative impacts on persons and society, especially concerning violent acts and insecurity issues. Fighting against crime demands a close look at the socio-economic and psychological bases of criminality. In this connection, the criminal justice system (CJS) is the main body that intervenes in the process of solving the social problems caused by illegal behavior. The task of the CJS is to protect human rights and ensure the safety of the whole society. To achieve this, the CJS must observe the activities of law enforcement, prosecution, and the court during criminal proceedings. The scope of the CJS covers the problems of access to justice, legal representation, and prison reform.

The function of the Criminal Justice System consists of a network of government institutions that deal with the investigation, prosecution, and adjudication of criminal acts. The simplest structure of the CJS consists of law

enforcement, the judiciary, forensic science, and penal institutions (Siegel, 2017). Nonetheless, the rule of law still poses a significant challenge in Pakistan. According to the World Justice Project, Pakistan ranks 130 out of 139 states worldwide, where Afghanistan is ranked last in the region. It ranks fourth out of the six South Asian countries in terms of the criminal and civil justice systems (Abbasi, 2021; Ahmad, 2021). Internationally, community policing has emerged as a powerful strategy for improving the safety of different communities, enhancing police-community relations, and preventing crime. In Sindh province, Pakistan, this approach is especially relevant because of the complexity of social issues in Sindh and urban issues (Wassan et al., 2023). Despite the above-mentioned aspirations, agencies of law enforcement in the Sindh region continue to experience severe problems with their operation. The efficacy of such agencies is always dependent on the institutional capacity, the community outreach, and the level of resources, which are allocated for the above purposes.

Among the biggest issues of governance in Pakistan, one can mention corruption, lack of accountability, bureaucratic conflict, a constitutional crisis, and people suffering from law and order problems; all these issues concern the police as well. Therefore, the state of stability in politics, mostly driven by self-serving goals, has a strong negative impact on both economic and institutional development. The law enforcement system of Pakistan, which is a continuation of the famous Police Act of 1861, is considered outdated (Rashid et al., 2021).

The increase in the level of crime in Pakistan shows that the police are not able to fulfill their functions of enforcing laws, preventing violence, and fighting against extremism. The government allocated massive funding for law enforcement authorities in response to the crisis. Community-oriented policing has significant potential as a solution and a modern way to accomplish goals related to increasing public safety and creating new workplaces (Mangi et al., 2024). Crime trends in Pakistan over the last decade raise serious questions regarding the efficiency of law enforcement approaches. The Pakistan government adopted several landmark reforms designed to cope with crime and increase safety between 2000 and 2020.

Notable initiatives include the implementation of Police Order 2002, which superseded the Police Act of 1861 and gave birth to new oversight mechanisms aiming at improving the accountability of the police system. Khyber Pakhtunkhwa Police Reforms set up a modern policing model with a new police force that is independent of politicians and based on technological and scientific advancements. Likewise, the Punjab Safe Cities Authority project implemented in the period from 2017 to 2020 has employed surveillance and e-ticketing practices to increase law enforcement effectiveness and prevent urban crimes. In addition, Islamabad Police Model proposed reforms intended to improve the police system in respect to efficiency and public service delivery (Government of Pakistan, 2002; International Crisis Group, 2010; Government of Khyber Pakhtunkhwa, 2017; Punjab Safe Cities Authority, 2020). The Ministry of Interior of the

Government of Pakistan states that crime rates changed from 642,762 in 2010 to 876,430 in 2020, which indicates that criminal policies had some effects, but they were not effective enough, as the crime rates did not fall and some offences even increased. This conclusion corresponds to the idea that effective crime control requires a combination of forceful law enforcement measures with social and economic initiatives. The present research investigates the effectiveness of crime control policy in Pakistan using nationwide crime statistics from 2010 to 2020. Although statistics on crimes are available for anyone, only a small number of studies check whether the particular policies have led to any changes in crime rates over time.

2. LITERATURE REVIEW

Several police professionals and researchers have offered insights into various dimensions of reform. A former Inspector General of Police provides a historical overview of police reform initiatives in the Indian subcontinent, identifying persistent institutional and structural challenges that hinder progress. Other scholars offer comparative and legal perspectives on provincial police structures (Suddle, 2010).

In addition to local perspectives, international theories and models offer valuable conceptual tools for understanding crime and reform. Becker (1968) applies economic theory to criminal behavior, introducing a rational choice framework in which individuals assess the benefits and costs of illegal activity before acting. This marked a paradigm shift from traditional sociological and psychological explanations of crime toward a more calculative, utility-based model.

Expanding on sociological frameworks, Sampson et al. (1997) introduce the concept of collective efficacy, defined as the shared belief in a community's capacity to maintain order and achieve collective goals. Their empirical research highlights its critical role in mitigating violent crime, particularly in urban neighborhoods characterized by socioeconomic disadvantage.

From a policing strategy perspective, Braga et al. (2014) evaluate the effectiveness of hot spots policing, which concentrates law enforcement resources in high-crime areas. Their systematic review and meta-analysis demonstrate that such targeted interventions significantly reduce crime without merely displacing it to nearby areas.

Lastly, Cullen and Gendreau (2000) revisit the effectiveness of correctional rehabilitation programs. Challenging the pessimism of the "nothing works" era of the 1970s, they argue that well-designed, evidence-based rehabilitation initiatives can substantially lower recidivism rates and contribute to sustainable public safety outcomes.

In a comprehensive examination of the history, challenges, and reform attempts in Pakistan's policy system, Suddle (2010) argues that the Pakistan police force is in urgent need of structural and functional reform to meet modern-day law enforcement needs and uphold the rule of law. Without

comprehensive, depoliticised reform, the police will continue to fail to deliver justice and security to the people.

Through this study, the authors aim to provide a complete overview of the policies the Government of Pakistan has adopted to incorporate sustainability into crime control. To reach this goal, the researchers formulated the following questions and hypotheses:

Q1. Have crime rates in Pakistan increased or decreased over the study period from 2010 to 2020?
Q2. How effective have government crime control policies been at reducing crime rates in Pakistan?

3. METHODOLOGY

To assess the success of crime control strategies of the Pakistan government, this research uses a quantitative longitudinal design spanning a period of eleven years (2010-2020). It looks at the different major crime types, such as homicide, robbery, hijacking/abduction, armed robbery, burglary, car theft, and other types of crime.

3.1 Data Source

The crime statistics were determined from government records published by the Ministry of Interior and the National Police Bureau (Islamabad). The data includes yearly figures on occurrences of crimes across the country, allowing for consistency and reliability in a longitudinal analysis. The study is based on an overview of the whole country and its aggregate data for every year from 2010 to 2020 (Ministry of Interior & National Police Bureau, 2020).

3.2 Data Analysis

In this study, ten distinct crime categories were selected according to their significance, frequency in society, and data availability on those crime categories. The crime categories selected for study in this research include murder, robbery, kidnapping/abduction, decoity, burglary, vehicular theft, and miscellaneous theft-related offenses. In terms of methodology and research design, descriptive statistics and regression analysis were used to analyze crime trends. Based on the data collected, trend lines and regression graphs were created for each crime category to determine any impacts of the introduced crime-control measures on the number of crimes from selected categories during the research period.

4. RESULTS AND DISCUSSION

Table 1: Yearly Reported Crime Statistics in Pakistan (2010–2020)

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Σ
All reported crimes	642762	673750	645647	634404	627116	633600	677554	683925	703481	786339	876430	7585008
Murder	13190	13860	13846	13937	13276	9486	8516	8235	8241	8153	8490	119230
Attempted Murder	15533	15496	15338	14648	14499	11336	10279	9499	10067	10438	11797	138930
Kidnapping	18181	19523	20194	19472	18700	17922	18057	18363	20060	20256	19658	210386
Dacoity	4586	5015	4257	4053	3516	2329	1636	1280	1414	1382	1320	30788
Robbery	18098	20521	17081	17363	18107	15164	13088	12458	14914	18239	19904	184937
Burglary	16784	18073	17638	17053	17153	15878	14572	13833	14646	16124	16474	178228
Cattle theft	8846	9345	9046	7743	7459	6502	6068	5342	6233	7793	8649	83026
Motor Vehicle Theft	35259	40103	34663	-	-	-	23813	22778	29163	37105	46372	269256
Other theft	40397	42223	40102	37751	35288	32400	34320	37304	39418	55836	57988	453027
Miscellaneous	471888	489591	473482	502384	499118	522583	547205	554833	559325	611013	685778	5917200

Source: - Ministry of Interior, National Police Bureau, Islamabad

The information listed in Table 1 refers to the data from the Ministry of Interior and the National Police Bureau, which covered the records of crime for eleven years from 2010 to 2020. The data provided covered many types of crimes such as murder, robbery, kidnapping, theft, and so on. It has been shown that there has been an increase in the number of crimes over the past ten years. Thus, the number of reported crimes has increased from 642,762 in 2010 to 876,430 in 2020 (36% increase). It can be observed that there was a gradual increase until 2015, followed by an annual increase peaking in 2020. There was a slight decrease in the number of murders reported from 13,190 in 2010 to 8,490 murders reported in 2020 (35.6% decrease). The number of attempted murders also decreased from 15,533 reported in 2010 to 11,797 in 2020 (24.05% decrease). The number of reported robberies has increased. It was 18,098 in 2010 and increased to 19,904 in 2020 (9.98% increase). Dacoity has decreased from 4586 in 2010 to 1320 stolen properties in 2020 (71.22% decrease). In general, the crimes related to theft and property have been one of the most crucial aspects. In the case of burglary, an actual decrease in the number of burglaries from 16,784 in 2010 to 16,474 in 2020 can be seen (1.85% decrease). Incidents of cattle theft, other theft, and vehicle theft were also reported as being significant and stable, with only slight fluctuations. However, the number of kidnapped/abducted people rose from18,181 in 2010 to 19,658 in 2020 (8.12% increase), indicating certain fluctuations noted along the mentioned period. Also, it is worth noting that the peak was reached in 2019 with 20,256 cases of abducted victims reported. It can be noticed that in the case of minor crimes that fall into the category of miscellaneous, an increase can be observed from 471,788 crimes reported in 2010 to 685,778 in 2020 (45.33% increase), indicating that there are emerging types of crimes registered.

It can be stated that the years 2019-2020 can be described as years with the greatest number of crimes being reported, which is likely due to better reporting, digital tracking, or the social impact of certain occurrences. The crimes (robbery, theft, vehicle theft) have been among the most reported, so they should be included in the prevention policy and strategies.

Table 2: Descriptive Analysis of 10 Different Crimes from 2010 to 2020 in Pakistan

Crime Type	Range	Minimum	Maximum	Sum	Mean	Std._dev.	C.V (%)
Overall crimes	249314	627116	876430	7585008	689546.18	76874.95	11.15
Murder	5784	8153	13937	119230	10839.09	2696.70	24.88
Attempted Murder	6034	9499	15533	138930	12630.00	2461.96	19.49
Kidnapping/Abductio n	2334	17922	20256	210386	19126.00	899.96	4.71
Decoity	3735	1280	5015	30788	2798.91	1493.68	53.37
Robbery	8063	12458	20521	184937	16812.45	2611.59	15.53
Burglary	4240	13833	18073	178228	16202.55	1356.66	8.37
Cattle Theft	4003	5342	9345	83026	7547.82	1354.86	17.95
Motorvehicle Theft	23594	22778	46372	269256	33657.00	8054.65	23.93
Other Theft	25588	32400	57988	453027	41184.27	8300.12	20.15
Miscellaneous Crimes	213890	471888	685778	5917200	537927.27	64720.02	12.03

From Table 2, we can note that the mean is the average count for cases in each type of crime. Standard deviation measures how spread out values are around the mean, and the larger the value, the more variability we will have. Coefficient of Variation gives a measure of variability in relative terms, where a lower % means less variability. Minimum and Maximum are included. Range refers to the difference between the maximum and the minimum, and it serves to measure variability. According to key observations for each type of crime, murder cases are characterized by moderate fluctuations; attempted murder is less variable than murder. Kidnap/abduction has the least variability among types of crime, showing consistency over time. Dacoity has a range of 3,735, which indicates high variability. Robbery is characterized by moderate variability and some stability. Burglary appears to be stable and shows less variability as well. Cattle theft shows noticeable fluctuations, and its level of variability is average. Car theft has an extremely high range of 23,594, indicating a great variability in this type of crime. Miscellaneous crimes account for a lot of crimes as well; however, they are relatively stable rather than car or murder. The most stable crime type is kidnap/abduction (C.V. = 4.71%). The most unstable crimes are murder (C.V. = 24.88%) and car theft (C.V. = 23.93%). Miscellaneous crimes were the most common. Kidnapping and dacoity were the least common.

Table 3: Model Summary and Parameter Estimates

Crime Type	R-Squared	F-statistic	Parameter Estimates	
			β_0	β_1
All Reported Crimes	0.58	12.43	-34878464.46	17651.62**
Murder	0.79	33.11	1463599.14	-720.97***
Attempted Murder	0.72	23.04	1281035.86	-629.48**
Kidnapping/ Abduction	0.06	0.53	-110090.45	64.13
Dacoity	0.90	75.20	860401.23	-425.61***
Robbery	0.06	0.59	409334.46	-194.8
Burglary	0.37	5.27	517076.59	-248.57*
Cattle theft	0.24	2.78	407342.14	-198.41
Motor Vehicle Theft	0.00	0.003	121528.32	-43.6
Other theft	0.25	3.05	-2495755.68	1259.03
Miscellaneous crimes	0.84	46.75	-35469243.50	17869.56***
The independent variable is Year.				

p<0.05, ****p<0.01, *****p<0.001

The simple linear regression for each crime type is discussed in Table 3 based on the form:

$$Crime\ count = \beta_0 + \beta_1 \times Year$$

Where β_0 is the intercept, β_1 is the slope, and year is the calendar year.

Increasing trends:

1. $Miscellaneous = -35469243.5 + 17869.56 \times Year$
2. $Other\ theft = -2495755.68 + 1259.03 \times Year$
3. $Kidnapping/abduction = -110090.45 + 64.13 \times Year$

Decreasing trends:

4. $Murder = 1463599.14 - 720.973 \times Year$
5. $Attempted\ murder = 1281035.864 - 629.482 \times Year$
6. $Dacoity = 860401.23 - 425.609 \times Year$
7. $Burglary = 517076.59 - 248.57 \times Year$
8. $Cattle\ theft = 407342.14 - 198.41 \times Year$
9. $Robbery = 409334.45 - 194.80 \times Year$

Unclear/no trend

10. $Motor\ vehicle\ theft = 121528.32 - 43.6 \times Year$

Miscellaneous crimes show an increase of ~17,870 cases annually. Other kinds of thefts witness an increase of 1,259 cases per year. An insignificant growth is observed in kidnapping with ~ 64 cases/year. Murder cases are declining at a rate of ~721 cases/year, which is statistically significant. Attempted murder significantly increased by ~ 629 cases per year. Dacoity is down by ~ 426 cases/year, a steady decrease. Burglary shows a decrease of ~ 249 cases each year. About 198 cases of cattle rustling are reduced every year. A slight dip in robbery is recorded at ~195 cases per year. Motor vehicle theft shows a dip in the rate with a positive trend after 2016, while the real graph indicates growth after 2016. Among the crimes listed in Table 3, murder, dacoity, and miscellaneous crimes are most significant ($p < 0.001$ for each), attempted murder has a significant change over time ($p<0.01$), while all the crimes increased with significance ($p < 0.01$).

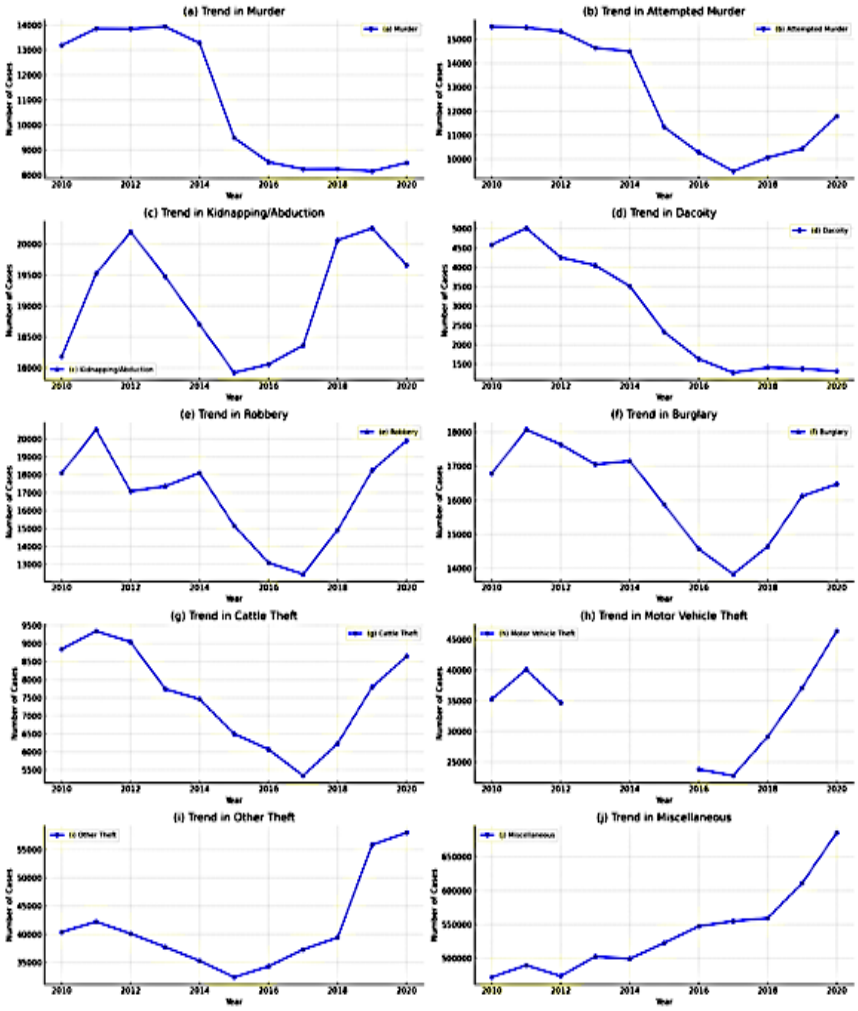


Figure 1: Trend in Reported Cases of all 10 crimes (2010–2020), labeled from (a)-(j)

Figure 1 presents individual line graphs for 10 different crime types, labeled from (a) to (j). A significant decrease is observed in murder and robbery, wheres motor vehicle theft shows a notable increase.

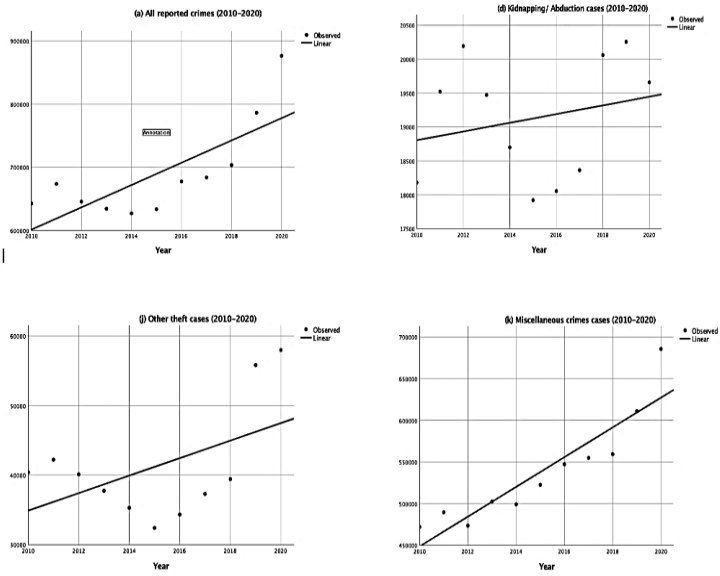


Figure 2: *Regression lines trend in Reported Cases of all increasing crimes (2010–2020), labeled from (a), (d), (j), and (k).*

Figure 2 presents individual trend line graphs (with regression lines) for each increasing crime category from 2010 to 2020, labeled (a), (d), (j), and (k). These show overall upward patterns in reported cases over time

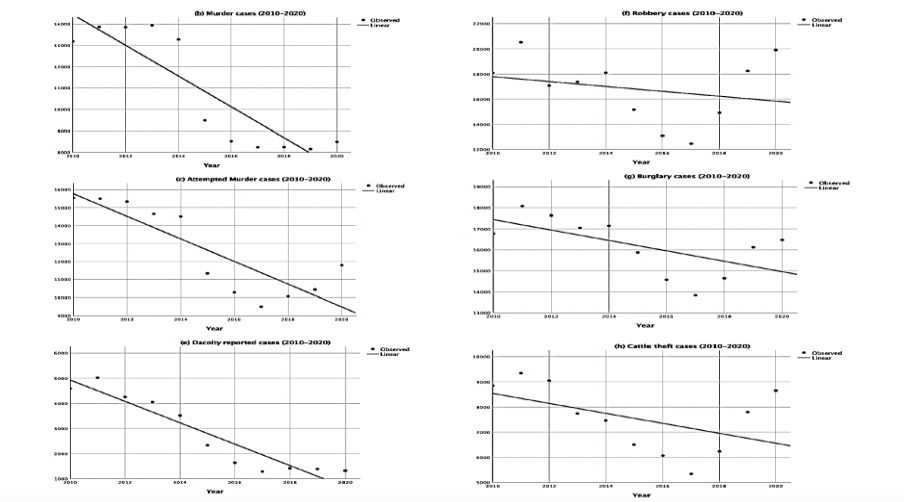


Figure 3: *Regression lines trend in Reported Cases of all decreasing crimes (2010–2020), labeled (b), (c), (e), (f), (g), and (h).*

Figure 3 presents individual trend line graphs (with regression lines) for each decreasing crime category from 2010 to 2020, labeled (b), (c), (e), (f), (g), and (h). These show overall downward patterns in reported cases over time.

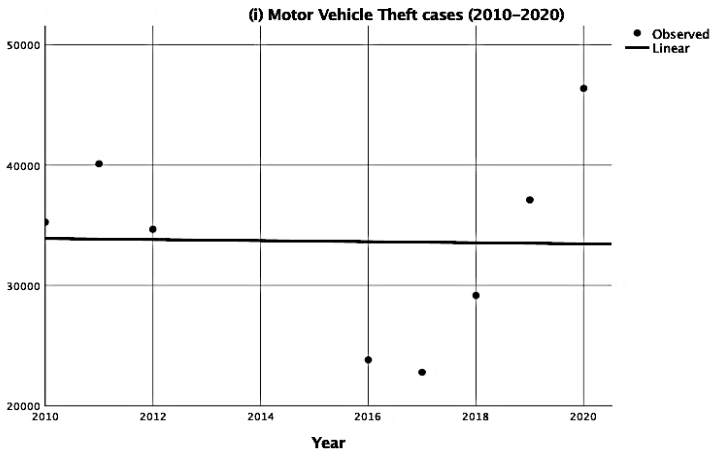


Figure 4: *Regression line trend in Reported Cases of all Motor Vehicle theft cases reported from (2010–2020), labeled (i).*

The graph depicted in Figure 4 illustrates how many motor vehicles were stolen. In general, the information presented in the graph shows no trend in terms of reported incidents over time. The lack of trend may be attributed to missing information included within the data. The crime statistics covering eleven years show that crime in Pakistan involves a complicated reality that is continuously changing. Despite the known fact that certain crime types, such as robberies or murders that decreased due to the improvement of forensic science and the effective application of community policing as well as counter-terrorism measures, the overall results of criminal activity show a substantial growth. In 2020, there were 876,430 crimes registered in Pakistan compared to 642,762 in 2010. High robbery rates, motor vehicle theft, the remarkably rapid growth of kidnappings (18,181 to 19,658), and other types of crimes highlight the failure of preventive systems and public safety measures. Although there have been attempts to update laws and alter the system of justice, the problem of crime out of opportunities and socio-economic causes continues to exist. Such a situation suggests that the application of punitive measures alone will not be enough to address the crime issue. It is necessary to take a look at urbanization processes, discrepancies in incomes, the absence of youth job opportunities, gaps in police work, and similar issues to understand the reasons for unregulated crime. Certainly, the failure to provide timely judicial solutions to crimes and the lack of rehabilitation programs may lead to high levels of recidivism. Finally, the analysis shows that the police started to provide more accurate reporting about crime statistics, which could explain some increase in crime over the decade. However, unless efforts to reform the system are

implemented to bring about changes within the country, the efficiency of such reforms will be low. Crime trends observed during the research correspond with Becker (1968) and Sampson et al. (1997) findings, highlighting the importance of having appropriate situations for criminals to commit crimes. Thus, for instance, the increase of car thefts (from 35,259 to 46,372) even with the police activities shows that policing either was unsuccessful or that criminals are becoming more advanced.

Research shows that education and economic growth are major factors in crime reduction in Pakistan. Studies demonstrate a link between high levels of education and low crime rates, thus suggesting integrating educational policies, law enforcement, and economic growth plans. Apart from that, researchers stress the need to reform criminal justice to establish institutional integrity, enable access to justice, and ensure that counter-crime policies comply with human rights (Ahmed et al., 2019; Anwar et al., 2017).

Criminal justice reforms should be initiated in Pakistan, which encompass various important measures such as the efficacy of the police force, forensic investigation, judicial process, independence of prosecution, accountability of institutions, and modernization of the process using technology. Collectively undertaken measures must be supported by the principles of good governance and the rule of law to achieve the goal of crime prevention and public safety (Chan and Adjorlolo, 2021; Rehman et al., 2021).

4. CONCLUSION

Over the past years, the government of Pakistan has had a mixed record with its policies aimed at combating crime in its territory. There has been a decline in violent crimes such as murder and burglary, but other types of crime such as kidnapping and vehicle theft have significantly increased. The decline in certain crimes while other types continue to rise shows that the country is facing structural and systemic issues. The growing number of total reported crimes despite government interventions suggests that more comprehensive methods need to be utilized. Such methods should involve both implementing laws and using preventive measures that address the root causes, such as poverty, education gaps, and urban insecurity.

5. LIMITATIONS OF THE STUDY

The research makes use of the country-wide gathered data on crimes, but the research does not consider certain policies or programs in different areas affecting the results of the analysis.

The study is based on the crime data reported to the Ministry of Interior and the National Police Bureau. Nevertheless, possible underreporting, especially considering rural areas and other crimes like domestic violence, can affect the results of the study considerably.

The factors such as unemployment, education level, urbanization level, or income inequalities are not introduced in the research, although such factors

could play an important part in revealing the relationship between these variables and changes in crime rate.

The study is only quantitative and does not have any qualitative data at all that would deepen its understanding of how people perceive and experience government policies.

In addition to that, although the study tries to analyze serious crimes such as murder, robbery, or kidnapping, cyber-crimes, drug crime, and gender-related crime are not included, which are very relevant issues in Pakistan today.

6. RECOMMENDATIONS

In this paper, it is suggested that intelligence-based policing can be made more effective by investing in predictive policing technology, crime pattern analysis, and integrated crime information systems. In addition to this, it is recommended that community policing be enhanced by improving public confidence and encouraging crime reports, as well as carrying out judicial reforms aimed at reducing the backlog of cases and making the prosecution process more efficient. Additionally, programs targeting unemployment, involving young people, and aiming at improving education have been recommended, as well as increased legal and physical protection of victims and witnesses.

7. FUTURE RESEARCH DIRECTIONS

Future investigations must explore the implementation timelines of specific crime control strategies and their effect on crime statistics at the state or district level. Utilize GIS and socio-economic parameters to study crime distribution and factors. Massive surveys must be conducted for the acquisition of information on other crimes that occur unnoticed and people's attitudes toward the instruments of law enforcement. Investigate crime tendencies and the impact of law enforcement measures in Pakistan and other countries (India, Bangladesh, Afghanistan) for generating feasible solutions.

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Perception of Unmarried Men about Domestic Violence and Traditional Harmful Masculinity

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Abstract

This study investigated the perceptions of unmarried men living in Lahore toward domestic violence and harmful traditional masculinity. Additionally, this study examined the role of socioeconomic factors influencing unmarried men's perceptions of domestic violence and harmful traditional masculine traits. The cross-sectional survey included 470 men aged 24-35 who were unmarried and belonged to three separate groups using purposive sampling. These groups included final-year university students, employed men with degrees, and unmarried men without degrees. The Attitudes toward Domestic Violence Scale and short Man Box Scale along with a demographic form were used for data collection. Inferential statistics were used for data analysis. The results found that traditional harmful masculinity traits are positively linked with all aspects of attitudes toward domestic violence. Although most background characteristics did not have statistically significant correlations to the study's findings, statistically significant differences were found in factors related to mothers' employment status, mothers' education level, occupation category, birth order, media habits, and levels of organizational membership were found. Consequently, the research indicates that early family socialization and environment at home as well as exposure to different types of media could play a role in shaping unmarried males' attitudes toward violence. Therefore, prevention programs that promote healthy masculinity before marriage may be helpful in reducing the rate of domestic violence.

Keywords: *Domestic Violence, Masculinity, Belief, Husbands*

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1. INTRODUCTION

Globally, domestic violence continues to be one of the most common forms of abuse (Dobash & Dobash, 2017; Mazibuko & Umejesi, 2015). Approximately one in three women worldwide have experienced sexual or physical violence from an intimate partner at some point in their life (WHO, 2021). Domestic violence is not only about causing an injury to someone; it has severe long-lasting psychological effects, economic disenfranchisement, and creates intergenerational cycles of violence (Devries et al., 2013). In addition to being psychologically harmful, domestic violence has a direct global economic cost estimated to run into trillions of dollars annually in healthcare costs, lost productivity due to injury or an inability to work due to fear of being abused, and legal costs associated with prosecuting domestic violence offenders (UN Women, 2022). The continued epidemic of domestic

violence worldwide presents a challenge to overall public health in the affected nations involved and impedes many of the goals of the United Nations Sustainable Development Goals.

Boys are socialized into rigid models of masculinity that reward the use of coercive power and frame violence as a legitimate way to exert authority across many cultures (Connell & Messerschmidt, 2005). This creates a fertile environment for domestic violence, as men who have internalized toxic masculine norms are significantly more likely to commit violence against their intimate partners (Jewkes et al., 2015). In patriarchal societies, toxic masculinity has transitioned into a structurally mandated directive, reinforced by legal, economic, and family systems, that privilege male authority and diminish the autonomy of women (Heise et al., 2019). As a result, there is a great deal of normalization of domestic violence, making it acceptable behavior, to both society and those who perpetrate the abuse, and this power imbalance leaves the victims of domestic violence with few options to seek help (Flood & Pease, 2009). Therefore, male perceptions of masculinity and violence must be understood to examine the ways the internalized dictums of patriarchy within these structures sustain the systemic impunity associated with domestic violence.

It has been widely reported that a country's development is also hampered by domestic violence, because domestic violence limits the ability of women to participate in the workforce, creates strain on public services, and creates an intergenerational cycle of poverty and violence (Ouedraogo & Stenzel, 2021). In Pakistan, the scenario is the same, and domestic violence is a severe problem that affects people especially girls from different socioeconomic backgrounds and geographical areas (Ahmad, 2023; Yusuf et al., 2024). The severity of the situation in Pakistan is further documented in the Global Gender Gap Report 2025, which places Pakistan at the bottom, ranking 148th out of 148 countries, indicating major disparities in education, economic participation, and political participation (World Economic Forum, 2025). Moreover, the Human Rights Commission of Pakistan (HRCP) reports that more than 90% of women have experienced some form of domestic abuse in their lives (Ali & Inam, 2023). Additionally, it has been reported that the majority of those who experience domestic violence do not report because of social stigma and the internalization of violence as a normal aspect of their lives (UNFPA, 2023).

In Pakistan, data from the National Commission on the Status of Women and the Sustainable Social Development Organization indicates Punjab had the most reported incidents with 1,167 cases of domestic violence in 2024 (SSDO, 2025). Sindh reported 19.8% of cases involving crimes against women. Meanwhile, Khyber Pakhtunkhwa and Balochistan showed fewer cases, often because of differences in legal reporting and barriers preventing complaints (NCSW, 2024). Population density and district-level support services influence these regional trends, often hiding the abuse realities in remote rural areas (SSDO, 2025).

Pakistan has a deeply embedded culture that expects males to embody the traits of masculinity, strength, and power (Bhana, 2003; Qazi& Shah, 2025), leading to male aggression and the creation of violent acts of masculinity as a means through which men can gain power, while women's reliance on men is legitimized through limited religious understandings of assigned gender roles (Saeed, 2012; Kabir et al., 2017). Therefore, many men use violence as a means of meeting their perceived obligation to be physically strong, honor their family, or fulfill their expectations associated with masculinity (Makhanya, 2023; Kabir et al., 2017). Moreover, patriarchal culture allows men to abuse women to discipline them (Hadi, 2017). These cultural norms are not the only things driving violence; other important factors contributing to violence against women include low levels of education, unemployment, financial dependence on male relatives, women not knowing their rights, and significant differences in socioeconomic status. These factors drive the level and frequency of violence experienced by women living in rural areas that have limited oversight and little to no legal protections (Asghar et al., 2025; Jewkes & Morrell, 2018; Mshweshwe, 2018).

The consequences of violence against women are severe and can affect victims' ability to function normally in multiple dimensions and include physical injuries; emotional pain; sexual abuse; and economic exploitation (Asghar et al., 2025). Imposing traditional masculine ideals on men negatively impacts women's health-seeking behavior in Pakistan and increases their vulnerability during pregnancy due to fear of retribution (Kabir et al., 2017; Madhani et al., 2017). Simultaneously, traditional masculinity ideology forces men to not express emotions and to be more aggressive than normal (Fox et al., 2014; Khan, 2007; Rabbani et al., 2008) which places an undue burden on men who suffer from mental illness, engage in risky behavior, and react violently in response to any perceived threat to their "valuable manhood" (Makhanya, 2023; Walther et al., 2023). Men that are unprepared for healthy marital roles and are hesitant to seek out assistance alter the family dynamic (Ali et al., 2021), creating a toxic cycle of learned abuse across generations (Kabir et al., 2017). Therefore, it is imperative to address the negative norms that support gender-based violence.

To challenge cultural norms related to domestic violence, and raise awareness, educate, and achieve gender equality, it's necessary to create a culture without violence against women (Fatima, 2020). This involves acknowledging the link between domestic violence and toxic masculinity; this includes working to change culture and understanding of domestic violence through educational and awareness-raising campaigns. Despite government initiatives and laws (legal framework such as the three laws legislated to prevent cases of domestic violence including the Punjab Protection of Women Against Violence Act 2016; Domestic Violence Prevention and Protection Act Sindh, 2013; and Domestic Violence Prevention and Protection Act Balochistan, 2014), implementation challenges persist, with victims lacking legal protection and facing cultural barriers (Rashed et al., 2023; Singh & Naeema, 2021).

As mentioned above, Pakistan has enacted legislation aimed at reducing violence perpetrated against women, however, there are still significant gaps in implementation. For example, in Pakistan, many of these laws do not consider the engagement of men in violence prevention (Ali et al., 2020). Additionally, most studies that exist regarding violence against women and men do so through a quantitative lens and are informed by Western definitions of violence which limits understanding of local definitions, particularly among unmarried men (Ali et al., 2019). There is a need to promote positive masculinity and include men in conversations about gender-based violence (Ali et al., 2020; Makhanya, 2023). Further, while domestic violence is common, little research has focused on the perspective of future husbands, who may be unfamiliar with healthy aspects of masculinity (Ali et al., 2021& Ali et al., 2019). This research addresses this gap by exploring the perception of future husbands regarding toxic masculinity and domestic violence. The purpose of this study is to identify the potential factors that might influence the perception of unmarried men about traditional masculine traits/characteristics and domestic violence. This study intends to identify the groups of individuals who do or do not endorse domestic violence and harmful masculinity traits.

1.1 Significance of the study

Despite regulations and increasing levels of societal awareness, the incidence of domestic violence within Pakistan remains high as discussed above. Unfortunately, the media is attempting to romanticize harmful standards of masculinity within marriage which can have an impact on young people, particularly males (Zulfiqar et al., 2023). Traditional masculine gender roles and associated concepts, such as honour (izzat) and the idea of males being the guardians of their families, have been instilled in males in Pakistan since childhood and permit men to use aggression to maintain the family structure and the women's submissiveness (Ali et al., 2020). Unmarried males are of particular interest because their views on masculinity and domestic violence will largely shape the nature of family and gender relationships for future generations (Pulerwitz et al., 2019). This study thus highlights the need to design sensitization programs for young men to disrupt the cycle of toxic masculinity that is passed down from fathers to sons and transform the future of domestic life in Pakistan. This research can help policymakers design initiatives or interventions for boys to adopt healthy forms of masculinity and eliminate the pressure of adopting traditional masculine traits in their private and professional lives. This, consequently, will promote the well-being of families in society.

1.2 Objectives

- To examine the perceptions of unmarried men regarding the prevalence of domestic violence and adherence to traditional harmful masculine traits

- To identify socioeconomic and familial factors that influence unmarried men's perceptions of domestic violence and adherence to traditional masculine traits
- To assess the relationship between traditional harmful masculine traits and domestic violence
- To suggest evidence-based strategies to nurture gender-sensitive future husbands and fathers.

1.3 Hypotheses

- H1: There is a correlation between adherence to traditional harmful masculine traits and attitudes toward domestic violence among unmarried men.
- H2: There is a relationship between age, income, and unmarried men's perceptions of domestic violence and traditional harmful masculine traits.
- H3: Unmarried men from different socioeconomic settings including level of education and occupation tend to differ in their perceptions of domestic violence and traditional harmful masculine traits.
- H4: Unmarried men's perceptions about domestic violence and traditional masculine traits are likely to differ based on their preferences related to media programs, different social and cultural factors, including rural/urban background, caste, political or religious group affiliation.
- H5: Familial background, including parental education and employment status, birth order, and exposure to domestic violence, tends to influence unmarried men's perceptions of domestic violence and traditional masculine traits

2. LITERATURE REVIEW

Globally, scholars suggest that domestic violence is grounded in the creation of males' characteristics by society in which they live and the institutions that promote men's dominance. This creates a view of masculinity that is male-dominated and shapes the behavior of men (Ani, & Katende-Kyenda, 2025; Graaff & Heinecken, 2017; Jewkes & Morrell, 2018). Masculinity is an idea that is fluid and can change over time due to the influence of socialization, culture, and traditional images of masculinity. The research has pointed to patriarchy and traditional masculinity as the primary factors that perpetuate violence against women (Fox et al., 2014; Hamberger et al., 2017; Khan, 2007; Rabbani et al., 2008). These systems create a male-dominated, hierarchical society so that men can use violence as a means of maintaining their dominance.

According to the literature, men's behaviors, health habits, and social connections are largely shaped by the ways in which they express masculine ideals (Harland & McCready 2015). For instance, hypermasculinity, which includes dominant personalities that are emotionally repressed and exhibit

aggressive forms of assertiveness, is also associated with an increased risk of committing domestic violence (Brown, 2016). Following traditional masculine standards is also related to dangerous or unhealthy attitudes and behaviors that affect not only the individual but also other people (Norton-Baker, 2020). Toxic masculinity and masculine honor provide a theoretical foundation for understanding how social expectations of strength, dominance, and reputation can help rationalize the use of violence to protect or establish one's identity or status (Anderson & Umberson, 2001; Ward et al., 2006). Studies have indicated that when men's masculine identities are threatened, they may resort to violent behavior to restore their control (Connell, 2017; Jewkes & Morrell, 2018; Morrell et al., 2012).

Socioeconomic conditions interact with masculine norms to increase domestic violence risk. Studies regularly find links between poverty, joblessness, financial stress, and more domestic violence (Adams et al., 2012; Ahmadabadi et al., 2020; Bassuk et al., 2006; Bhalotra et al., 2021; Slabbert, 2017). Masculinity often connects strongly to being the provider. Therefore, job loss or low earnings can create stress and identity struggles which can lead to increased frustration and stress and may result in violence. Younger men in poorer communities seem more vulnerable to these pressures (Barker & Loewenstein, 1997; Diop-Sidibé et al., 2006; Sánchez-Rodríguez et al., 2019).

Evidence regarding the relationship between age and the perpetration of domestic violence suggests that this crime affects populations differently throughout their lifetimes. Younger men in many circumstances appear to be more likely to engage in domestic violence (Peterman et al., 2015; Wang, 2016). Similarly, birth order was also reported as an important factor in practicing aggressive behavior (Marleau & Saucier, 2005). Employment contexts and overall societal structures have also influenced the masculine characteristics that shape the norms of violence exhibited by men. For example, men's involvement with occupations dominated by one gender (either male or female) is linked with their likelihood of committing domestic violence; a few studies show that men employed in certain occupations are more likely to be perpetrators of domestic violence (Garg et al., 2019; Melzer, 2002). Work-induced stress has been linked to domestic abuse among families (Anderson & Lo, 2011) as well as to job-related settings encouraging males to develop traditional expectations of masculinity and strengthening their commitment to following norms of dominance (Milner et al., 2018); which indicates that workplaces can act as a second level of masculine formation.

Education is one more variable affecting belief about manhood and responses to intimate partner abuse. Research has demonstrated that lower levels of education correlate with greater support for conventional masculine norms and greater tolerance for violence (Davis, 2013; Jakupcak et al., 2002). Because of this possible relationship, education might provide a safeguard through developing critical analytic skills regarding gender norms, thereby lowering acceptance of coercive behavior.

Many cultural and structural factors such as caste, ethnicity, religion, geographic location and rural-urban differences have a significant effect on

the way gender hierarchies and violence patterns develop (Ackerson & Subramanian, 2008; Atteraya et al., 2015; Messerschmidt, 2018; Moffatt, 2012; Silva, 2022). Rural men have been known to adhere strongly to traditional definitions of masculinity and have reported higher rates of violence compared with urban areas (Buriro & Ali 2025; Carnahan et al., 2018). Media also plays an important role in reinforcing gender norms by influencing society's perceptions of appropriate masculine and feminine behaviors (Gürkan, 2017). Furthermore, use of alcohol and drugs has been linked to increased aggression and domestic violence risk (Foran & O'Leary, 2008).

Family structure and intergenerational relationships also play a role. Evidence shows more domestic violence in extended or joint families than in nuclear ones in some places (Marcell et al., 2011). The education level of parents and how they relate to their children affect child development. Likewise, exposure to interparental violence is linked to long-lasting psychological and behavioral effects (Feinberg et al., 2016; Kelly & Johnson, 2008). When violence gets passed down from one generation to another, children who experience domestic violence often repeat aggressive patterns as adults (Eriksson & Mazerolle, 2015). From a structural view, legal and institutional responses still matter a lot. Scholars say state accountability is needed when domestic violence persists due to inadequate prevention, enforcement, or prosecution mechanisms (Moore, 2003). Media organizations also play a significant role in public awareness and changing norms when they follow responsible regulatory guidelines (Honig, 1993).

Even though a great deal of academic research connects several facets of patriarchal structures, the beliefs and ideas associated with traditional masculinity, and the economic pressures surrounding these issues to domestic violence, there are still gaps that remain underexplored. Most of the existing literature is limited to looking at domestic violence only involving males who are married or cohabiting, and far less literature examines the ways unmarried males view, understand, and construct normative definitions of domestic violence while they are still in their early adulthood when many of their normative beliefs around gender are still being formed. Additionally, while a significant amount of the existing body of knowledge includes looking solely at perpetration rates of domestic violence and the risk factors for perpetration, there has not been much investigation into how unmarried males develop their image, identity, and ideas about domestic violence, as well as what males learn from their engagement with masculinity.

Many previous studies assess masculinity as a broad concept. This limits the study's analysis of the different factors that shape an individual's understanding of masculine identity (such as educational level, employment status, urban/rural residence, caste group, religion, and age), specifically unmarried males. There is a scarcity of evidence in the South Asian context. This is particularly evident in understanding how inequities built into structural systems and local gender systems affect unmarried men's perceptions regarding their masculinity. Furthermore, there is little research

regarding the behaviors that develop before marriage dictated by societal beliefs about desirable forms of masculinity. This knowledge gap creates barriers for developing early strategies to change harmful versus healthy masculine norms before they have been integrated into long-term intimate relationships.

This research contributes significantly to the existing body of Pakistani literature that focuses exclusively on women as victims and lacks an adequate examination of how socioeconomic factors influence this pattern (Ali et al., 2011; Raza & Pals, 2024). Research examining the prevalence of domestic violence among women in Pakistan contains estimates ranging from 70% to 85% of women exposed to spousal abuse; however, little emphasis has been placed on the pre-marital development phase of men's perspectives of violence (Raza & Pals, 2024). It is essential to comprehend the way future husbands perceive their roles in the family because many patriarchal gender roles, especially those related to masculinity, such as "street macho," are ingrained in boys at a young age and thus carry over into their adult lives (Ali et al., 2017). As male perpetrators of domestic violence are often found to act within rigid gender structures, targeting unmarried men is a means of identifying and addressing harmful attitudes before they become apparent in marital conflict (Buriro & Ali, 2025; Ali et al., 2017).

2.1 Theoretical Framework

This is based on Connell's (1995) idea of masculinity which focuses on different types of masculinity and the ways in which masculinity is connected to dominance. Robert Connell identified four types of masculinities. These types are hegemonic, subordinate, marginal and complicit masculinity. As Connell (1995) states, masculinity is not a uniform and ageless phenomenon but instead exists in varying ways throughout history, geography, class, culture, and affective experiences such as ethnicity and sexuality. There are many "masculinities" or forms of expressing masculinity in societies across the world (Fernández-Álvarez, 2014; Cummins, 2022), however, using the framework developed by Connell will help researchers analyze the local concept of masculinity and its perceived manifestations of masculinity within gender relations in Pakistan. Hegemonic masculinity can therefore provide a clear example for understanding the relationship between masculine beliefs that perpetuate domestic violence and attitudes toward such actions.

The Man Box Scale measures traits associated with harmful masculinity, which measures the extent to which a boy internalizes hegemonic norms that privilege men. Attitudes towards violence in domestic situations (like controlling and possessive behavior, controlling and possessive verbal behavior, and controlling and possessive financial behavior) are thought to reflect how individuals behave toward other men and women. Power Control Theory (Hagan et al., 1990) further enhances this framework by explaining the ways patriarchal families allow men to use authority over women. By allowing men to control women, patriarchal families create an environment where men feel they can justify using violence against women. This concept

explains, in this study, men's perceptions of dominating and controlling women.

2.2 Power-control Theory

This scientific model is based on John Hagan's Power Control Theory (1990), which emphasizes the importance of establishing dominance and control within the family. This theory describes adaptive behavior within the home, which aids in understanding the underlying motivations of men who control their partners and maintained power within the house. According to Power Control theory hypothesis, patriarchal beliefs contribute to delinquent behavior because of the varied ways in which children are supervised at home (Hagan et al., 1990). This theory emphasizes the differences in how boys and girls are raised within their homes. In patriarchal societies, girls are strictly controlled and subjected to more regulations, whereas boys are given more independence and are consequently more likely to engage in criminal behavior. In the Pakistani context, masculinity is often associated with traditional gender roles and expectations that emphasize dominance, authority, and control. Domestic violence is a significant concern in Pakistan, with cultural beliefs and societal norms often providing justification for the use of violence to maintain control over women (Noor & Shah, 2017). The Pakistani perspective on masculinity also highlights the importance of honor and reputation within society.

3. METHOD

3.1 Research design

This study used quantitative cross-sectional survey design. Researchers chose this design to measure attitudes at one point in time and to compare groups of unmarried men. They examined links between traditional masculine traits and attitudes toward domestic violence without manipulating any variable. So, a cross-sectional approach was ideal for observing natural variations in the target population given the study's time and access limits.

3.2 Population

Men aged 24-35 years old, living either temporarily or permanently in Lahore, constituted the accessible population of this study. There were three groups in the accessible population; final-year university students, employed unmarried men with a university degree, and unmarried men without a university degree. The prior research cited provides evidence that educational achievement and labor market participation have a large impact on the way men view gender equality and how they construct their masculinity; thus, allowing for a comparison of how different socialization contexts influence views of masculinity and gender relations among these groups of participants. The chosen age group is an important transition in the life course for many men who are entering or preparing to enter adult family roles (in the Pakistani

socio-cultural context, it is considered that they will soon be getting married). As such, all three groups of participants will be a prevention-relevant population, as they have only recently begun to develop their views regarding their future roles in relationships in terms of gender relations and the family.

3.3 Sample and sampling strategy

Cochran's formula was used to determine the sample size for this study as a suggested approach for cross-sectional survey research (Cochran, 1977). A total of 384 participants were required based on the following criteria: 95% confidence level; 5% margin of error; and 50% response distribution. To increase statistical power, reduce sampling error, and account for incomplete responses from the study participants, the sample size was increased to include 470 respondents (Israel, 1992; Bartlett et al., 2001). The sample included 156 final-year MS students at public universities in various fields, and 160 unmarried employed men who had completed university, and 154 unmarried men without a university degree (whether employed or not). Due to a lack of a complete sampling frame, the researchers used a purposive sampling strategy with non-probability techniques to recruit participants from three pre-defined groups to obtain access to unmarried men in different educational and occupational backgrounds. Participants from universities were recruited from public universities, while non-university participants were recruited from their places of employment as well as community contacts in Lahore. This sampling strategy allowed the researchers to include respondents that were relevant to their specific objectives through non-probability sampling. Creswell and Creswell (2018) state that the use of purposive sampling is appropriate when the goal of the research is to gain access to a specific subgroup.

3.4 Inclusion and exclusion criteria

The sample consisted of only unmarried males aged 24 to 35 and residing in Lahore (permanent or temporary) who belonged to one of the three target groups and consented to participate. Married, divorced, separated and widowed men were not included as their different experience can influence their opinion.

3.5 Tools/Instruments

This study used two standardized instruments and a separate proforma to collect demographic information. Attitudes toward domestic violence were measured through the Attitudes toward Domestic Violence Scale (Banozic, 2018), a 29-item Likert-type measure covering possessiveness and control, verbal abuse, financial abuse, and physical abuse. The scale is reported to have high internal consistency with a Cronbach’s alpha of 0.80, while subscales reliabilities range from 0.7 to .85 (Banozic, 2018). Traditional masculinity beliefs were measured through the short version of the Man Box Scale (Hill et al., 2020), which contains five items with reported reliability of 0.89. The Man Box Scale developed to measure internalized hegemonic

norms that are linked more specifically to harm rather than masculinity in general. Before data collection, the wording of the tools was checked for clarity and appropriateness for the culture of respondents. All scales were used after obtaining formal permission from authors. The instruments' translation from English to Urdu was done using a two-phase forward-backward translation method because many respondents preferred to respond in Urdu. To create an Urdu version of the scales, a bilingual language professional translated the scales from English into Urdu. Then, a different bilingual person translated the Urdu version back into English to ensure that it was conceptually equivalent to the original English version. Corrections were made to improve the cultural-appropriateness and clarity of the instruments based on an evaluation done by professionals. The instruments were pilot tested to determine their clarity and reliability prior to carrying out the official data collection.

3.6 Data Collection Procedure

After getting access to institutions and securing informed consent, the researcher personally contacted eligible participants who were in universities, workplaces, and community settings. Identifying details weren't recorded. Emphasis was placed on confidentiality and anonymity. Respondents were told that participation was voluntary and they could skip any question if they did not feel comfortable answering.

3.7 Ethical Guidelines

The study adhered to all ethical guidelines for social research regarding participant recruitment, data collection, data storage, and reporting of results. Informed consent was obtained from participants and from relevant organizations where access to participants was required. Participation was voluntary and the respondents' data was kept confidential and anonymous. Respondents were informed they could refuse to answer any question and could withdraw from the study at any time.

3.8 Data Analysis

In the present study, to examine male differences in their perceptions of domestic violence (in terms of four factors) and harmful traditional masculinity traits, various statistical tests, such as one-way ANOVA, post hoc Tukey's HSD, correlation, and independent sample t-test, were applied. Hypotheses 1 and 2 examined the relationships among the continuous variables of masculinity, domestic violence attitudes, age, and income using Pearson's correlations (Table 1). Hypothesis 3 used a one-way Anova to determine differences across respondents' educational levels, parental education levels, and occupations (Tables 5-8). Hypotheses 4 and 5 were assessed using independent samples t-tests for background and parental variables (Tables 2-4). The data analysis was performed using SPSS version 26.0.

4. RESULTS

Table 1: Pearson Correlation Coefficients Among Study Variables and respondents' income and age

Variable	1	2	3	4	5	6
Age	—					
Income	.19**	—				
Possessiveness & Control	-.01	.06	—			
Verbal Abuse	-.03	-.05	.38**	—		
Financial Abuse	-.06	-.04	.28**	.47**	—	
Physical Abuse	-.03	-.11*	.24**	.53**	.42**	—
Masculinity	-.01	-.02	.28**	.47**	.44**	.35**

$p < .05$*, $p < .001$.

Table 2: *Differences Based on Mother's Employment Status*

Variable	Working M(SD)	Housewife M(SD)	t(468)	P	η²
Possessiveness & Control	23.46 (6.40)	22.94 (4.66)	0.87	.384	
Verbal Abuse	16.80 (4.59)	18.03 (4.52)	-2.26	.024	-0.27
Financial Abuse	31.53 (7.93)	30.59 (6.38)	1.17	.243	
Physical Abuse	20.40 (5.26)	21.63 (4.67)	-2.15	.032	-0.25
Masculinity	2.61 (0.48)	2.59 (0.44)	0.45	.653	

$p < .05$.

Table 3: Differences Based on Group Affiliation of respondents (Religious/Political)

Variable	Yes M(SD)	No M(SD)	t(468)	P	η²
Possessiveness & Control	23.02 (6.04)	23.04 (4.33)	-0.04	.968	
Verbal Abuse	16.77 (4.40)	18.40 (4.54)	-3.78	.000	-0.36
Financial Abuse	29.34 (5.73)	31.58 (7.07)	-3.54	.000	-0.35
Physical Abuse	20.19 (4.65)	22.11 (4.75)	-4.27	.000	-0.41
Masculinity	2.52 (0.43)	2.64 (0.45)	-2.68	.008	-0.27

**$p < .001$.

Table 4: *Differences Based on Exposure to Domestic Violence*

Variable	No M(SD)	Yes M(SD)	t(468)	P	η²
Possessiveness & Control	22.11 (4.72)	23.77 (5.13)	-3.62	.000	-0.34
Verbal Abuse	16.91 (4.75)	18.53 (4.26)	-3.89	.000	-0.36

Variable	No M(SD)	Yes M(SD)	t(468)	P	η²
Financial Abuse	30.10 (6.99)	31.29 (6.41)	-1.92	.056	
Physical Abuse	20.93 (4.79)	21.79 (4.79)	-1.93	.054	
Masculinity	2.55 (0.47)	2.63 (0.42)	-2.17	.031	-0.18

***p* < .001, *p* < .05.

Table 5: *ANOVA by Education Level of Respondents*

Variable	Illiterate	Intermediate	Bachelor	Master+	F	p	η²
Possessiveness & Control	22.18 (4.39)	21.81 (4.06)	24.04 (5.55)	23.07 (5.01)	4.80	.003	.03
Verbal Abuse	17.36 (4.31)	17.73 (4.73)	17.83 (4.58)	—	0.22	.884	.001
Financial Abuse	30.79 (6.39)	31.60 (6.06)	30.27 (6.57)	—	0.85	.466	.005
Physical Abuse	21.42 (3.74)	21.83 (4.61)	20.70 (4.78)	—	1.87	.133	.011
Masculinity	2.53 (0.32)	2.57 (0.42)	2.65 (0.44)	—	1.39	.242	.008

p < .05.

Table 6: One-way ANOVA showing differences based on mother's education

Variable	Illiterate M(SD)	Intermediate M(SD)	Bachelor M(SD)	Master+ M(SD)	F(3, 466)	p	η²
Possessiveness & Control	22.05 (4.24)	23.14 (4.71)	24.92 (6.02)	22.42 (5.16)	7.89	.000	.05
Verbal Abuse	17.69 (4.51)	17.74 (4.50)	18.33 (4.80)	17.24 (4.30)	0.76	.516	.004
Financial Abuse	30.39 (6.53)	29.92 (6.07)	32.01 (7.15)	31.71 (7.50)	2.45	.063	.015
Physical Abuse	21.54 (4.67)	21.06 (4.70)	21.64 (5.21)	21.30 (4.72)	0.35	.787	.002
Masculinity	2.54 (0.40)	2.58 (0.45)	2.67 (0.46)	2.64 (0.54)	2.20	.088	.013

Note. p < .05

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Table 7: *One-way ANOVA showing differences based on respondents' profession*

Variable	Doctor	Engineer	Private	Govt	Teacher	Lawyer	Business	Other	F (7, 462)	p	η^2
Possessiveness & Control	23.42 (5.03)	24.63 (5.06)	23.23 (6.55)	22.33 (4.43)	24.49 (4.94)	23.53 (4.33)	21.32 (3.78)	22.54 (4.40)	3.36	.002	.05
Verbal Abuse	16.60 (4.75)	18.75 (4.96)	18.09 (4.29)	18.20 (3.71)	18.16 (4.34)	19.84 (4.75)	16.10 (4.43)	18.40 (4.39)	3.42	.001	.04
Physical Abuse	20.51 (4.95)	21.65 (5.76)	21.24 (4.91)	20.33 (4.94)	21.89 (4.13)	22.46 (5.72)	20.30 (4.98)	22.49 (3.85)	2.08	.044	.03
Financial Abuse	30.24 (7.57)	31.21 (7.54)	30.59 (6.85)	30.75 (5.43)	31.18 (6.72)	33.30 (6.57)	29.47 (6.09)	31.33 (6.38)	0.95	.465	.03
Masculinity	2.52 (0.57)	2.62 (0.67)	2.61 (0.47)	2.68 (0.50)	2.63 (0.42)	2.78 (0.37)	2.49 (0.47)	2.61 (0.36)	1.38	.212	.02

$p < .05$.

Table 8: *One-way ANOVA for differences based on birth order*

Variable	1st	2nd	3rd	4th	5+	F(4, 465)	p	η^2
Possessiveness & Control	24.01 (6.26)	22.54 (4.20)	23.17 (4.72)	21.42 (4.31)	23.69 (3.67)	3.65	.006	.03
Financial Abuse	30.63 (6.85)	32.08 (6.51)	29.92 (6.81)	29.35 (5.55)	31.00 (7.59)	2.48	.044	.02
Verbal Abuse	17.82 (4.29)	17.85 (4.94)	17.35 (4.27)	17.98 (4.48)	18.23 (4.83)	0.34	.853	.02
Physical Abuse	21.41 (4.96)	21.80 (4.20)	20.80 (4.84)	20.98 (4.99)	22.04 (5.61)	0.90	.465	.006
Masculinity	2.58 (0.44)	2.64 (0.44)	2.59 (0.51)	2.57 (0.36)	2.51 (0.40)	0.74	.563	.006

$p < .05$.

Table 9: *One-way ANOVA showing differences based on media-related programs' preferences*

Variable	Horror	Romantic	Adventure	Comedy	Action	Animation	Other	F(6, 463)	p	η^2
Financial Abuse	31.25 (7.61)	28.79 (5.66)	30.40 (6.63)	31.19 (5.24)	33.06 (6.87)	29.88 (6.88)	31.23 (8.90)	3.30	.003	.02
Physical Abuse	21.31 (4.75)	19.90 (4.67)	21.11 (5.01)	22.13 (4.32)	22.42 (4.57)	23.62 (3.29)	22.93 (5.57)	3.64	.002	.004
Possessiveness & Control	22.71 (5.06)	22.04 (5.97)	23.27 (4.11)	23.85 (4.48)	23.10 (3.51)	23.37 (4.92)	24.00 (7.13)	1.39	.217	.04
Verbal Abuse	17.34 (4.76)	17.75 (4.34)	17.96 (4.51)	17.67 (4.68)	17.94 (4.85)	18.62 (4.80)	18.58 (3.87)	0.37	.896	.04
Masculinity	2.47 (0.49)	2.54 (0.45)	2.62 (0.40)	2.61 (0.33)	2.74 (0.46)	2.63 (0.42)	2.62 (0.50)	2.74	.013	.03

$p < .05$.

Table 1 provides evidence that masculine attitudes are associated with attitudes towards domestic violence, noting that masculinity has a statistically significant positive correlation with the four types of domestic violence. This correlation is strongest for verbal abuse and financial abuse. Age and income have very little influence on domestic violence. Respondents whose mothers were housewives rated significantly higher in verbal abuse and physical abuse than those respondents whose mothers worked (Table 2).

The data shows that respondents who witnessed domestic violence had considerably greater scores for possessiveness/control, verbal abuse and beliefs about harmful masculinity than did respondents who did not witness domestic violence. Further, social integration was shown to reduce extreme attitudes through group affiliation (religion/politics), which significantly lowered all abuse and masculinity scores (Table 3). There were no statistically significant differences between groups in relation to financial or physical abuse (Table 4).

In addition, there is evidence that challenges the assumption that education reduces controlling attitudes: respondents whose mothers had a bachelor's degree and first-born respondents had significantly higher levels of possessiveness (Tables 6 and 8). Although the respondents' level of education did not reduce justification for domestic violence (Table 5), professional identity did (Table 7): respondents who were lawyers or engineers scored higher in abusive behaviors and control, indicating that some professions have tendency to promote aggression.

The findings regarding media's influence on men's perceptions of adherence to traditional masculine traits and domestic violence are reported in Table 9. The highest scores for the domains of financial abuse or characteristics of hegemonic masculinity were found among those who regularly viewed action media; therefore, there appears to be a relationship between the genres of action media and hegemonic masculinity. Men who viewed relationship-based media (e.g., romantic) had the lowest scores for the same two domains; therefore, viewing relationship-based media appears to reduce the likelihood of men having aggressive attitudes. Men who regularly

viewed animated media had the highest score for physical abuse, which may be due to desensitization to violence in animated media. Neither possessiveness nor verbal abuse showed significant differences by viewing media types; therefore, the strongest influence of media appears to be in the overtly physical, financial, and ideological domains compared to control and verbal items.

In general, the primary psychological predictor of domestic violence attitudes was found to be harmful masculinity, which was found to be shaped by socialization rather than demographic characteristics, and group membership served as a protective factor while traditional family structures, specific professions and action-based media were classified as risk factors.

4 DISCUSSION

The study's strongest insight is finding that traditional masculinity is positively associated with all four dimensions of domestic violence attitudes. Evidence from Pakistan also shows the ways men's excuses for partner violence are influenced by gender roles which expect wives to be obedient and accommodating (Zakar et al., 2013).

The data from Tables 1- 4 show that social influences are primarily predictive of unmarried males' attitudes toward violence against their partners, and harmful masculinity; whereas demographic characteristics (e.g., age, income) have little effect. Table 1 shows a statistically significant positive relationship between masculinity and domestic violence; as such, family dynamics (tables 2, 3 and 4) influence the attitudes of unmarried males toward justifying domestic violence and maintain control in relationships. This resembles the cyclical effect of violence between generations and the power control theory of domestic violence; traditional and violent gender roles serve to create an atmosphere of acceptance toward aggressive behaviors (Eriksson & Mazerolle, 2015; Hagan et al., 1990). Therefore, early socialization is critical in shaping the beliefs of young boys about traits related to premarital masculinities (Ali et al., 2021)

The rejection of many hypotheses is useful information and should thus be treated from a theoretical perspective rather than simply disregarded entirely (Tables 5 to 9). There were no significant differences found in men's perceptions based upon their work status, rural or urban background, caste or the educational and working status of their father. A possible interpretation is that in a city like Lahore, support for controlling attitudes toward women may go beyond visible social categories and be maintained by wider patriarchal norms instead of any single demographic factor. This idea aligns with studies showing masculinities vary and their connection with violence does not reduce to simple social categories alone (Jewkes & Morrell, 2018). It also matches recent South Asian findings showing structural factors like caste and rural living can be important, but authoritarian beliefs about household and sexual autonomy more often predict attitudes toward wife-beating (Pradhan & De, 2024).

Moreover, Connell & Messerschmidt (2005) state that hegemonic masculinity is a cultural "configuration of gender practice," which legitimizes the dominant position of men (Connell & Messerschmidt). These norms are so deeply rooted in our society that well-educated and employed men continue to conform to hegemonic masculine norms to remain dominant (Mushtaq et al., 2025; Smith et al., 2015). This can be a reason of finding no influence of father's education and working status in shaping unmarried men' s perception about domestic violence and traditional masculine traits. So, unsupported hypotheses don't mean social structure doesn't matter. Rather, they indicate acceptance of domestic violence in this group might be more broadly spread ideologically than expected

The family-related insights provide a clearer understanding of why some ideas have got support. Men's scores varied with their mother's job, education, and their experience with domestic violence. This suggests early family settings might be linked to later attitudes toward authority, conflict, and gender rights. This matches studies on Pakistani families which show family roles and gender hierarchies affect how partner violence is seen and accepted (Ali et al., 2021). It also aligns with research on violence across generations which links family violence to later attitudes supporting IPV (Eriksson & Mazerolle, 2015). Social learning also plays a part. People can adopt behaviors and justifications from watching them at home. Research shows that maternal education and empowerment have been linked with decreased acceptance of domestic violence and improved child health outcomes (Abreha & Zereyesus, 2020). As stated by Kabeer (2005) education can strengthen a mother's agency, which can then operate "against the grain" of patriarchal norms

The findings regarding education, profession, and organizational affiliation can be seen as partial and specific to certain areas instead of universally decisive (Table 5, 6 & 7). Respondents not affiliated with religious, political, student, or employee groups scored higher on several domestic-violence aspects and harmful traits of masculinity (Table 3). It has been suggested that men who engage with collective organizations may be exposed to alternative perspectives of talking about things, being held accountable through their peers, and being provided with structured gender education that can lessen their support of violent beliefs. Many religious and political organizations within Pakistan will also provide frameworks for behavior and community regulation which may reduce open support of abusive beliefs, although they do not necessarily challenge patriarchal ideology (Mshweshwe, 2020).

The differences in the results show that organizational affiliation is context-based rather than a blanket level of safety. Likewise, educational findings were not as clear-cut with respect to the possessiveness and controlling behavior of different groups of participants; for example, bachelor's degree holders were found to be more likely than other groups to exhibit possessive and controlling behaviors. This may indicate that increased educational attainment has not challenged the patriarchal ideology that

pervades society concerning how a man should control his wife or partner in an intimate relationship. However, it could also indicate that increased educational attainment does present an opportunity to disrupt or change attitudes or beliefs about the use of overt forms of physical or verbal abuse (Jakupcak et al., 2002). Therefore, it is conceptually wrong to claim employment or education either protects against or causes harmful masculinity based on these results. A more accurate understanding is that some institutional settings may influence specific beliefs about entitlement and control without fully changing masculinity ideology itself. This distinction helps clarify the distinction between perceptions, beliefs, and behavior: this study measured perception and beliefs, not actions of abuse.

According to Table 8, the first-born respondents scored highest in possessiveness and controlling behavior compared to later births. This supports Adlerian theory of "dethronement" that first-borns may develop controlling behavioral traits to regain their former level of dominance because they think that they might have lost their parental attention after the arrival of other siblings (Marleau & Saucier, 2005).

The role of media-related preferences was also found to be important in shaping men's perceptions. Men who liked action films scored higher on views about financial abuse and harmful masculinity, which is not only consistent with hegemonic masculinity beliefs but also with effects of social learning. Bandura (2001) explains that media environments offer models that help people learn behavior scripts, assess social settings, and normalize certain actions. Where patriarchal authority is already socially accepted, repeated exposure to aggressive male control can strengthen existing views on power, honor, and control. It was found that media consumption may interact with existing gender norms, making some beliefs seem more valid or culturally accepted.

Overall, the pattern of accepted and rejected hypotheses shows that masculinity beliefs are the most stable explanation in this study. Meanwhile, socio-demographic factors have selective and inconsistent effects which change with context. This finding is important as it moves discussions from finding a single high-risk demographic to exploring how gender beliefs are socially reproduced across different groups. Socio-demographic predictors may differ because of a strong presence of patriarchal culture throughout Lahore regardless of socio-economic status, education level, or rural versus urban living conditions (Lakhiar et al., 2024). Researchers need to develop longitudinal sampling designs based on random probability sampling with multi-site samples (or possibly using mixed methods), which can provide potential explanations for the lack of impact of certain predictor variables while still highlighting the significance of toxic masculinity within the perpetration of gender-based violence.

5. CONCLUSION

This study investigated unmarried men's perceptions of various aspects of domestic violence and harmful masculinity traits. The findings showed that

stronger harmful masculinity beliefs consistently went along with greater acceptance of possessiveness, control, verbal abuse, financial abuse, and physical abuse. Patterns emerged based on the mother's employment status, education level, organizational affiliation, and profession, the child's order of birth, and the media they consume. However, in many cases, most of those background variables were not significant predictors of respondents' attitudes. One critical finding was that witnessing domestic violence is associated with higher scores on possessiveness and control, verbal abuse, and harmful beliefs about masculinity and therefore is a key indicator of the intergenerational cycle of violence (Eriksson & Mazerolle, 2015) and should be a priority in designing prevention programs. The non-significant relationship between rural–urban backgrounds and fathers' education levels indicates that patriarchal norms supporting domestic violence exist at all social class levels in Lahore. Interventions must not depend on demographic targeting alone but must also work toward addressing the ideological basis of harmful masculinity. The study examined unmarried men as a target group for gender-sensitive attitudes prior to marriage, whereas previous studies focused primarily on married offenders and survivors. The results from this study may help develop interventions at universities, workplaces, and in the media that work to develop gender sensitized attitudes and to promote critical evaluation of power-based concepts of masculinity. This study can be used to design training modules to promote healthy masculinity during boys' early socialization years to nurture gender-sensitive husbands, brothers, and fathers in the future.

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An Evaluation of the Role of Traditional Leaders in Water Resource Management in Mambu- Bafut, Cameroon.

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Abstract

The study evaluates the role of traditional leaders in water resource management in Mambu-Bafut, Cameroon, employing a descriptive, exploratory approach with 50 purposively selected respondents. Data was gathered through structured questionnaires and observations, and analysed using descriptive statistics. Key findings indicate that most participants "agree" or "strongly agree" that traditional leaders have instituted fines on those who throw waste into water catchment areas (mean score of 4.50 and standard deviation of 0.614), increase financial awareness of water management (mean score of 4.42 and standard deviation of 0.499), water availability, quality, and cost should be raised (mean score of 3.94 and standard deviation of 1.202) and building, operating, and maintaining water infrastructure (mean score of 3.94 and standard deviation of 1.202). The study highlights the relevance of traditional leaders and institutions' governance in managing water resources in Manbu-Bafut to enhance sustainability.

Keywords: Role, Traditional Leaders, Traditional Institutions, Water Resources Management
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1. INTRODUCTION

Water is the most essential natural resource for human survival (Israelova et al., 2023). It is employed in a range of applications and is essential to human socioeconomic development. Approximately 2.2 billion people worldwide currently need safe drinking water (World Health Organisation, 2025), and water-borne infections kill more than 18 million people each year in developing countries (Fimzole, 2020). Water resource

management is the strategic implementation of practices such as integrated watershed management, reservoir construction, irrigation systems, and wastewater reuse to ensure the efficient and sustainable use of water resources, as well as flood prevention and ecosystem protection (Meetei et al., 2023).

More than 30% of people in impoverished countries such as Cameroon lack basic access to clean drinking water (UNICEF, 2024). This dilemma is exacerbated by ageing infrastructure, increased urbanisation, and climate variability (Fonjong & Zama, 2023), all of which much outweigh the current, insufficient management capacity. According to research conducted in 2008, less than half of Cameroon's population has access to the country's water network, CAMWATER. Alternative sources contained high levels of microbial contamination (Fimzole, 2020). Poor drinking water quality is directly linked to health concerns and is primarily caused by microbial contamination, which is frequent in developing countries (World Health Organisation, 2023). It is critical to understand the risks and provide an appropriate treatment method (Fimzole, 2020). It is anticipated that 70% of the entire population has access to clean water, with 82% coverage in urban areas and 52% coverage in rural areas (UNICEF, 2024).

In Cameroon, just 43% of the population has access to basic sanitation facilities, with a significant difference between urban (58%) and rural areas (22%) (UNICEF, 2024). Over 450,000 Cameroonians were affected by a severe water crisis in 2024-2025 as a result of climate-related factors such as erratic rainfall and increasing flooding, particularly in the North and Far North regions (Tchindjang et al., 2025). Acute shortages are due to insufficient finance for infrastructure upgrades, inefficient water delivery, ineffective governance frameworks, and poor sanitation (Toumba et al., 2025). Because of these challenges, traditional leaders must be involved in the management of water resources in Cameroonian rural areas.

Traditional Leaders (TLs) in Cameroon are actively striving to close the gap between the government's centralised top-down approach and more local methods to water resource management in some places. This underlines the importance of implementing a distributed system for managing water supplies. According to Tantoh and Simatele (2017), Cameroon's water resource governance is primarily supported by this management system, which is centrally managed through the Ministry of Energy and Water Resources (MINEE) with TIs at the local level. This reveals poor top-down management of fresh water and other community resources (Mah, 2016). As project beneficiaries, TLs among local stakeholders play an important role in mobilising local resources for sustainability and implementing follow-up management measures (Chigwede & Nyirenda, 2025).

Local Traditional Authorities (LTAs) and communities are the target of development interventions in Cameroon (Beyonyi & Ile, 2023), but they are not represented or participating in water decision-making (Tantoh & McKay, 2020).To establish true sustainability, interventions must transition from top-down approaches to inclusive frameworks directed by the African Ministers

Council on Water (AMCOW) and the Global Water Partnership (GWP) strategic guidelines (Mutschinski & Coles, 2021). As a result, local initiatives led by so-called water development specialists are frequently insufficient to address the needs of the general public and rural inhabitants (Njoh, 2002). Given this, one of the recommended strategies for inclusive governance of Common-Pool Resources (CPRs) is to leverage existing authorities and institutions to accomplish long-term management of water resources (Baber, 2026). The inclusion of TLs frequently supports the government in implementing the most effective plans for the sustainable management of resources in local communities (Matsiliza, 2024).

Traditional authorities in Mmbu-Bafut have placed a high value on community engagement in community-related concerns, as community members typically pick what issues to solve and how. To support and energise a platform for gathering perspectives from multiple user groups, this study argues that strong traditional leadership, consistent devolution, and active rural community participation can lead to a people-centred, community-driven development process (Neba, 2025). Thus, this study evaluates the role of TLs in water resource management in Mambu-Bafut, Cameroon. The study specifically looks at (1) traditional leaders' participation in water resource management in Mambu-Bafut, (2) traditional institutions' participation in water resource management in Mambu-Bafut, (3) the functions of traditional institutions in water resource management in Mambu-Bafut, and (4) water resource management by traditional leaders in Mambu-Bafut. This study then proceeds with the literature review and theoretical framework, methodological issues, presentation of findings, discussion, and conclusion.

2. LITERATURE REVIEW

2.1 Functions of Traditional Leaders in Water Resources Management

Tantoh et al. (2021) report that Community-Based Management (CBM) operations in Northwest Cameroon are organised by powerful traditional chiefdoms with royal authority over Natural Resource Management (NRM), since regional norms and practices influence people's everyday resource use. TL involvement is the oldest and longest enduring Water Resource Management (WRM) strategy in Mambu-Bafut, Cameroon. As a result, local actors' social and power interactions shape the norms, values, and attributes that define a community (Tantoh et al., 2021). Male-dominated traditional leadership systems shape community micropolitics, human behaviour, and resource distribution (Tantoh et al., 2021). However, the dismal situations that women face can be attributed in part to male-dominated traditional leadership structures (Tantoh et al., 2021). Young people and women, who play crucial roles in most community development programs, are not allowed to express their opinions. For example, in the Bamenda Grassfields, the village head role is traditionally hereditary and subject to succession regulations (Mbuy, 2023). They are also highly valued, particularly because it is thought that they can converse with the gods (Lang, 2024).

According to Daneel (1996), Africans who lived before colonisation felt that their forefathers had established standards for how natural resources should be handled, and that obeying these laws would result in the loss of the land's bounty. In this way, village chiefs, who represent the gods, play a crucial role in WRM and communal development (Ghislain & Ngam, 2023). Traditional chiefs are highly appreciated for their attractiveness, knowledge, and ability to make popular judgments (Rooney & McKenna, 2022). The traditional Council (TC) has made it easier to make WRM decisions and impose fines on defaulters. The TC works with Village Development Associations (VDAs) to design and approve community development initiatives (Che, 2018). This is because rural communities are more likely to initiate self-help service delivery using a decentralised approach supported by the decentralised service delivery framework, and the success of WRM programs depends on local actors' planning and accountability (Tantoh et al., 2021).

For example, mobilisation, participation by all resource users, active community engagement (community work, financial contribution, and decision-making), and respect for TLs all led to the success of Rural Water Delivery Systems (RWDSs) in Njimkang and Baicham (Tantoh et al., 2021). Residents' inability to perform regular maintenance on water infrastructure is a major issue in these areas. Traditional leaders contribute significantly to water resource management by fostering Community-Based Natural Resource Management (CBNRM), local government, and social cohesion (Matsiliza, 2024). Many rural communities, particularly in Africa, rely on TLs to manage both land and water resources, bridging the gap between state-mandated statute legislation and customary practices (Matsiliza, 2024).

2.2 Traditional Water Resources Management (TWRM)

According to Sulemana (2013, p. 19), the term "tradition" or "customary practice" is used here to distinguish between what people consider to be their established practices and rules governing access to natural resources such as water and land, and outside interventions that propose new rules and regulations that people are unfamiliar with. Every ethnic group in the world has its unique traditions (Gans, 1979). Most rural tribes define and reinforce their worldviews through tradition or customary standards (Latham & Chikozho, 2004).TWRM strategies have a solid foundation and are still commonly utilised today. This refers to the indigenous and customary practices of mobilising the community, involving existing community associations in project execution and the government (Neba & Tanga, 2025a), to develop, distribute, and sustain water. Research documents how these strategies continue to shape water governance (Neba & Tanga, 2025b). This body of research demonstrates that TWRM is widespread in rural areas, usually effective, and that some of these systems have been used for many generations. These systems frequently transcend generations and represent indigenous ecological knowledge (Fanteso & Yessoufou, 2022), because these customary practises were decentralised and deeply embedded in local culture,

many successfully survived colonial and postcolonial forces (Sowman & Hasler, 2009).

Most rural livelihoods are dependent on natural resources like land and water, and people's ability to pursue various livelihood options is determined by their behaviours (Sulemana, 2013). People in rural areas who rely on water for a living create authoritative and cooperative partnerships to acquire and maintain water infrastructure (Bisung, 2021). TWRM systems, particularly in dispersed and isolated rural settlements, offer a feasible alternative to improve the quality of life for individuals who live in rural areas who are now facing severe water scarcity (Shearer, 2003). TWRM may face competition from newer water sources. This is due in part to the fact that, while new statutory measures do not apply to all societal sectors, previous water restrictions will continue to apply (Sulemana, 2013). Unfortunately, legislatures continue to enact weak statutory legislation. Legislative duties do not apply in these predominantly rural areas of Africa, where cultures continue to function according to their traditions.

Cameroon has "local customary law" and "formal state law," two forms of norms that manage society, referred to as "legal pluralism" (Alima, 2025). The laws may conflict at times. Legal pluralism has been proven in case studies from Tanzania (Fluet et al., 2006), Zimbabwe (Maraire, 2024), and Blahpane village on Bali Island (Sulemana, 2013). Legal pluralism is essential for Sustainable Water Resource Management (SWRM) (van Koppen, 2017). Two factors contribute to this: first, state law is rarely applied in most rural areas, and second, people are used to customary law, which predates Integrated Water Resource Management (IWRM). This method of thinking is founded on the belief that existing procedures and the regulations that govern them should not be abandoned in favour of more current management approaches.

2.3 Theoretical Framework

This study is based on the concept of decentralisation. According to the decentralisation paradigm, local groups such as communities and TLs are given more decision-making authority, executive power, and administrative competence (Agrawal & Ribot, 1999; Crook & Manor, 1998). Decentralisation reduces the size of a central government by delegating some functions to other branches of government, which remain accountable to the government. However, the central government usually retains the ability to monitor, revoke, or remove entrustments, creating a barrier to meaningful community engagement and ownership (Bhoso, 2013). Because all authorities are centralised in the TC, the decentralisation system limits TLs to the obligations specified by the state, potentially prohibiting full involvement in WRM. Ribot's (2004) focus and arguments emphasise the central government's continued hold on power and authority, albeit to some extent devolved. They further argue that decentralisation may not be a process that promotes increased community involvement, but rather an administrative augmentation of the state's local activities (Ribot, 2004).

Decentralisation in Cameroon, as stated in the 1996 Constitution (Epongo, 2023; Nzofoa, 2023; Munge & Pascal, 2024), seeks to give local leaders greater control over the central government. Although the legal structure is mostly in place, there are certain obstacles to its execution, such as a lack of funding and insufficient local ability (Eteme & Mountouzache, 2024). As a result, residents have little say in local matters, and many decisions are still taken at the central government level. Decentralisation of state power is contentious due to the reasons advanced by numerous writers; nonetheless, some believe it eliminates colonial imbalances and increases local government effectiveness, community involvement, and service delivery (Bhoso, 2013).

The Directorate of Rural Development (DRD)was established within Cameroon's Ministry of Agriculture and Rural Development (MINADER) (Mbangari & Fouepe, 2021), assuming responsibility for CNRM from TIs. This approach is perceived as an attempt to usurp and weaken traditional leaders' authority (Makumbe, 1998; Masendeke et al., 2004). Because local livelihoods rely on natural resources, rural populations in developing nations are frequently excluded from public decision-making processes and considered as subordinates rather than citizens, according to Mamdami (1996) and Ribot (1999 in Ribot (2006).

A successful decentralisation approach must also include allowing communities to influence NRM decisions to reform, enfranchise, and strengthen TIs by giving them meaningful representation and control over substantial natural resources (Adam, 2021). The state's role in collaborating with existing local Traditional Institutions (LTIs), the definition of control areas, and the application of which criteria, particularly in terms of natural resource exploitation between TIs and the state, are all critical issues in the decentralisation process. Furthermore, TIs risk being sidelined or subservient to the state as a result of this process, as decentralisation theory concentrates on how the central government distributes authority to lower levels within its structures while saying little about their clearly defined positions. To achieve SDG 6, which focuses on ensuring the availability and long-term management of water and sanitation for all (van Koppen, 2024), in Mambu-Bafut, a decentralised approach to CWRM will promote more sustainable resource use and exploitation at the local level.

3. METHODS

3.1. Study Area

Bafut is in Northwest Region of Cameroon, north of the Mezam Division (Neba, 2025), between longitudes 09º58´ 10º1Í E and latitudes 06º05´-06º11´ N, (Tita et al., 2015) (Fig. 1). It is located approximately 20 kilometers northwest of Bamenda, the regional capital, and occupies more than 340 square kilometers (Council Development Plan (CDP, 2011), with a population of over 129,000 inhabitants (CDP, 2011). Bafut is in a high basin bounded to the west by the Oshie-Ngie range and to the east by the

Bamenda, Banso, Oku, and Njinikom high plateaus (Suh, 2021). With an average annual precipitation of 2657.2 mm, there are two distinct seasons: the long rainy season (March to November) and the dry season (December to February) (Tita et al., 2015). Atibita et al. (2021) reported an average annual temperature of 24ºC, with lows of 22.3ºC from August to November and highs of 26.7ºC in February. Bafut's natural vegetation is grassland savannah, with grass intermingled with deciduous shrubs and occasional stunted trees (Tita et al., 2015; Tamfuh, 2017). In contrast, raffia bushes and oil palms rule the swampy lowlands (Letouzey, 1980). Human activities, particularly farming (Neba, 2025) and the needs of a fast-growing population, have significantly altered this natural vegetation (Acho-Chi, 1998). The River Mezam and its tributaries flow through the Bafut Subdivision (Tamfuh, 2017). The main river and its tributaries provide a sparse and angular drainage pattern (Tamfuh 2017).

During the dry season, vegetables are only grown in the lowlands near the banks of the Mezam River, the main river that passes through the Bafut Municipality and provides irrigation water (Tita et al., 2015). Flood irrigation is also employed, but manual watering with cans is more prevalent. Vegetables are planted year-round in Bafut to ensure a consistent supply, but production is boosted during the dry season, when it is more profitable (Tita et al., 2015). Most farmers have both a corporate garden and a personal garden for local consumption, which is typically placed a significant distance from the house. The investigation was carried out in Mambu-Bafut. The village is one of the administrative divisions of the Bafut Fondom (traditional kingdom). In terms of administration, Mambu is a second-class traditional chiefdom, reporting to the first-class chiefdom of Bafut, or "Fon"[1] (traditional ruler or chief). The indigenous people in the community under investigation are hunters and farmers who use rainfall and borehole water to irrigate vegetables throughout the hamlet. This enables the researchers to conduct their investigation in Mambu-Bafut, Cameroon.

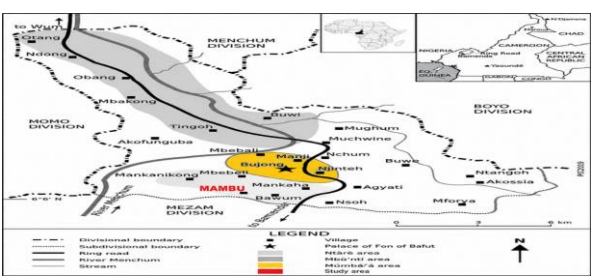


Figure 1: Map of Bafut, Showing Mambu **Source:** Neba (2025)

3.2 Research Design

[1] "Fon" is the appellation of a traditional ruler in the Cameroon grassfield, simply known as chief in English.

The study used a descriptive, exploratory approach to evaluate indigenous participatory water governance in Mambu-Bafut, Cameroon, emphasising how traditional authorities manage vital water sources to minimise regional shortages and safeguard fragile springs. Between March and June 2023, the researchers mapped out three primary water sources serving the community, including "Nki-Mateugeh[2]" (spring), a vital natural spring that local populations historically rely on for daily domestic usage; "Nki-Wah[3]" (spring), a restored and protected spring project donated by the Mambu Social, Cultural, and Development Association (MASCUDA) to improve community access to potable water; and "Asong[4]" Quarter Water Project, inaugurated in January 2023, which includes a (5,000) litre reservoir designed to provide safe, sustainable water to over (3,000) residents throughout the dry season (Plates 1, 2, and 3)

3.3 Study Population, Sample Size and Sampling Procedures and Data Sources

The study population consisted of all 50 members of the Mambu-Bafut traditional council. The emphasis entirely on TC members is justified by their statutory duty as primary guardians of customary laws and indigenous knowledge regarding NRM, such as water and land. This methodological barrier is obviously consistent with the study's objectives, which are to analyse the roles of TLs in WRM in Mambu-Bafut. TC members frequently work with the "Fon" to construct institutions such as the "Kwifor[5]" (Council of Elders or Titled Royals), a male-oriented highest secret society of the land, which controls the local management of land and water in Mambu-Bafut. The evaluation was focused on a census of Mambu-Bafut TC members only. This research targets the governance and traditional administrative structure, often called the “Kwifor”, who assist the “Fon” to ensure high-confidence data on LTIs without larger population sampling flaws.

The evaluation used a purposively selected sample of 50 respondents. According to the Mambu TC Secretary, this sample includes Mambu TC members who have leadership roles in local projects and members of the “Kwifor”. Mambu was purposively chosen for the study because, after decades of living without access to potable water, which harmed the community, the TLs actively participated in the development and management of the village's water supply (Nki-Mateugeh and Nki-Wah" (spring) and the Asong Quarter Water Project. The 50 members of the Mambu TC (26 men and 24 women) were also purposively chosen for the study. This is because traditional authorities act as an alternative source of power and community mobilisation. Because the study objectives typically include developing

[2] Nki-Mateugeh “Nki means water in Bafut, and Mateugeh is the name of the person who founded the spring”, and the spring had been named after the individual

[3] Nki-Wah “Nki means water in Bafut, and Nah is the name of the person who founded the spring,” and the spring had been named after the individual.

[4] Asong is the name of a quarter in Mambu-Bafut

[5] Kwifor “council of elders or titled royals”

practical, community-based solutions to water resource management (such as protecting spring catchments and preventing resource depletion), council members and the “Kwifor” of Mambu-Bafut are the best representatives to explain how TLs protect water as a shared resource.

Due to the limited target population, this research employed purposive sampling to ensure that participants were selected based on qualities relevant to the study's objectives rather than at random, allowing for a comprehensive understanding of the issue. Purposive sampling is a type of non-probability sampling technique in which participants are selected because they have characteristics that you want in your sample (Nikolopoulou, 2023). This sampling approach, also known as judgmental sampling, relies on the researcher's judgment to identify and select the individuals who will provide the most necessary information.

The study included both primary and secondary data sources. Primary data was collected from study participants using a structured questionnaire and observational guide. The evaluation instrument was divided into the following five sections. The first section of the instrument examined the respondents' socio-demographic data (such as sex, age, position in the Mambu-Bafut TC, educational level, and marital status). The second addressed concerns relating to the first study aim of "traditional leaders' participation in WRM in Mambu-Bafut". The third section tackles concerns about the second objective, "traditional institutions' participation in WRM in Mambu-Bafut," like the "Kwifor". The fourth segment concentrated on aim three, "the functions of traditional institutions in WRM in Mambu-Bafut," while the fifth section addressed objective four, "water resource management by TLs in Mambu-Bafut."

To analyse the role of TLs in water resource management in Mambu-Bafut, Cameroon, participant observation (specifically, a participating observer approach) was used to collect qualitative data from research participants. The researchers had to immerse themselves in the community’s daily life to experience and document how TLs govern water resources. During the observations, TC members, "Kwifor" members, and LWM committees serve as major guides. The researchers had to attend and watch village council meetings, paying special attention to how water resource decisions are discussed, legislated, and enforced. The researchers had to walk with local leaders to map out culturally protected water catchments (such as the Asong Quarter Water Project, "Nki-Mateugeh" and "Nki-Wah” springs), as well as observe the physical state of the water supply and any traditional demarcation (for example, sacred forests around water sources). The researchers had to accompany community members on normal water-collection trips or seasonal watershed cleanup activities. This enables the researchers to observe water access firsthand and engage in natural conversations with resource users. A notebook or jotter was used to write down field notes, and snapshots were captured using smartphones in the presence of the "Fon" of Mambu-Bafut, as well as other TC members and community members, in protected water catchment areas.

Participant observation offered vital qualitative data that supported the analysis of TWRM in Mambu-Bafut. By watching customary practices, researchers were able to document practical dynamics that official surveys and interviews frequently overlook, bridging the gap between statutory water regulations and TWRM tactics. Secondary data were acquired from both public and unpublished sources, including books, journal articles, online resources, and library records. The qualitative data collected through observation were triangulated with data received through standardised questionnaires, assuring the validity and credibility of research findings. The review of current literature on several topics helps in the development of research questions on areas for improvement.

3.4 Data Collection

Three researchers and one community volunteer spent a month in the field, administering the observation guide and structured questionnaire to 50 members (both men and women) of the Mambu TC and members of the "Kwifor". To protect the subjects and the study's integrity, necessary ethical approval was obtained. The Divisional Officer (DO) for Bafut and the "Fon" of Mambu approved the study. Every Mambu TC member and members of the "Kwifor" were fully informed of the research objectives, the nature of their involvement, and the potential risks and advantages of doing so. Participants were also informed that they might exit the research at any moment without consequence. This ensures that their participation was completely voluntary and maintains their independence. Participants were told that their responses would be completely secret and that their names would not appear in any published conclusions. To safeguard their privacy, all personally identifiable information would be removed or coded, making it difficult to link comments back to participants. This commitment was to ensure that anonymity protects participants while simultaneously encouraging truthful and open responses, both of which are crucial to the study's validity.

3.5 Validity and Reliability of Instruments

To guarantee the instrument's validity and reliability, the researchers pre-tested the instrument (structured questionnaire and observation guide) in the study area in February 2023, before beginning the actual data collection between March and June 2023. This was accomplished by administering the questionnaire to a small sample of the target population. This was used to identify confusing, biased, or double-barreled questions and was corrected before the actual research, assuring validity and validating that questions were understood as intended and that the constructs were measured correctly. To ensure reliability (trustworthiness), the data from structured questionnaires and observation were triangulated because observation allows the researchers to see behaviour in its natural context, capturing actions or dynamics that participants may not be aware of or may omit on a structured questionnaire, while structured questionnaires provide standardised data and direct insight

into participant attitudes, demographics, or self-reported beliefs ensuring (credibility and dependability) of the research findings.

3.6 Data Analysis

The data was analysed using descriptive statistics in Microsoft Excel version 13 and the Statistical Package for Social Sciences (SPSS) version 25.0. The data was examined, cleaned, entered into a computer-based Excel spreadsheet, and coded. The coded data were then imported into SPSS and evaluated, with the results displayed as frequency tables and percentages. To examine data on respondents' socio-demographic characteristics, questionnaire items were provided with "Yes" and "No" alternatives, and the findings were given in frequency distribution tables and percentages, which were then interpreted. For objectives 1, 2, 3, and 4, respondents were requested to use a five-point Likert scale (Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2, Strongly Disagree = 1) to compute the mean and standard deviation, which were then presented in a table and interpreted.

4. RESULTS

4.1. Socio-Demographic Characteristics of Respondents

Results in Table 1 on sex distribution of study participants revealed that most of the participants were men, 26 (52%), somewhat more than women, 24 (48%). This demonstrates that the Mambu TC has more men than women; the difference is not significant. It is vital to understand why women are under-represented in WRM in Mambu-Bafut, despite their critical role in water issues.

According to the findings, most participants, 19 (38%), are between the ages of 20 and 25, with those over the age of 36 coming in second at 15 (30%). Another 9 (18.0%) of participants were aged 26 to 30, while 7 (14%) were aged 31 to 35. Most Mambu-Bafut TC members are young and have the potential to make significant contributions to the community's WRM. Data from participants' observations shows that:

His Royal Majesty (HRM) Mbah Wanki Ambeche II, the “Fon” of Mambu-Bafut, is young and energetic, and has emerged as a major force in local community development because of his youthful leadership (Plate 4). As with many younger rulers in the Bafut “Fondom” or village, he frequently promotes youth empowerment and community involvement as pillars of his reign (Field Observation, 2023).

Results on marital status suggest that most participants, 34 (68%), were married, 7 (14%) were single, and up to 6 (12%) were widowed, while 3 (6%) were divorced. The community's high marriage rate emphasises the importance of long-term water management solutions, as most couples use water for residential and agricultural purposes on their farms and in their gardens.

Findings on the educational level of study participants revealed that most participants, 23 (46%), have a secondary education, followed by those with a

primary education, 16 (32%), and those with higher education, 11 (22%). This demonstrates that literate and well-educated community water management participants have higher degrees of environmental awareness and a stronger ability to provide practical, long-term, and technical solutions for managing water resources.

The results on position show that 34 (68%) of participants were only members of the Mambu TC, and 7 (14%) of participants were "Kwifor" members, while 6 (12%) were quarter leaders, and 3 (6%) were secretaries for several Mambu-Bafut TC commissions.

Table 1: Percentage and frequency distribution of Socio-demographic characteristics of study participants

Variables	Frequency	Percentage
Sex		
Male	26	52
Female	24	48
Total	50	100
Age	Frequency	Percentage
Between 20-25	19	38
26-30	9	18
31-35	7	14
36 and above	15	30
Total	50	100
Marital status	Frequency	Percentage
Married	34	68
Single	7	14
Widows	6	12
Divorce	3	6
Total	50	100
Educational level	Frequency	Percentage
primary education	16	32
Secondary education	23	46
Higher education	11	22
Total	50	100
Position in the community	Frequency	Percentage
Traditional council member	34	68
Kwifor member	7	14
Quarter leaders	6	12
Secretaries of other commissions	3	6
Total	50	100

Source**:** Authors' calculations

4.2 Traditional Leaders' Participation in Water Resources Management in Mambu Bafut

Table 2 shows that most participants "agree" or "strongly agree" that traditional leaders in Mambu-Bafut have developed new laws and regulations

(mean score of 4.18 and standard deviation of 0.748). This implies that the community recognises their TLs as active custodians who shape public policy, modernise rules, and maintain order rather than just passive observers of ancient customs.

Results further show that most participants "agree" or "strongly agree" that traditional leaders have provided water in various forms in some parts of the village (mean score of 4.00 and standard deviation of 0.881). This suggests that despite potential shortfalls from the central government, TLs successfully act as key change agents, stepping in to fulfil basic community needs.

Findings indicate that most participants disagree that traditional leaders have organised seminars discussing water resources management strategies (mean score of 2.66 and standard deviation of 1,394) in Mambu-Bafut. This suggests that because TLs are seen as inactive in organising such seminars, the community may rely more heavily on external NGOs (Japan Water Forum) or local development associations (MASCUDA) for water-related awareness and infrastructure, and Cameroon Leaders Empowerment Initiative (CamLEI).

The findings further indicate that most participants disagree that TLs have trained experts for the village's water treatment (mean score of 2.42 and standard deviation of 1.56). This highlights an urgent need for government interventions, external training programs, or the hiring of qualified water treatment experts to support TLs.

Data from participant observation further supported this objective by documenting the presence of the Fon of Mambu-Bafut on the day of the inauguration of the "Asong" water project on January 16th, 2023, as part of a large-scale community water project led by the Japanese Water Commission (Plate 5).

The Asong water catchment has received great praise from the Fon, HRM, Mbah Wanki Ambeche II of Mambu-Bafut. The Asong water catchment project includes water hygiene and conservation training, tree planting, a laundry slab, and a water reservoir capable of retaining up to 5,000 litres of water and feeding over 3,000 people in the hamlet and surrounding communities. During the site's inauguration, the Fon (chief) led dozens of joyful people. The Fon, the traditional council, and the "Kwifor" enforce customary laws that restrict farming or logging near vital water catchment areas, thereby preserving natural reservoirs like the "Asong" water catchment from contamination. The Fon and the members of the "Kwifor" emphasised the need to enforce financial fines awaiting defaulters (Field Observation, 2023).

Table 2: Traditional leaders' participation in water resources management in Mambu-Bafut

Items	Sample	Mean Scores	Standard. Deviation
They have developed new laws and	50	4.18	.748

regulations			
They have organised seminars on water resource management	50	2.66	1.394
They have provided water in many forms in some areas of the village	50	4.00	.881
They have trained experts for the treatment of water in the village	50	2.42	1.566
Total	50		

Source: Authors' calculations

4.2.2 Traditional Institutions' Participation in Water Resources Management in Mambu-Bafut

Table 3 shows that most participants "agreed" or "strongly agreed" that traditional institutions in Mambu-Bafut have established roles regarding fines for the discharge of water waste (mean score of 4.28 and standard deviation of 0.904). This implies that residents of Mambu-Bafut respect the traditional authorities' rule and regard their punitive measures (fines) as valid, binding, and authoritative.

Results indicate that most participants were neutral about whether these institutions have built roads to access clean drinking water (mean score of 2.78 and standard deviation of 1.283). This suggests that participants may not be aware of the road projects or may have mixed feelings about footpath maintenance leading to water catchment areas and about road construction.

The results revealed that most participants agreed that traditional institutions have established committees to maintain the water supply (mean score: 3.44; standard deviation: 1.232). This implies that most study participants are aware of the existence of these committees and their activities in WRM in Mambu-Bafut.

The findings indicate that most participants agree that they have educated the villagers about wastewater management and penalties to be paid (mean score 3.58 and standard deviation of 1.230). This shows that, regarding wastewater management and penalty enforcement, information is actively being spread to the residents of Mambu-Bafut.

Table 3: Traditional institutions' participation in water resources management in Mambu-Bafut

Items	Sample	Mean Score	Standard Deviation
Have established roles for fines for water waste discharge	50	4.28	.904
Have built roads to access good drinking water	50	2.78	1.282
Have put in place committees to maintain the water supply	50	3.44	1.232
Educate the villagers on wastewater mismanagement	50	3.58	1.230
Total	50		

Source: Authors' calculations

4.3 Functions of Traditional Institutions in Water Resource Management in Mambu-Bafut

Table 4 indicates that, on average, participants disagree that traditional institutions had made water treatment and storage a subject in community schools (mean score of 2.36 and standard deviation of 1.258). This indicates a clear and collective agreement among participants that this specific educational activity did not take place in Mambu-Bafut.

Results revealed that most participants disagree that traditional institutions have made it easier to collect water taxes in the village (mean score of 2.64 and standard deviation of 1.241). Consequently, relying on traditional institutions may be creating administrative disorder, leading to non-compliance by residents of Mambu-Bafut, or causing disorder and confusion among residents. Policymakers should consider modernising the billing system by directly involving households or improving the transparency of the tax collection process regarding WRM in Mambu-Bafut.

The findings further that most participants "agree" or "strongly agree" that these traditional institutions have provided good storage water forms (mean score of 3.54 and standard deviation of 1.216). This finding implies that TIs are widely perceived as successful and reliable custodians of water security in Mambu-Bafut.

Results show that most participants "disagree" or "neutral" that these traditional institutions have provided technicians for improved water supply (mean score of 2.30 and standard deviation of 1.216). This implies that without localised technical assistance, basic wear-and-tear or minor mechanical issues can result in long-term failure of water supplies in Mambu-Bafut.

Table 4: Functions of traditional institutions in water resource management in Mambu-Bafut

Items	Sample	Mean Score	Standard Deviation
Have provided technicians for a better water supply	50	2.30	1.147
Have made water treatment and storage a subject in community schools	50	2.36	1.258
Have facilitated the collection of water taxes in the village	50	2.64	1.241
Have provided good storage water forms	50	3.54	1.216
Total	50		

Source: Authors' calculations

4.2.4 Functions of Traditional Leaders in Water Resource Management in Mambu-Bafut

Table 5 revealed that most participants "strongly agree" that traditional leaders have instituted fines on those who throw waste into water

catchment areas (mean score of 4.50 and standard deviation of 0.614). This suggests that traditional leaders play an active, accepted role in local water governance and environmental policing in Mambu-Bafut.

The results further revealed that most participants “strongly agree” that these leaders should increase financial awareness of water management (mean score of 4.42 and standard deviation of 0.499). This suggests that participants feel that financial strategies and the true economic value of water are not being effectively communicated by current leadership in WRM in Mambu-Bafut.The findings indicate that most participants “agree” and “strongly agree” that water availability, quality, and cost should be raised (mean score of 3.94 and standard deviation of 1.202). This suggests that participants broadly feel that current water services need intervention, whether that means paying more to guarantee better quality/delivery, or improving infrastructure to make water more reliably available in Mambu-Bafut.

The results show that most participants “agree” and “strongly agree” that local leaders are playing an important role in building, operating, and maintaining water infrastructure (mean score of 3.94 and standard deviation of 1.202). This suggests that when participants believe their leaders are heavily committed to maintaining infrastructure, it fosters local cooperation, the willingness to pay for water services, and stronger community trust.

Data from field observation revealed that.

Mambu's traditional ruler has enclosed the area around the water sources and barred all human activity. Only trained water technicians are permitted to enter locations where cleaning, water treatment, or other management tasks are carried out. For example, in the “Asong” water catchment area, traditional leaders, particularly the "Fon", traditional council and the Kwifor, collaborate with local Non-Governmental Organisations (Agro-complex Farming Common Initiative Group (AGFAG), to promote sustainability through environmental conservation, education, and active participation (Plates 6 and 7). These programs demonstrate a collaborative approach in which traditional institutions and local leaders in Mambu-Bafut actively engage to manage water resources and promote community health (Field Observation, 2023).

Table 5: Functions of traditional leaders in water resource management in Mambu-Bafut

Items	Sample	Mean Scores	Standard Deviation
Raising awareness on water availability risks, quality and cost	50	4.32	.471
Building, operating, and maintaining wat infrastructure	50	3.94	1.202
Sensitisation on financial awareness in w management	50	4.42	.499
Fines should be paid by individuals who throw waste into water bodies	50	4.50	.614
Total	50		

Source: Authors’ calculations

5. DISCUSSION

The researchers evaluated the role of traditional leaders in water resource management in Mambu-Bafut, Cameroon. The study examined: traditional leaders' participation in water resource management in Mambu-Bafut, traditional institutions' participation in water resource management in Mambu-Bafut, traditional institutions' functions in water resource management in Mambu-Bafut, and traditional leaders' participation in water resource management in Mambu-Bafut.

Findings on traditional leaders' participation in the management of water resources in Mambu-Bafut revealed that they have created new laws and regulations, and provided water in various forms in some parts of the village. This means that traditional leadership is still a powerful, proactive force in rural water governance and community-based natural resource management in Manbu-Bafut. The findings supported those of Sulemana's (2013) research into the role of traditional authority in water resource management in Binaaba, Bawku West District. The study discovered that customary laws control water resource management. Traditional chiefs oversee all water-related matters. They were in charge of establishing the rules controlling water resources, defining specific areas around water sources, dealing with offenders, and resolving problems. They sometimes perform these tasks alongside the entire community. Traditional water management systems have also been shown to be quite effective in sustaining food production because everyone has access to water. The findings differ from those of Kapfudzaruwa and Sowman's (2009) study on whether there is a role for traditional governance systems in South Africa's new water management regime. The research findings show that both state and traditional governance systems are important for water resource management in the studied areas (Kapfudzaruwa & Sowman, 2009). However, the management of water resources is primarily led by state-driven policies that are founded on statutory legal frameworks (Kapfudzaruwa & Sowman, 2009). Traditional governance systems, including customary laws and cultural and religious traditions, play a significant role in helping water user groups achieve their goals (Kapfudzaruwa & Sowman, 2009). Failure to acknowledge and embrace features of these traditional governance systems may jeopardise the government's capacity to meet the goals of the National Water Act (Kapfudzaruwa & Sowman, 2009). Decentralisation theory distinguishes between deconcentration (delegating administrative powers to local branches of central government) and devolution (transferring true decision-making power to local actors). The Mambu-Bafut findings show a de facto devolution, with traditional leaders acting as autonomous managers rather than state agents.

Results on traditional institutions' participation in water resource management in Mambu-Bafut revealed that these institutions have established roles regarding fines for the discharge of water waste, have put in place committees to maintain water supply and have educated the villagers about water mismanagement and the penalties that must be paid. This suggests that

traditional punishments and fines are widely respected, serving as an extremely effective deterrent to pollution or mismanagement of shared water resources. These findings are consistent with those of Emiru's (2010) study on the role of traditional institutions in water resource governance in the Borana lowlands, southern Ethiopia. The findings revealed that the Borana water management system is a customary institution that ensures equal access to water (Emiru, 2010). *"Confi,"* the creator and overseer, *"Chora Ella,"* the management council, and *"Aba Herrega,"* the daily supervisor, comprise the three key parts of the management body (Emiru 2010), with clearly defined roles and obligations to ensure that water resources are used peacefully and in the long run. Decentralisation theory emphasises delegating decision-making, management, and regulatory functions from the central government to local stakeholders.

Results on the roles of traditional institutions in water resource management in Mambu-Bafut revealed that these institutions have provided good storage water forms. This indicates that traditional institutions (chiefs, traditional councils, and the kwifor) effectively enforce customary laws, maintain catchment areas, and establish seasonal restrictions to limit water depletion. These findings validated Bulengela's (2024) study on rethinking the role of institutions in water resource governance in Tanzania: What is still missing? demonstrates that these traditional and community-owned institutions ensure equitable use of water resources, reduce resource-based conflicts within and between pastoralist communities, and improve livestock development in the area. Regulation of seasonal water use and the ability to deal with recurring water shortages are further advantages (Bulengela, 2024). Decentralisation strengthens local communities while also enhancing sustainability, service delivery, and participation by shifting responsibility for water management from central authorities to local institutions.

Findings on the roles of traditional leaders in water resource management in Mambu-Bafut revealed that those who throw waste into water bodies should pay fines, that financial awareness of water management should be increased, and that water availability risks, quality, and cost should be raised, as well as building, operating, and maintaining water infrastructure. This implies that traditional authorities have the social power to implement protective water rules in Mambu-Bafut. The findings corroborate those of Osei and Asantewa (2025), who conducted a study on traditional leadership, indigenous knowledge, and environmental conservation in Ghana. A content analysis. Their findings demonstrated that traditional authorities, including chiefs, clan heads, and traditional priests, serve as custodians and agents of indigenous knowledge, playing a critical role in enforcing natural resource management techniques in indigenous cultures like Ghana (Osei & Asantewa, 2025). Decentralisation theory, as applied to Mambu-Bafut, enables traditional leaders to act as local water stewards, transitioning from customary oversight to proactive management. Sustainable water management in Mambu-Bafut involves the integration of traditional methods with modern approaches, as well as enough financial resources and enhanced institutional coordination.

6. CONCLUSION

Traditional leaders and institutions continue to be active in the Mambu-Bafut water resource management practices. Traditional leaders' participation in water resource management in Mambu-Bafut has established new laws and regulations, and provided water in various forms in some parts of the village. Traditional institutions in Mambu-Bafut have created committees to maintain the water supply, established roles for fines for water waste discharge, and educated villagers about water mismanagement and its consequences. Traditional institutions have provided suitable water storage forms in Mambu-Bafut, while traditional leaders in water resource management in Mambu-Bafut have facilitated sanctions (financial fines) for those who throw waste into water catchment areas, increased financial awareness in water management in Mambu-Bafut, and raised water availability risks, quality, and cost among community members, as well as building, operating, and maintaining water infrastructure. The study highlights the relevance of traditional leaders' governance in managing water resources in Manbu-Bafut to alleviate water scarcity, increase efficiency, and promote equity in the community.

7. LIMITATIONS AND FURTHER RESEARCH

Evaluating the role of traditional leaders in water resource management in Mambu-Bafut, Cameroon, using a descriptive, exploratory approach and a small sample of 50 participants, has major generalisability concerns. A sample of 50 participants does not have the statistical capacity to represent the entire population of Mambu-Bafut, much less the Northwest Region of Cameroon. We recommend that more research be conducted in a different community, with a mixed approach and a larger sample size, in order to generalise the findings nationally and globally.

Descriptive analysis focuses on what is happening, but it cannot demonstrate cause-and-effect linkages. For example, evidence may reveal that traditional leaders enforce water catchment protection, but this does not establish that their leadership is the only cause of improved water quality. According to the findings, the study should be conducted in another community utilising the Propensity Score Matching (PSM) technique. This statistical technique generates extremely comparable groups. You can compare catchments governed by traditional leaders to similar catchments without traditional leadership. This isolates the "leadership" variable, demonstrating its direct impact. Again, Participatory Action Research (PAR) should be performed with direct participation from community representatives and traditional structures in order to benchmark local knowledge and governance structures within catchment management plans. This will guarantee that catchment management plans are inclusive, realistic, and sensitive to indigenous knowledge and current customary water tenure.

The study's findings cannot be applied outside the study context since the limited sample size of 50 traditional council members limits

generalisability, due to cultural differences and dual government systems. Relying on only 50 traditional council members is statistically insufficient to represent the entire population. Such a tiny sample size risks introducing sampling bias and failing to capture the different experiences of the larger community. The study suggests that another study be conducted with a bigger sample size to improve generalisability beyond the particular context.

The study's purposive and institutionally restricted sample of 50 traditional council members in Mambu-Bafut is limited by intrinsic biases, statistical reliability constraints, and the exclusion of critical marginalised perspectives in Community-Based Water Resource Management. Purposive sampling focuses on those in recognised roles, which might bias data toward maintaining the status quo and official institutional narratives rather than documenting objective, ground-level reality. The sample is limited to council members, which automatically marginalises the experiences of women, youth, and non-titled citizens in Mambu-Bafut water resource management. This group of individuals are frequently the major water managers and collectors at the household level. Focusing primarily on traditional leadership misses the important roles played by other overlapping stakeholders, such as formal city councils, Village Development Associations (VDAs), and Water Management Committees (WMCs). The report suggests that a study be conducted with all community members and stakeholders in another community.

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Reshaping Gender Portrayal, Masculinity, and Empowerment Narratives in Pakistan's Electronic and Digital Media Commercials

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Abstract

Electronic and digital media commercials in Pakistan mirror the traditional social order as well as the cultural transformation that society experiences over the years. The short duration of an advertisement and its repeated, unavoidable broadcast during regular programs makes it an impactful medium because it echoes the viewers' lived experiences, particularly when it reflects gender representation and power dynamics within the country's changing socio-cultural environment. The available literature focuses on the stereotypical gender portrayals showing how women are confined to domestic roles while men are depicted in positions of authority in the public sphere, thereby overlooking the subtle transformations that have recently occurred in Pakistani society. To fill this gap, the study adopts the frameworks of Goffman (1979) and Eisend (2010) and examines changes in gender portrayal in television and digital media commercials that to reflect societal transformation through a qualitative content analysis of a purposive sample of 20 advertisements from 2016 to 2023. The findings reveal that although the content of electronic and digital media commercials today supports and reflects a narrative of women's equal rights to healthcare, education, and employment, the social acceptance of narratives concerning their bodily autonomy remains largely contested.

Keywords: Television Commercials, Advertisements, Women Empowerment, Gender Stereotype, Pakistani Media

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1. INTRODUCTION

Print, electronic, and digital media universally reflect and shape socio-cultural norms and traditions because of their ability to "mirror and mold" (Grau & Zotos, 2016, pp. 762–763). Despite this powerful characteristic of reflecting social order across print, television, and radio media globally, the seen, heard, and spoken content about women accounts for only 26%, and the news stories that challenge gender stereotypes are fewer than 13%. This pattern is also observed in the Asian and Middle Eastern media industry, where women-related content accounts for only 19% (GMMP, 2025). This reflects the media's limited influence in reshaping gender portrayals and masculinity. According to the 2026 report on Pakistan's media, women-related coverage constitutes 11% of news across traditional media (print, television, and radio), and 26% in internet news (Uks Research Center, 2026). This means that, despite its ability to mirror societal trends, the media

provides limited space for women's content. This is not simply an issue of underrepresentation but also reflects gender bias where women are either portrayed in domestic or family roles or framed as victims. Content challenging gender stereotypes or addressing gender inequality accounts for only 1% on traditional platforms, while digital platforms offer slightly better visibility; however, because digital content has a more limited reach, it hardly affects entrenched masculinity and gender biases (Munim, 2026). It is important to note that there are several types of media content, including news, dramas, talk shows, and documentaries, but the most effective and distinctive are commercials, which, due to their short format and repetitive broadcasting, are expected to leave a lasting impression. Given the frequent and unavoidable appearance of commercials during programs, it becomes evident that they occupy a strong and unique position within media content, designed to resonate with viewers. Thus, commercials can serve as an effective tool to reflect gender biases and redefine masculinity.

Since Pakistan's independence in 1947, the advertising industry has evolved through several phases. The first phase of advertising began in print media, with newspapers and magazines being the primary platforms for commercials. At that time, female representation was restricted by a "rigid ideology" and conservative social norms, where women were depicted as symbols of patriotism and to promote national identity to create an emotional connection with the public (Siddiqui, 2016, p. 13). They were presented as beautiful, charming wives and mothers whose primary responsibility was caring for their husbands and children by performing household chores such as cooking, washing, and cleaning. Particularly, in the era "between 1950 and 1970, Pakistan's print media ceased to be an exclusively male civic space" (Rauf & Iftikhar, 2025, p. 262). In those early portrayals, even when women appeared as professionals, such as air hostesses, their roles were largely confined to polite, glamorous caregivers. Such female representation often negatively affects the image of women, as "by largely ignoring women or portraying them in stereotypical roles of victim and/or consumer, the mass media symbolically annihilate women... most media portray women, if at all, in traditional roles: homemaker, mother, or, if they are in the paid workforce, clerical and other 'pink-collar' jobs" (Tuchman, 2000, p. 150). In 1964, Pakistan Television (PTV) was established, and the same pattern was observed in various programs across electronic media, including commercials; it continued to portray the patriarchal culture characterized by male domination and female submissiveness. This trend of normalizing gender stereotypes in electronic media persisted until the early 2000s.

After assuming power in 1999, General Pervez Musharraf permitted private television channels as part of his 2002 media liberalization policy. This was a period when cable and satellite technologies were also expanding. The period between 1999 and 2008 marked a shift in the media industry, creating a multi-channel environment with increased digital presence that led to greater competition and reshaped media content, including commercials, which began incorporating representations of non-traditional gender roles and characters.

The result of that development is evident today: the country has approximately 140 licensed satellite television channels, along with their digital presence. This digital presence has experienced rapid growth in viewership due to growing internet adoption; over 110 million people in Pakistan are internet users, and their social media users number approximately 10 million across platforms such as YouTube, Facebook, Instagram, Twitter, and TikTok. This indicates rapid and continuous online content consumption and exposure to media across multiple platforms among a significant percentage of the population over a relatively short period (PEMRA, 2023; Kemp, 2025). Thus, whereas, in the past, gender portrayal was reflected only in print media, it is now also depicted in electronic media and disseminated across digital platforms, including social networking websites, at an unprecedented scale and speed, making these media effective tools not only to highlight the sociocultural composition of society but also to identify emerging societal trends.

In this changing media landscape, it is important to recognize the contributions of women's rights organizations that voice women's concerns, as well as the growing education and employment opportunities for women, which, overall, have raised awareness in society (Awan, 2022, pp. 236–240). Given the rapid growth of media and its influence, this study focuses on the portrayal of gender narratives in Pakistani electronic and digital media commercials[6]. First, it aims to examine the images, behaviors, and characterizations assigned to men and women in advertisements; second, to investigate how these portrayals challenge or reinforce masculinity; third, to evaluate the extent to which the women's empowerment narrative is constructed and promoted through commercials.

2. LITERATURE REVIEW

Existing scholarship on gender portrayal in Pakistani media reveal that women in different programs are depicted as embodiments of beauty and charm, and their roles are largely submissive and dependent on male authority, both in public and private domains (Huda & Ali, 2015). In print media, the content of both English and Urdu newspapers is predominantly gender-biased, particularly in news reporting. However, Urdu newspapers appear to emphasize women's subordination and their appearance more frequently than the English-language print media. This does not mean that English newspapers are entirely free of gender-biased content; rather, they offer more nuanced portrayals of gender issues (Ullah et al., 2016; Raza & Liaqat, 2016). Similarly, in Pakistani television dramas, famous in South Asia for their

[6] Electronic Media is defined as "ways of communicating information that are electronic rather than using paper, for example, television, and the internet", while the digital media is "a form that can be stored, read, seen, etc. using a computer, such as news websites, social media, electronic books, and digital video, images, or music" (Cambridge University Press, n.d.). This study recognizes that commercials from electronic and digital media platforms often overlap in practice, especially because nearly all television channels have digital presence today and the commercials aired on television are frequently recirculated on their digital and other social networking sites like YouTube, Facebook, Instagram, and TikTok. Therefore, referring to electronic and digital media in this study is considered more appropriate.

strong storyline, women are mostly portrayed as victims and men as oppressors, thus often becoming a tool that reinforces gender-biased sociocultural structures, which "can not only shape but also, at times, distort public opinion and behavior about gender, utilizing words and images" (Zahid et al., 2026).

However, due to societal transformations, there has recently been a shift in the portrayal of female roles, moving away from women's victimhood and toward depicting them as assertive and materialistic characters who pursue money, fame, and power; this sparks a new debate over their characterization, indicating that although dramas may no longer portray women in weak roles, they often cast them as negative characters by placing all social and moral responsibility on them. This shift is discussed in a content analysis study of three popular television dramas *Mere Paas Tum Ho* (I Have You), *Dil Ruba* (Darling), and *Mohabbat Tujhe Alvida* (Goodbye Love) that concludes, "These female characters are stigmatized for being gold-diggers and frail, which can be very harmful to the general thinking of the masses" (Rasool et al., 2022, p. 1156). Another study found that such characterization of women in dramas often presents "commercially motivated discourses that prevent a more substantive critique of the structure" (Fazail et al., 2026). It also means that existing narratives leave little space for women who are excelling in their careers, are resilient survivors of socio-cultural injustices, or stand as autonomous decision-makers in private and public life. Although media coverage of women in politics, employment, and health is usually positive, the reporting on violence against women demonstrates a high level of negative framing where they are presented in a sensational manner with emotionally charged linguistic and para-lingual cues that eventually label women as victims who have no agency (Adnan et al., 2019; Amjad et al., 2021).

Following the same pattern of female representation, Pakistani commercials also show women characters in domestic roles with submissive personality traits, while men are portrayed as authoritative, dominant, and professional figures. Supporting this argument, a study added that although women are now better represented in advertisements because of the growing awareness in society, their stereotypical objectification and sexuality are still reinforced through unrealistic beauty standards, which eventually results in body shaming, harassment, and violence (Iram et al., 2023). This implies that though commercials have now started to highlight women's education and employment issues, such coverage is either limited in volume or not presented effectively. Therefore, domestic roles still account for nearly three-quarters of female representation in Pakistani commercials, indicating that women are underrepresented in public spaces (Jamil, 2018; Ali & Shahwar, 2011).

Another study examining five Pakistani brand advertisements between 2010 and 2020 observed a transformation in male and female gender representations and concluded that these "brands can play a pivotal role in fostering a more equitable and inclusive representation of gender in advertising, contributing to positive societal change" (Ejaz et al., 2024). While

highlighting this issue from the perspective of a society that shares many similarities with Pakistan in the portrayal of women across media, a study based on 118 images of shop signs, posters, billboards, and wall-painted advertisements collected from North India, concludes, "Women are given subjugated roles …(while) men are portrayed as engineers, managers, pilots, chefs, etc. The billboards and outdoor advertisements act as significant agents modifying our perceptions" (Gogoi & Sinha, 2024, p. 31).

However, the present study argues that the portrayal of women in commercials reflects women's position in society instead of constructing it. If they are portrayed as empowered in commercials while the real situation contradicts such portrayals, it will not have any impact on the audience of that content. According to a study based on analyzing the content of television commercials from 13 Asian, American, and European countries, such portrayals are not attributable solely to prevalent gender inequality in these societies. Instead, "the misrepresentation and temporal lag of evolving societal dynamics" depicted in the commercials are responsible for these gender depictions (Matthes et al., 2016, p. 324). Additionally, the media may at times fail to fully depict societal transformation due to logistical constraints. Here, it is important to understand that the way media of any country portrays its male and female characters reflects gender positioning as well as power dynamics in that country; this aligns with Mulvey's (2006) analysis, which argues that when women in films are portrayed as 'passive raw material' for the 'active male gaze', it reinforces patriarchy. Despite this, the fact remains that regardless of how the media portrays gender, audiences interpret these messages according to their mindsets and the circumstances and challenges they face (Chu et al., 2016).

The above literature largely addresses male and female gender representation in commercials, focusing on how, over time, stereotypical portrayals of both genders reflect transformation in concordance with societal changes. However, the missing debate from the literature is to pinpoint which specific representation in these advertisements reflects the change, and what narrative is still struggling to receive acceptance from society—a gap this research aims to fill. In addition, the study will also highlight how gender portrayals in Pakistani media are influenced by several other factors, including the conservative socio-cultural outlook, the influence of religious orthodoxy, growing debate on gender equality at different forums, easy and affordable access to electronic and digital media, and overall transformation of society in which the trend of female education and employment has increased. In this context, the present study examines the extent to which television and digital media commercials have mirrored gender portrayals, how this narrative challenges patriarchy, redefines masculinity, celebrates women's empowerment, and highlights areas where it is still struggling to reflect change.

3. METHODOLOGY

The study employs qualitative content analysis to examine gender portrayals in Pakistani television and digital media commercials. For this purpose, purposive sampling is used to select 20 commercials, including public service announcements, that were aired from 2016 to 2023 on Pakistani television channels and/or circulated on digital/social media platforms, and that feature explicit or implicit messaging related to transformed gender roles, masculinity, and empowerment. The sample size ensures relevance while maintaining a manageable scope, and the selected time frame is sufficiently broad to capture transformed advertising trends. Advertisements that do not meet this criterion are excluded to ensure the sample directly serves the study objectives. The rationale for selecting this period is the rapid growth of media, accompanied by technological advancements and increased participation of women in public life which contributed to changing societal attitudes toward gender roles which were ultimately reflected in electronic and digital media content. For this study, advertisements that reflect changes in gender representation and are readily available on electronic and/or digital media platforms are included in the sample. In Table 1, the selected commercials are detailed, including the advertisement codes, brand names, product categories, durations, access links, and brief descriptions.

Each commercial served as a single unit of analysis and was viewed multiple times to develop familiarity with its content. Most television commercials feature household products and are also available on various digital platforms; however, only YouTube links are provided in the table to maintain uniformity. Table 1 provides brief descriptions of the listed advertisements, which provide an understanding of each storyline and establish background knowledge before applying a coding framework based on the studies of Goffman (1979) and Eisend (2010), tailored to the Pakistani socio-cultural context. The coding process is conducted by a single researcher; this approach ensures consistency and uniformity in the application of the coding framework across all sampled advertisements. The code of *subordination* and *function positioning* are developed from Goffman's 'Ritualization of Subordination' (defined as the depiction of women signaling submissiveness and reduced social status) and 'Function Ranking' (explained as the pattern where men and women collaborate on a task) categories, respectively. The code of *active agency* and *setting* is developed from Eisend's 'Role Behaviors' and 'Occupational Status', which measures the operationalization of a character in the domestic/private sphere versus public/professional sphere and the type of job or professional standing assigned to them.

Table 1: Description of Television and Digital Media Advertisements (2016–2023)

Ad Code	Brand Name	Product Category	Duration	Link	Brief Description
Ad-1	*Lemon Max Long Bar*	Kitchen Product	40 second	https://www.youtube.com/watch?v=ZnNi71ZKkWw	Husband and wife are washing dishes while the husband's mother watches them.
Ad-2	*Nestlé Every Day*	Food/Dairy	1 Min	https://www.youtube.com/watch?v=uF9vqe8GLUk	Husband and wife prepare tea for each other.
Ad-3	*McDonald's Food Trust*	Fast Food	50 second	https://www.youtube.com/watch?v=x_qfVVaPR88	Mother is ordering food from an external vendor.
Ad-4	*Colgate*	Personal Care/Oral Hygiene	30 second	https://www.youtube.com/watch?v=OjEtjqm5tvg	Wife plays a video game with her daughter, while the husband serves them food.
Ad-5	*Always Sanitary Pads*	Personal Hygiene (Sanitary Pads)	47 seconds	https://www.youtube.com/watch?v=HcloGUeALa0	Successful working women in diverse fields emphasize resilience despite challenging menstrual phases.
Ad-6	*Shan Foods*	Food/Spices	1 Min, 20 seconds	https://www.youtube.com/watch?v=t95xshRhzQ4	Husband and mother-in-law support a doctor wife/daughter-in-law by managing all household tasks and childcare responsibilities by themselves.
Ad-7	*Eva Cooking Oil*	Food/Cooking Oil	1 Min, 30 seconds	https://www.youtube.com/watch?v=tLqURAhAqxE	Men, as fathers, sons, and husbands cook and serve meals to the women in their families.
Ad-8	*Shan Foods*	Food/Spices	40 Seconds	https://www.youtube.com/watch?v=U_5Zt2POQMI	At an Eid dinner, the husband and mother-in-law defend their doctor wife/ daughter-in-law when relatives criticize her limited involvement in dinner preparations.

Ad-9	*Dostea Tea Whitener*	Food/Tea Whitener	2 Min, 50 Seconds 2 Min, 47 Sec	*Part:1* https://www.youtube.com/watch?v=vmoFWEZXKow *Part-2:* https://www.youtube.com/watch?v=QK61pM893lE	A marriage proposal story that challenges stereotypes associated with marriage, gender roles, and conventional family expectations.
Ad-10	*Department of Population Welfare, Government of Punjab*	Family Planning	58 Sec	https://www.youtube.com/watch?v=6cdE21ybUqM	A man explains that maintaining at least a three-year interval between the first and second births is important for the health of both mother and child and ensures a prosperous life.
Ad-11	*People's Primary Healthcare Initiative Pakistan*	Family Planning	53 Sec	https://www.youtube.com/watch?v=jtnaw7ysisw	A woman explains that family planning is a shared responsibility between husband and wife, emphasizing mutual consent and advocating for at least a three-year gap between the birth of the first and second child.
Ad-12	*People's Primary Healthcare Initiative Pakistan*	Public Health	44 Sec	https://www.youtube.com/watch?v=NT9183FrRQA	Grandparents joyfully welcome the birth of a granddaughter, emphasizing that it's everyone's responsibility to pay attention to her medical care.
Ad-13	*Brooke Bond Supreme Tea*	Tea/Beverage	45 Sec	https://www.youtube.com/watch?v=gFPiHP6SF3E	To please her daughter-in-law, the mother-in-law invites her daughter-in-law's mother over for tea.
Ad-14	*Josh Condoms*	Contraceptives	6 Min, 28 Sec	https://www.youtube.com/watch?v=w9-8wg1r04U	Wife initiates physical intimacy with her husband, asks for protected sex, buys condoms from a shop, and carries them in her bag.

				Note: The link has 10 ads of the same product.	
Ad-15	*Ahmed Foods*	Food/Spices	3 Min, 14 Sec	https://www.youtube.com/watch?v=inYPBgIwzIw	Husband expresses love, respect, and understanding toward his wife who has hearing and speech disabilities.
Ad-16	*Pepsi*	Beverages/Cold Drinks	3 Min	https://www.youtube.com/watch?v=z3Q4gPAIwI8&t=3s	Daughter creates lights from inexpensive, environmentally friendly empty bottles and uses them to illuminate her father's path.
Ad-17	*Adamjee Insurance Company*	House Insurance	4 Min, 6 Sec	https://www.youtube.com/watch?v=-M3W4hZPFek	Father, despite limited financial resources, struggles to educate his daughter, who eventually becomes an architect.
Ad-18	*Shezan Foods*	Food/Spices	2 Min, 35 Sec	https://www.youtube.com/watch?v=oJw2QUstnyg	After the mother's death, a father cooks for their working daughter, who comes home late from work due to her official responsibilities.
Ad-19	*Sate Life Insurance Corporation*	Insurance	2 Min, 78 Sec	https://www.youtube.com/watch?v=T39-VRCMfNE	An orphaned boy's education is funded by a woman who bought an insurance policy for this purpose. The boy later becomes a doctor and learns that the woman who funded his education is ill, so he pays her medical bills.
Ad-20	*Pampers*	Childcare product	2 min, 45 Sec	https://www.youtube.com/watch?v=_VGOrKxsvk0	A father is changing his child's diaper while the mother is busy with other household chores.

Careful understanding of visual cues, including body language, facial expressions, and performed actions in sampled commercials, determined the codes of *subordination* (low or not), *function positioning* (equal, collaborative, or functional reversal), *active agency* (male, female, or both), and *setting* (private or public). *Low subordination* refers to both genders contributing to household responsibilities, while *no subordination* directs females to independently decide their course of action. *Equal and collaborative positioning* indicates that both genders contribute to home-related responsibilities, while *functional reversal* refers to the reversal of traditionally conceived gender roles. *Active agency* refers to either males, females, or the authority of both genders. *Setting* indicates the social environment in which males and females operate.

Following the coding of individual commercials on these four constructs, codes were synthesized to classify primary gender portrayals in four categories: *traditional, non-traditional, mixed, and empowerment*. The commercials are classified as *traditional* when the majority of coded elements reflect female subordination and conventional female function positioning, and men are portrayed as authoritative figures/providers. The commercials classified as *non-traditional* are those in which the majority of coded elements reflect the inverse of these patterns, such as active female agency, challenging stereotypes, reversed male/female role positioning, and public/professional settings. Commercials classified as *mixed* are those in which traditional and non-traditional elements co-exist without a clear domination pattern, but in some cases, a discernible lean towards one orientation was noted and mentioned as Mixed (Lean T) for a lean towards traditional portrayals, or Mixed (Lean NT) for a lean towards non-traditional portrayals. This sub-classification necessarily involved subjective interpretation by the researcher, which is acknowledged as a limitation of the coding process. Finally, *empowerment* refers to the expression of non-traditional gender portrayals that exhibit active female agency, fully reversed gender-function positioning, the complete absence of women's subordination, and a strong message of independence. This code often co-exists with the *non-traditional* code.

4. RESULTS AND ANALYSIS

The analysis process went through several stages. First, familiarity with the content of selected advertisements was developed by repeatedly viewing each sampled commercial to gain an initial understanding, followed by systematic coding using the adopted framework based on Goffman and Eisend. Second, individual codes were synthesized to categorize each commercial's overall gender role orientation across the sample to identify recurring patterns and themes. Third, an interpretative strategy was applied that situated these patterns within the broader theoretical framework allowing researchers to critically assess the sampled commercials that reflect, reinforce, or challenge prevailing gender norms in contemporary Pakistani society. Table

2 below presents cues and coding of sampled commercials and the primary gender portrayal.

Table 2 shows that out of 20 commercials, 12 are coded as low and 8 as showing no subordination of the female gender. The advertisements coded as low female subordination show supportive task performance across both genders, whereas the commercials that show no female subordination mostly exhibit a reversal of function and collaborative task performance between the two genders. Active female agency is evident in 8 advertisements, while 3 depict active male agency. There are 9 commercials that reflect equal agency of both genders. Based on this coding, the primary gender portrayal of the sampled advertisements dominantly reflects non-traditional, mixed, and empowerment narratives regarding female representation.

Table 2: Analysis of Electronic and Digital Media Advertisements

Ad Code	Goffman & Eisend Framework Cues and Coding *(Subordination, Positioning, Agency, Setting)*		Primary Gender Portrayal
	Cues	*Coding*	
Ad-1	-Wife is cheerful, not submissive; husband is playful and central -Both participate equally in domestic chores -Both are actively washing dishes -Kitchen	*-Low subordination* *-Equal or collaborative positioning* *-Active agency of both genders* *-Private setting*	Mixed (lean NT)
Ad-2	-Husband and wife are warm and romantic toward each other -Domestic task performed reciprocally highlights partnership rather than hierarchy -Woman prepares tea for both and later requests her husband to make a cup of tea for her -Kitchen and living room	*-Low subordination* *-Equal or collaborative positioning* *-Active agency of both genders* *-Private setting*	NT
Ad-3	-Only a happy mother is present with children playing outside -No male figure; choosing to order food rather than cook, making her the sole decision-maker -Practise her choice and autonomy by ordering food -Home and garden	*-No subordination* *-Independent positioning* *-Active female agency* *-Private setting*	NT
Ad-4	-Woman as a wife and a mother figure is central, confident -Both parents teach their daughter the importance of oral hygiene. The husband sets the food for his wife and daughter -Both parents share active roles, but the wife is playing a video game, while the husband is cooking and serving food. -Kitchen and living room	*-Low subordination* *-Collaborative & function reversal positioning* *-Active agency of both genders* *-Private setting*	NT
Ad-5	-Women portrayed as confident, central, and empowered. -Women from different professions, shown as ambitious and resilient throughout their menstrual cycle -Women appear as strong and active individuals in all roles, overcoming physical discomfort -Home and public spaces, including workplaces	*-No subordination* *-Independent positioning* *-Active female agency* *-Public and private setting*	NT EMP
Ad-6	-The female doctor (wife/daughter-in-law) is central, professional, and respected by the in-laws -Husband and mother-in-law together manage cooking/childcare	*-Low subordination* *-Collaborative & function reversal positioning* *-Active female agency*	NT EMP

	-The doctor focuses on her professional role -Home and workplace	*-Private and public setting*	
Ad-7	-Men as fathers, sons, and husbands are cooking for themselves or for their female family members -Men cook while women either enjoy watching them cook or/and enjoy food at the table -Men prepare and serve food, while women eat without participating in the process -Kitchen	*-No subordination* *-Function reversal positioning* *-Active female agency* *-Private setting*	NT
Ad-8	-Daughter-in-law is acknowledged in her professional role as a doctor by the in-laws -Cooking is shared by mother-in-law, daughter-in-law, and son, emphasizing that food preparation is a collective effort - With her in-laws' support, the doctor balances professional duties with less domestic contribution -Kitchen	*-Low subordination* *-Collaborative & function reversal positioning* *-Active agency of both genders* *-Private setting*	NT
Ad-9	-Daughter-in-law-to-be is respected and admired for her individuality (playing a musical instrument) -The non-traditional family setting includes brother as chef, his wife as doctor, mother as markswoman, father as poet -All male and female family members breaking norms and supporting the marriage proposal, highlighting autonomy, diversity, and acceptance of non-traditional roles -Home and restaurant	*-Low subordination* *-Collaborative & function reversal positioning* *-Active agency of both genders* *-Private and public setting*	NT EMP
Ad-10	-Man is central, openly sharing his decisions regarding family planning in consultation with his wife -Husband and wife jointly decide on having a small family with appropriate gaps between children -Man narrates his decision after consulting his wife -Driving on the road	*-Low subordination* *-Collaborative positioning* *-Active male agency* *-Public setting*	Mixed (lean T)
Ad-11	-Wife is shown as an equal partner in decision-making, recalling their wedding photo as a symbol of shared choices; the husband's voiceover reinforces equality rather than dominance -Husband and wife jointly decide on birth spacing and methods, emphasizing partnership -Both genders exercise agency—the wife narrates their shared decision, the husband explains family planning options, and together they consult a doctor -Home and clinic	*-Low subordination* *-Collaborative positioning* *-Active male agency* *-Private and public setting*	NT

Ad-12	-Both grandparents, central to the household, are happy on the birth of their granddaughter -Grandparents listen to and agree with the doctor's advice, showing collaboration between elders and medical professionals -Grandmother proposes, against which the doctor advises, and they agree by stressing the shared family responsibility to care for a newborn -Home	-Low subordination -Collaborative positioning *-Active agency of both genders* -Private setting	NT
Ad-13	-The daughter-in-law initially offers to make tea, but the mother-in-law takes the lead, showing care and respect rather than hierarchy or submissiveness -Tea making becomes a shared act where the mother-in-law and the daughter-in-law's own mother prepare tea together -All females in different relations acknowledge and appreciate each other and engage in conversation, reinforcing harmony and shared responsibility -Home	-No subordination -Collaborative positioning *-Active female agency* -Private setting	Mixed (Lean T)
Ad-14	-Women are portrayed as confident, equal partners in sexual relationships, expressing desires, carrying condoms, and purchasing them without submission -Women and men are shown as equals in intimacy and decision-making. The portrayal normalizes women's comfort in discussing and negotiating sexual health. -Women initiate conversations about sex, request protection, carry condoms, and buy them openly. Male agency is also present but balanced, reinforcing mutual responsibility in sexual health. -Home, public spaces including restaurants and shops	*-No subordination* *-Collaborative & function reversal positioning* *-Active male agency* *-Private and public setting*	NT EMP
Ad-15	-Two women gossip about the new couple's non-social nature -The husband does grocery. Both express love openly. -Husband proudly defends his wife, explaining she is an excellent cook but communicates through sign language -Home, neighborhood, and market	*-Low subordination* *-Collaborative & function reversal positioning* *-Active agency of both genders* *-Private and public setting*	NT
Ad-16	-A young daughter makes lights from empty plastic bottles and places them along the path to the house -When asked by her mother, she explains that she illuminated the path so that her father does not get lost in the darkness while returning from the forest after work	*-No subordination* *-Collaborative positioning* *-Active female agency* *-Private and public setting*	NT

	-Daughter decided to make and place the lights -Home and jungle		
Ad-17	-At his daughter's birth, the father celebrates while others are sad; he calls her a blessing and gives her an education -Despite meagre resources, he funds her education, supports her professional degree, and ensures she achieves higher education -Daughter becomes an architect, builds her own house, and improves her living standard. -Home, university, and workplace	*-No subordination* *-Supportive positioning* *-Active agency of both genders* *-Private and public setting*	NT
Ad-18	-The daughter is greeted warmly by her father when she returns from work and then proceeds to cook for him. -She prepares dinner after office for her father, and he cooks for her on her birthday, following his wife's recipe. -Both enjoy the meal together, and the father reflects that if her mother were alive, she would have said cooking is not solely the woman's responsibility. -Home	*-Low subordination* *-Collaborative & function reversal positioning* *-Active female agency* *-Private setting*	NT
Ad-19	-A woman funds the education of an orphaned child and then disappears -The orphaned child becomes a doctor, recognizes the woman while treating her and pays her bill -Portrays an independent woman who funds the child's education and her hospital admission -Orphanage and hospital	*-No subordination* *-Collaborative & function reversal positioning* *-Active female agency* *-Private setting*	NT
Ad-20	-The father is shown changing the diaper and putting the baby to sleep just like a mother would -When the mother goes out, he is left to care for the baby. The baby needs a diaper change; after some effort, the father successfully changes the diaper and comforts the child. -Father reflects and realizes childcare is not solely the mother's responsibility -Home	*-Low subordination* *-Collaborative & function reversal positioning* *-Active agency of both genders* *-Private setting*	NT

Note: The key to gender portrayals is as follows: T (Traditional), NT (Non-Traditional), M (Mixed), EMP (Empowermen).

5. DISCUSSION

There are three interconnected themes identified through the applied coding framework. Several advertisements can be classified in more than one category, indicating that a single commercial may convey multiple messages. For example, a commercial portraying a husband helping his wife with household chores not only challenges patriarchy, which holds that performing household responsibilities like cooking, washing, and even taking care of children is the sole responsibility of a woman, but it also highlights that sharing responsibilities with one's spouse leads to a good relationship between a couple, and thus a healthy family life. This overlap is commonly observed in qualitative content analysis, where a single theme is not exclusive but is intertwined with other identified themes, reflecting a complex, layered social environment and gender positioning within this context (Armborst, 2017).

The first theme examines men versus women in domestic roles. Over the years, Pakistani media commercials have largely followed a pattern where household chores are considered the primary responsibility of women, and professional life and activities outside the home are considered the domain of men. However, the content analysis of commercials in this study indicates that this trend is changing in society; men are increasingly shown in caregiver roles, performing household responsibilities alongside their female family members. For example, portrayals where a husband is shown making tea for his wife (Ad-1), washing dishes along with the wife (Ad-2), serving food at the table to his wife and children (Ad-7), changing an infant's diaper (Ad-20), and cooking for a working daughter (Ad-18) reflect a change in society. These commercials not only mirror the functional reversal of gender and the non-traditional role performance of male family members, but they also highlight changes in social structures by indicating female agency. However, while comprehending this evolved change, we should not overlook the fact that this trend observed in media commercials does not exist in isolation; it is the result of the growing female literacy and employment trends that have made families realize that with more women joining the workforce now, a workable, pleasant family environment is achievable with the cooperation of both genders in sharing household chores. It means these narratives not only question the socio-cultural gender role hierarchy, but at the same time educate people to understand and accept that it is normal to work beside your working daughters, mothers, and wives at home. These portrayals also reflect that the close coordination of both genders in household work is normal; this message was missing in previous gender narratives in advertisements. Here, it is important to note that, despite changes reflected in media commercials, advertisements that portray men working outside the home while women perform household responsibilities outnumber those that depict the equal involvement of both genders in household tasks. This fact indicates that though change is imminent, society is not fully prepared to understand and adapt to the new socioeconomic requirements. The above is aligned with the

findings of a study that mentions that "once this change is accepted nationwide, society can work on a better roadmap" (Murad et al., 2022, p. 9). Another observation in our sample is that advertisements featuring men in nurturing and caregiving roles primarily focus on promoting kitchen-related items; this observation is consistent with the findings from an earlier study (Ejaz et al., 2024). However, this image of men in supportive roles could be considered a first step; in the Pakistani context, where women are confined to household chores predominantly related to the kitchen, it is believed that once the male role is strengthened in this domain, women's participation in other areas of life will become more acceptable.

The second theme studies men versus women in a professional setting. As discussed above, the Pakistani woman's primary focus is her home and the family she cares for, a perception reinforced by our analysis, which implies that a woman's presence in professional life is negligible relative to that of her male counterparts. It is also reflected in the Pakistan Labor Force Survey for 2024–25, which reports female and male labor force participation rates of 22% and 67.7%, respectively (Pakistan Bureau of Statistics, 2025). In this context, media commercials, through their content, attempt to create a narrative that the support of parents and in-laws in helping a working woman in domestic chores is crucial to the woman's professional development. These commercials also create awareness that household work is not solely the woman's responsibility. For example, Ads 6 and 8 depicting a father, husband and mother-in-law supporting a working daughter, wife and daughter-in-law in household responsibilities not only helps the women to pursue professional development, but it also sets an example for the audience to realize that both her own family and her in-laws should appreciate and accommodate her as a working woman. Similarly, a powerful message reached the audience through Ad-17, in which a father, against his family's wishes, supports his daughter's education despite his low income. After obtaining an education, the daughter becomes an architect, builds her own house, and lives in far better conditions than those she experienced as a child. These narratives also reflect that the main hurdle in the way of female education and employment in Pakistan comes from society. In situations where families manage to secure their daughter's education and employment, the difficulties are usually created by the extended family members and/or society, who believe educating a female child is a waste of money. This is because culturally, daughters are perceived to belong to the family they get married into. If the girl is educated and employed, the hurdles often come from her in-laws who sometimes oppose her employment and expect her to confine herself to the exclusive role of wife and mother. This is reflected in a 2023 Gallup survey that reports that 35% of female medical graduates have not entered the workforce, a theme specifically addressed in Ad-6. The role of commercials in delivering gender equity messages through their content is also supported by prior studies, which stress a shift in families' expectations of working women (Bukhari & Azam, 2025).

The third theme concerns male versus female perspectives on Sexual and Reproductive Health (SRH). Pakistani society represents a patriarchal

culture, often supported by a misinterpretations of religion, particularly when it comes to gender roles in society. In this situation, a woman's right to sexual and reproductive health is compromised. As far as reproductive health is concerned, government-sponsored advertisements, as depicted in Ads 10 and 11, align with the changing narratives in family planning by focusing on collective decision-making; this includes the importance of an appropriate interval between births in consultation with a doctor. Such advertisements often portray a husband and wife visiting a doctor together for consultation and then deciding on a suitable contraceptive method that not only helps to establish an interval between births but also promises to safeguard the mother and child's health, along with ensuring that the family's financial situation stays stable. These narratives raise viewers' awareness of the financial benefits of having a small family and an appropriate interval between births. However, commercials showing a wife expressing her sexual desire to her husband and a preference for protected sexual intimacy and her act of purchasing contraceptives from a shop and keeping them in a bag (Ad-14) are off-air since 2013; the Pakistan Electronic Media Regulatory Authority (PEMRA), heeding the complaints made by religious and conservative sections of society, wrote to broadcasters and referred to these commercials as "indecent, immoral and in sheer disregard to our socio-cultural and religious values" (Dawn, 2013; Mohammed, 2013). These advertisements are still available on various digital media platforms and can be easily accessed. The ban on these commercials on television demonstrates that society is not receptive to discussing the sexual needs of a woman, even in a marital relationship; however, access to these advertisements through other digital platforms is a form of covert media support for women's sexual autonomy and intimacy-related preferences in marriage. This reluctance to openly discuss physical intimacy is a socio-cultural phenomenon in Pakistani society, reflected in different survey-based studies (Faize, 2024; Ali et al., 2025). Because of the socio-religious taboo attached to such conversations, Human Rights Watch (2022) stated in its report that marital sexual relations are widely considered a male prerogative in patriarchal societies like that of Pakistan, often leaving the female partner unheard and unseen. This tendency is also evident in the commercials analyzed in our sample.

Taken together, it can be summarized from these findings that content promoting women's education and employment, along with men's support for household chores, reflects a societal shift toward accepting women's fundamental rights, which the advertisements mirror in their narratives. However, while portraying women on their academic and professional journeys, the advertisements also highlight the socio-cultural barriers they face in their efforts to empower themselves, thereby sensitizing society and strengthening the gender equality narrative. Similarly, commercials that also serve as public service announcements focus on women's reproductive health, reflecting that both males and females should coordinate while making decisions regarding the birth of a child and the appropriate gaps between births for a healthy and manageable family. Nevertheless, when the question

of women's sexual consent and their right to use contraceptives is discussed—as both are related to their bodily autonomy—society does not accept women's active agency, and advertisements do not reflect such agency. As discussed above, whenever this subject has been highlighted in commercials, it has received severe backlash.

6. CONCLUSION

Overall, the commercials reflect societal change where equal participation of both genders in household chores has been a common theme in advertisements, suggesting that gender equality first begins in the domestic sphere and later extends to public settings. It also indicates that society may be ready to bring changes to women's stereotypical positioning within the domestic environment, but when it comes to a public setting, there are serious socio-cultural handicaps, supported by the orthodox religious elements within society. A final point reached through this research, as seen in advertisements, is that Pakistani society seems prepared to accept active agency for women more in the private domain than in the public sphere. It is also ready to support female education and career development, but when it comes to their consent in sexual matters, there is almost no acceptability. This is confirmed by the fewer advertisements about women's reproductive health and the ban on television commercials that highlight sexual autonomy, demonstrating that such issues are still considered social taboos. Thus, advertisements adopting these themes are not produced or telecast in the first place, and if they are, they receive societal backlash when they are aired on television.

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Coping Patterns, Pain Intensity, and Death Anxiety in Stage-II Cancer Patients

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Abstract

Death anxiety is a common psychological concern among people with cancer and is linked to poorer adjustment and reduced quality of life. Despite evidence connecting coping strategies and pain intensity with psychological outcomes, their combined relationship with death anxiety remains underexplored among patients with Stage II cancer in Pakistan.This study examined the relationships among coping strategies, pain intensity, and death anxiety; identified predictors of pain intensity and death anxiety; and assessed differences according to cancer type. A cross-sectional correlational design was used with 1,200 patients diagnosed with Stage II cancer. Participants were recruited through purposive sampling from oncology outpatient departments at selected Pakistani hospitals. They completed the Brief COPE Questionnaire, Numeric Pain Rating Scale (NPRS), and Death Anxiety Inventory (DAI). Data were analysed in Jamovi using Pearson's correlation, multiple linear regression, Welch's one-way ANOVA, and Games–Howell post hoc tests.Problem-focused coping was negatively correlated with death anxiety ($r = -.148$, $p < .001$). Denial coping was positively correlated with death anxiety ($r = .211$, $p < .001$) but negatively correlated with pain intensity ($r = -.172$, $p < .001$). The regression model explained 43.2% of the variance in pain intensity ($R^2 = .432$). Active coping positively predicted pain, while positive and denial coping were negative predictors. The death anxiety model accounted for 44.3% of the variance ($R^2 = .443$), with positive and denial coping identified as significant positive predictors. Coping strategies, pain intensity, and death anxiety differed significantly across cancer types, except for denial coping. Coping strategies and pain intensity were significantly related to death anxiety among patients with Stage II cancer. Problem-focused coping may reduce death anxiety, whereas denial coping is associated with greater psychological distress. These findings support incorporating culturally sensitive psychosocial assessments and coping-based interventions into routine oncology care to strengthen patients' psychological well-being.

Keywords: Stage-II cancer; death anxiety; coping strategies; pain intensity; psycho oncology; psychological adjustment; Pakistan; cross-sectional study.
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1. INTRODUCTION

The diagnosis of cancer entails more than just having an illness; it is a situation that has the potential of completely upsetting one's sense of security, identity, and future aspirations. Apart from dealing with the illness itself and its treatment, a patient faces uncertainties surrounding his/her survival, fear of

pain, family-related worries, and death itself. Nevertheless, despite its significance, death anxiety is a neglected psychological dimension of cancer care (Sharpe et al., 2018).

Death anxiety refers to fear and emotional disturbance due to the fear of death or the dying process itself. While everyone is conscious of their mortality, the onset of cancer tends to bring these fears closer to home because of the uncertainty that surrounds life and the future. People with higher death anxiety tend to be poorly adjusted, experience more emotional disturbance, and have poorer quality of life. (Gregurek et al., 2010).

As shown by studies in psycho-oncology, death anxiety is determined by a variety of psychological, social, and clinical aspects that interact with each other. Among such factors could be coping mechanisms, social support, meaning in life, self-esteem, and somatic complaints. (Sharpe et al., 2018). Such factors may help or hinder one's ability to adjust while receiving treatment.

1.1 Terror Management Theory and Death Anxiety

The current study uses Terror Management Theory (TMT) as a basis of understanding psychological responses to life-threatening diseases. The main hypothesis of TMT states that awareness of death can lead to existential anxiety, which is managed through psychological means like meaning of life, self-esteem, social support, and adaptive coping. (Greenberg et al., 1986).

The issue of mortality becomes an immediate concern for people with cancer. People can deal with the situation in the form of gathering information, problem-solving, and social support, while some people will use denial and avoidance. According to TMT theory, such coping strategies could define the extent to which mortality awareness causes psychological suffering.

1.2 Coping Strategies in the Context of Cancer

Coping strategies are the cognitive and behavioural responses individuals use to manage stressful demands that may exceed their perceived resources (Li et al., 2024). In cancer, these strategies help patients adjust to the emotional, physical, and social difficulties arising from diagnosis, treatment, and uncertainty about the future. Contemporary psycho-oncology research identifies coping as one of the most important determinants of psychological adjustment, resilience, and quality of life among cancer patients (Negash et al., 2025). Previous studies have consistently demonstrated that adaptive coping strategies, such as active coping, problem-focused coping, acceptance, and seeking emotional support, are associated with lower psychological distress and better emotional well-being. In contrast, maladaptive coping strategies, including denial, behavioral disengagement, and self-blame, have been linked to increased anxiety, depression, and poorer adjustment outcomes among individuals living with cancer. Active coping strategies, such as problem-solving, planning, and seeking support, are generally associated with better psychological adjustment and resilience. In contrast, passive coping strategies, including denial and behavioral

disengagement, have been linked to greater psychological distress and poorer mental health outcomes (Hasan et al., 2022; Kumar & Parashar, 2015)

Death anxiety is an emotionally aversive reaction triggered by thoughts of death whether one's own or others. It includes emotional, cognitive, and motivational components that vary depending on a person's life stage and cultural background. Literature shows that individuals with incurable illnesses adopt a range of coping strategies. Emotional support and acceptance are positively associated with better quality of life and improved mood, while denial and self-blame are linked to poorer outcomes. A significant proportion of cancer patients report using emotional support (77.0%), while fewer adopt acceptance (44.8%), self-blame (37.9%), or denial (28.2%) as coping mechanisms. Emotional support and acceptance are strong predictors of better physical and emotional well-being, whereas denial and self-blame predict diminished quality of life (Fouquet et al., 2013; Gregurek et al., 2010) .

Cancer-related fatigue is another widely reported concern, especially among those undergoing chemotherapy. Studies have shown that patients receiving chemotherapy, with or without radiotherapy, frequently report incapacitating fatigue that impairs physical, emotional, and occupational functioning (Kumar & Parashar, 2015; Kyota & Kanda, 2019).

1.3 Pain Intensity and Psychological Distress

The International Association for the Study of Pain describes pain as an adverse sensory and emotional experience linked to, or comparable with, the experience of actual or possible tissue injury (Raja et al., 2020). Pain is particularly prevalent and burdensome among people with cancer, as it can substantially impair physical functioning, psychological well-being, and overall quality of life. Cancer-related pain is complex and multidimensional, involving sensory, emotional, cognitive, and behavioral factors (Ramezanzade Tabriz et al., 2018)

However, recent findings show that there is a high correlation between pain severity and mental distress among patients with cancer. Those suffering from more severe pain also tend to suffer from anxiety, depression, hopelessness, and fear of cancer progression. (Gregurek et al., 2010; Sharpe et al., 2018). Persistent pain can also act as a source of reinforcement that makes people more aware of their health problems and vulnerabilities, thus making them fear death even more. Moreover, pain can lead to psychological maladjustment and existential distress of cancer patients.(Abbas et al., 2022) However, what needs to be noted is that the psychological effects of pain are not solely influenced by its level of intensity. Individual's coping skills play a role in how they experience pain in their interpretation. Despite experiencing pain, people who adopt positive coping mechanisms are likely to display good emotional adjustment. (Sharpe et al., 2018).

1.4 Cancer, Culture, and the Pakistani Context

The psychological response of individuals to cancer is not only dependent on individual factors but also depends on the cultural and social environment around them. In collectivist societies such as Pakistan, relationships within the family, religion, and the social network are especially valuable for coping with difficult situations in life. (Hofstede, 2001; Abbas et al., 2022v During the diagnostic and treatment process for cancer, families generally offer emotional, logistical, and financial help. This form of support can affect how the patient deals with illness-induced stress, pain, and thoughts about dying.

Results from studies conducted in Pakistan and other regions of South Asia have suggested that the factors of social support, religion, resilience, and meaningfulness in life can safeguard cancer patients against psychological distress. (Awais-E-Yazdan et al., 2023; Shahzadi & Mazhar, 2024). Higher levels of family cohesiveness and spirituality have been linked to lowered anxiety, better adjustment psychologically, and higher tolerance of illness-related problems (Al-Ghabeesh et al., 2020; Abbas et al., 2022). On the other hand, a lack of social support and adjustment problems with illness have been associated with higher levels of emotional disturbance and death anxiety in individuals with cancer. Oberth et al., 2025).

Even though the incidence of cancer in Pakistan is still on the rise, very little work has been done about the issue of death anxiety in the cancer patients in this country. Very few studies have focused on the effect of coping mechanisms and pain experience on the death anxiety of cancer patients in Pakistan. Regarding the importance of family, religion, and collectivism in the context of illness experience, more research is needed about the death anxiety of cancer patients in Pakistan.

1.5 Rationale

Death anxiety is a serious psychological issue for individuals who suffer from cancer since it is related to emotional problems, poor quality of life, non-adherence to therapy and coping with disease. Individuals who have high levels of death anxiety are prone to experience such mental issues as depression, anxiety, hopelessness, and existential problems. (Abed et al., 2020).

Coping strategies are vital to psychological adaptation. The use of adaptive coping strategies like active coping, problem-solving, and acceptance has been found to be correlated with good psychological adjustment while denial and behavioral disengagement have been seen to be connected to poor psychological adjustment. The impact of certain coping strategies on death anxiety is not very clear-cut. (Al-Ghabeesh et al., 2020; Alodhayani et al., 2021).

Pain is yet another key factor that influences the psychological aspects of cancer. Higher levels of pain have been linked to higher levels of anxiety, depression, fear of disease progression, and poor quality of life. Moreover,

pain can increase death anxiety by making the patients more conscious of the seriousness and physical frailty of the disease. However, there have been very few studies that have investigated this relationship. (Berlin & von Blanckenburg, 2022).

Similarly, there is not much evidence from South Asian cultures, especially Pakistan. There may be cultural values, religious beliefs, and family support that can influence the response of patients to cancer and the fear of death. It becomes difficult to say that the results obtained from the Western cultures are relevant in collectivist culture as well. The studies done specifically for patients suffering from Stage II cancer are not many. (Emanuel et al., 2023).

The current study seeks to address the limitations mentioned above by looking into the associations between coping methods, pain severity, and death anxiety among cancer patients with Stage II cancer. The results obtained from the study can contribute to the existing knowledge on how cancer patients adjust psychologically and develop culture-specific interventions. (Shrestha et al., 2024).

1.6 Research Objectives

The present study was designed to investigate the psychological factors associated with death anxiety among individuals diagnosed with Stage-II cancer. Specifically, the study aimed to:

Objective: To examine the relationships among coping strategies, pain intensity, and death anxiety and determine how these outcomes are associated with demographic and clinical characteristics, including gender, cancer type, illness duration, and family history of cancer, among patients with Stage II cancer.

1.7 Hypotheses

H1: Among patients with cancer, coping strategies will be significantly associated with pain intensity and death anxiety; coping strategies and demographic and clinical characteristics will significantly predict pain intensity; and coping strategies, pain intensity, and death anxiety will differ significantly across cancer types.

H2: Coping strategies and demographic and clinical characteristics will significantly predict pain intensity among patients with cancer.

2. METHODS AND SUBJECTS

The present study used a cross-sectional correlational research design. Participants were recruited through purposive sampling from oncology outpatient departments of selected hospitals. A total of 1,240 patients were initially approached; however, 1,200 patients met the eligibility criteria and agreed to participate in the study. Participants ranged in age from 18 to 75 years and had a confirmed diagnosis of Stage-II cancer. Individuals were included if they were medically stable, attending outpatient treatment services, able to understand the study instructions, and willing to provide informed consent. Patients who had recently undergone major surgery,

experienced severe cognitive impairment or psychiatric conditions affecting their ability to complete the questionnaires or were diagnosed with terminal-stage cancer were excluded from the study.

2.1 Instruments

Following instruments were used to measure the study variables;

2.1.1 Brief COPE Questionnaire

The Brief COPE Questionnaire (Mackay et al., 2021) was employed to evaluate effective and ineffective ways to use coping strategies among cancer patients to handle stress related events. This instrument contains 28 items and comprises four subscales: active coping, problem-focused coping, positive coping, and denial. Responses are measured on a scale ranging from 0 ("I have not been doing this at all") to 4 ("I have been doing this a lot"). The overall reliability coefficient was 0.8 and McDonald's omega (ω) was 0.78.

2.1.2 Numeric Pain Rating Scale (NPRS)

Pain tolerance was assessed using the Numeric Pain Rating Scale (NPRS) unidimensional (Al-Khazali et al., 2024), a unidimensional measure of pain intensity commonly applied in adults with chronic pain conditions, including rheumatic diseases. This scale consists of four items. Participants were asked to provide three pain intensity ratings reflecting their current pain, as well as the least and greatest pain experienced within the past 24 hours. The mean of these three ratings was used as the overall indicator of pain level for the previous 24-hour period. Pain Rating Instructions (adapted from McCaffery, Beebe et al., 1989): Participants were instructed to rate the intensity of their current, least, and worst pain over the past 24 hours using a numerical rating scale ranging from 0 (no pain) to 10 (worst pain imaginable). The overall reliability coefficient was 0.78 and McDonald's omega (ω) was 0.77.

2.1.3 Death Anxiety Inventory

Death anxiety was measured using the *Death Anxiety Inventory* (Hong et al., 2022), originally developed in Spanish and available in an English version. This self-administered questionnaire includes 17 items and uses a dichotomous (yes/no) response format. The overall reliability coefficient was 0.78 and McDonald's omega (ω) was 0.77.

To assess the reliability of the chosen scales, a pilot study with 30 participants diagnosed with cancer was conducted. All three scales - COPE, NPRS, and DAI - revealed themselves to be highly reliable, with reliability coefficients ranging between .87 and .90. Upon receiving an official permission from the hospital administration, the same scales were administered to the main sample consisting of 1,200 participants. They were given detailed information regarding the purpose of the study and directions on filling out the questionnaires.

3. RESULTS

Analysis of data was done using the Jamovi software. Pearson correlation coefficient was used to measure the relationship between the coping strategies, pain intensity, and death anxiety. Linear regression was then done to test whether the coping strategies and pain intensity could predict death anxiety. Finally, Welch's one-way ANOVA followed by Games–Howell post hoc tests were used to compare coping strategies, pain intensity, and death anxiety across different cancer types. The sample consisted of 51.0% males (n = 612) and 49.0% females (n = 588). Cancer types reported were neck cancer (n = 240, 20%), torso cancer (n = 654, 54.5%), limb cancer (n = 198, 16.5%), and hematologic malignancies (n = 108, 9%). Regarding the duration of treatment, 50% of patients (n = 600) had been treated for less than one year, 44.5% (n = 534) for 1 to 5 years, and 5.5% (n = 66) for 6 to 10 years. Furthermore, only 19% of participants reported a family history of cancer.

Table 1. Correlation matrix among coping strategies pain intensity and death anxiety (N= 1,188)

	Actcop	Prob.Foc	Pos.cop	Den.cop	Pain	Death
Actcop	-					
Prob.Foc	-0.030	-				
Pos.cop	0.067*	-0.096***	-			
Den.cop	0.056	-0.009	-0.037	-		
Pain	0.094**	0.090**	0.094**	-0.172***	-	
Death	-0.021	-0.148***	0.054	0.211***	-0.314***	-

Note. Actcp=active coping; Prob.foc= problem focused; Pos.cop=Positive coping; Den.cop=Denial coping; * $p < .05$, ** $p < .01$, *** $p < .001$

Table I presents the correlation matrix (function= *cor( )*) among the study variables. Active coping is weakly positively associated with positive coping (r = .067). Problem-focused coping was associated with lower death anxiety (r = −.148) but slightly higher pain intensity (r = .090). Positive coping was weakly associated with higher pain intensity (r = .094) and was unrelated to death anxiety. Denial coping was associated with higher death anxiety (r = .211) and lower pain intensity (r = −.172). Pain intensity and death anxiety were

Table 2: Multiple linear regression analysis predicting pain intensity among cancer patients (N = 1,188)

Model	R	R^2	Adjusted R^2	AIC	BIC	RMSE
1	0.657	0.432	0.408	8393	8652	7.93

Predictors	B	SE	t	p
Active coping	0.300	0.093	3.211	.001
Positive coping	-0.291	0.113	-2.581	.010
Denial coping	-0.513	0.143	-3.589	< .001
Gender (Ref: Male)				
Female	4.956	0.570	8.694	< .001
Age (Ref: 1–25 years)				
26–50 years	6.316	0.930	6.792	< .001
51–75 years	6.730	1.135	5.932	< .001
76–100 years	11.805	3.975	2.970	.003
Mother's education (Ref: No education)				
Matric	4.424	1.967	2.249	.025
Mother's profession (Ref: Housewife)				
Working woman	-6.223	1.492	-4.172	< .001
Deceased	-3.575	1.321	-2.707	.007
Other	-7.044	2.364	-2.980	.003
Family structure (Ref: Joint)				
Nuclear	-1.872	0.590	-3.175	.002
Patient profession				
Army	-6.123	2.664	-2.299	.022
Marital status (Ref: Married)				
Widowed	-8.874	1.783	-4.976	< .001
Number of children (Ref: None)				
1–5	-3.955	0.947	-4.175	< .001
6–10	-2.921	1.215	-2.405	.016
Cancer Type (Ref: Neck and brain cancer)				
Torso cancer	-1.636	0.715	-2.288	.022
Blood cancer	-4.860	1.121	-4.334	< .001
Illness duration (Ref: <1 year)				
6–10 years	3.227	1.331	2.424	.016
Drug addiction (Ref: Non-smoker)				
Smoking	3.128	0.647	4.832	< .001
Physical problem (Ref: Yes)				
No	-2.988	0.716	-4.171	< .001

Note: * p < .05, ** p < .01, *** p < .001

A multiple linear regression analysis was conducted to examine whether coping strategies and demographic and clinical characteristics predicted pain intensity among cancer patients. The overall model explained 43.2% of the variance in pain intensity (R = .657, R^2 = .432, adjusted R^2 = .408). Among the coping strategies, active coping was positively associated with pain intensity, whereas positive coping and denial coping were

negatively associated with pain intensity (all $p < .05$). Female participants and older age groups reported significantly higher pain intensity than males and younger participants, respectively. Higher pain intensity was also associated with matric-level maternal education, longer illness duration (6–10 years), and smoking. In contrast, lower pain intensity was observed among participants whose mothers were employed or deceased, those from nuclear families, widowed participants, those with children, patients with torso or blood cancer, and those without physical problems. The complete regression coefficients are presented in Table 2.

Table3: Significant predictors of Death Anxiety from the multiple linear regression model (N = 1,188)

Model	R	R^2	Adjusted R^2	AIC	BIC	RMSE
2	0.665	0.443	0.419	6240	6499	3.20

Predictor	B	SE	t	p
Coping strategies				
Positive coping	0.224	0.046	4.914	< .001
Denial coping	0.288	0.058	4.980	< .001
Gender (Ref: Male)				
Female	-0.780	0.230	-3.387	< .001
Mother's education (Ref: No education)				
Matric	1.917	0.795	2.412	.016
Intermediate	-5.279	1.537	-3.435	< .001
Father's education (Ref: Reference category)				
No education	-3.906	1.503	-2.599	.009
Primary	-5.166	1.516	-3.408	< .001
Middle	-4.305	1.534	-2.806	.005
Matric	-6.824	1.516	-4.500	< .001
Intermediate	-8.108	1.546	-5.245	< .001
Graduate	-5.439	1.566	-3.473	< .001
Father's profession (Ref: Army)				
Civil	-1.441	0.480	-3.004	.003
Unemployed	-2.383	0.495	-4.817	< .001
Deceased	-4.054	0.504	-8.043	< .001
Other category	-3.909	0.592	-6.608	< .001
Mother's profession				

Predictor	B	SE	t	p
(Ref: Housewife)				
Deceased	2.174	0.534	4.076	< .001
Other	4.875	0.955	5.104	< .001
Family structure (Ref: Joint)				
Nuclear	0.724	0.238	3.038	.002
Patient profession (Ref: Reference category)				
Army	-6.313	1.076	-5.866	< .001
Civilian	-4.405	1.090	-4.042	< .001
Unemployed	-4.331	1.107	-3.913	< .001
Marital status (Ref: Married)				
Unmarried	-2.944	0.416	-7.073	< .001
Widowed	.429	0.721	1.984	.048
Number of children (Ref: None)				
1–5	-1.657	0.383	-4.329	< .001
6–10	-2.577	0.491	-5.251	< .001
Cancer issue (Ref: Neck and brain cancer)				
Limbs cancer	-2.584	0.364	-7.107	< .001
Illness duration (Ref: < 1 year)				
6–10 years	-1.873	0.538	-3.483	< .001
Drug addiction (Ref: No smoking)				
Other substances	-1.227	0.470	-2.609	.009
Cancer pathology (Ref: Yes)				
No	-0.817	0.299	-2.733	.006

A multiple linear regression analysis was conducted to identify predictors of death anxiety among cancer patients. The overall model explained 44.3% of the variance in death anxiety (R = .665, R^2 = .443, adjusted R^2 = .419). Among the coping strategies, positive coping and denial coping were both positively associated with death anxiety (both p < .001). Female participants reported significantly lower death anxiety than males. Death anxiety was also significantly associated with parental education and parental occupation. Specifically, participants whose fathers had higher levels of education generally reported lower death anxiety, whereas participants whose mothers had matric-level education reported higher death anxiety and those whose mothers had intermediate education reported lower death anxiety compared with the reference group. Participants from nuclear families and widowed individuals reported higher death anxiety, whereas unmarried participants and those with children reported lower death anxiety. Lower death anxiety was also observed among participants with limb cancer, an

illness duration of 6–10 years, other substance use, and those without cancer pathology. The complete regression coefficients are presented in Table 3.

Table 4: Mean, Standard Deviation, F-values on coping strategies, pain intensity, and death anxiety on 4 types of cancer (N = 1188)

	F	*df1*	*df2*	*p*
Active coping	16.877	3	347	<.001
Problem focused	9.582	3	346	<.001
Positive cope	9.220	3	495	<.001
Denial cope	0.244	3	373	0.865
Pain	9.530	3	355	<.001
Death	25.840	3	360	<.001

Descriptive Statistics

	Cancer Type	*N*	*Mean*	*SD*	*SE*
Active Coping	Neck and brain cancer	240	26.57	2.61	0.1686
	Torso cancer	654	26.04	2.97	0.1160
	Limbs cancer	198	24.64	3.07	0.2182
	Blood cancer	108	25.78	3.26	0.3134
Problem focused	Neck and brain cancer	240	15.28	2.62	0.1693
	Torso cancer	654	15.62	2.68	0.1047
	Limbs cancer	198	16.61	2.81	0.1999
	Blood cancer	108	16.06	2.85	0.2743
Positive Coping	Neck and brain cancer	240	19.80	3.93	0.2535
	Torso cancer	654	21.44	23.46	0.9173
	Limbs cancer	198	18.97	3.12	0.2215
	Blood cancer	108	18.17	2.64	0.2542
Denial Coping	Neck and brain cancer	240	8.72	2.31	0.1489
	Torso cancer	654	8.77	2.49	0.0973
	Limbs cancer	198	8.70	2.35	0.1668
	Blood cancer	108	8.89	1.83	0.1762
Pain	Neck and brain cancer	240	22.13	10.63	0.6863

	Cancer Type	*N*	*Mean*	*SD*	*SE*
	Torso cancer	654	22.81	10.78	0.4217
	Limbs cancer	198	23.64	9.56	0.6793
	Blood cancer	108	17.33	10.68	1.0277
Death	Neck and brain cancer	240	27.93	3.52	0.2270
	Torso cancer	654	26.93	4.35	0.1703
	Limbs cancer	198	24.58	4.54	0.3225
	Blood cancer	108	27.78	3.78	0.3639

Welch's one-way analyses of variance were conducted to examine differences in coping strategies, pain intensity, and death anxiety across cancer types (neck and brain, torso, limbs, and blood cancer). Significant differences were observed for active coping, $F(3, 347) = 16.88$, $p < .001$, problem-focused coping, $F(3, 346) = 9.58$, $p < .001$, positive coping, $F(3, 495) = 9.22$, $p < .001$, pain intensity, $F(3, 355) = 9.53$, $p < .001$, and death anxiety, $F(3, 360) = 25.84$, $p < .001$. In contrast, denial coping did not differ significantly across cancer types, $F(3, 373) = 0.24$, $p = .865$. Descriptive statistics indicated that participants with limb cancer reported the lowest active coping and the highest problem-focused coping, whereas participants with neck and brain cancer reported the highest active coping. Patients with limb cancer also reported the highest pain intensity, while those with blood cancer reported the lowest pain intensity. Death anxiety was highest among participants with neck and brain cancer and lowest among those with limb cancer. Descriptive statistics for each cancer type are presented in Table 4.

Table 5: Significant Games–Howell post hoc comparisons across cancer types

Outcome	Comparison	Mean Difference	*p*
Active coping	Neck & brain vs Torso	0.538	.044
	Neck & brain vs Limbs	1.940	< .001
	Torso vs Limbs	1.400	< .001
	Blood vs Limbs	1.141	.016
Problem-focused coping	Limbs vs Neck & brain	1.331	< .001
	Limbs vs Torso	0.982	< .001
Positive coping	Neck & brain vs Blood	1.633	< .001
	Torso vs Limbs	2.471	.045
	Torso vs Blood	3.274	.003
Pain intensity	Neck & brain vs Blood	4.790	< .001
	Torso vs Blood	5.470	< .001
	Limbs vs Blood	6.300	< .001
Death anxiety	Neck & brain vs Torso	0.998	.003
	Neck & brain vs Limbs	3.350	< .001
	Torso vs Limbs	2.350	< .001
	Blood vs Limbs	3.202	< .001

Note. Only statistically significant Games–Howell post hoc comparisons are presented ($p < .05$). Positive mean differences indicate that the first group had higher mean scores than the second group.

Games–Howell post hoc analyses were conducted following significant Welch's ANOVAs to identify pairwise differences between cancer types. Participants with neck and brain cancer reported significantly higher active coping than those with torso and limb cancer, whereas participants with limb cancer reported significantly higher problem-focused coping than those with neck and brain and torso cancer. For positive coping, participants with neck and brain cancer and torso cancer reported significantly higher scores than those with blood cancer, while participants with torso cancer also reported higher positive coping than those with limb cancer. Regarding pain intensity, participants with blood cancer reported significantly lower pain intensity than those with neck and brain, torso, and limb cancer. For death anxiety, participants with limb cancer reported significantly lower death anxiety than those with neck and brain, torso, and blood cancer, whereas participants with neck and brain cancer also reported higher death anxiety than those with torso cancer. Complete post hoc comparisons are presented in Table 5.

4. DISCUSSION

The present study investigated coping strategies, pain intensity, and death anxiety among patients with cancer using correlational, regression, ANOVA, and post hoc analyses. It can be concluded that coping, symptoms, demographic profile, clinical features, and culturally oriented beliefs play a role in coping with cancer rather than simply the coping style. This analysis is in line with modern psycho-oncological research on cancer-associated distress where the disease features and patients' psychological reactions to somatic signs, uncertainty, and threats play a part. (Kumar & Parashar, 2015). It is therefore necessary to consider coping as a complex process of multiple dimensions depending upon the severity of the symptoms, the stage of the illness, and the culture. A patient may adopt a number of adaptive and non-adaptive coping methods instead of using one method only. (Lim et al., 2025).
The correlations, although weak, held conceptual significance. Negative correlation between problem-oriented coping and death anxiety indicates that working through problems associated with an illness might help in developing a feeling of control and reducing existential dread among individuals. This is supported by evidence that suggests that effective planning, acceptance, emotional support, and active illness management lead to better psychological adaptation among cancer patients. (Lim et al., 2025; Oliveira et al., 2021Denial coping, on the other hand, had a positive correlation with death anxiety, confirming previous research that found avoidant/disengaged coping to be correlated with more distress, poorer quality of life, and problems adjusting to uncertainty associated with illness. (Oliveira et al., 2021).
The associations of pain intensity and coping were a little more complicated in nature. Active coping was positively related to pain, while positive and denial coping had negative correlations with pain. The positive relationship of active coping with pain cannot be considered as proof that active coping causes pain in the patients. On the contrary, those patients who feel a lot of pain tend to seek help, take action and try to regain control. This explanation fits well with the fact that the higher burden of symptoms encourages coping efforts. (Ramezanzade Tabriz et al., 2018The negative correlation between denial and pain is suggestive of a short-term distraction from bodily experiences. On the other hand, since denial is also correlated with high levels of death anxiety, there could be a tendency for an individual to experience reduced pain but poorer psychological adaptation. (Kumar & Parashar, 2015).
There was also a notable amount of variance accounted for in the pain intensity model indicating that pain can be understood within the biopsychosocial framework. Pain was higher among females, older people, smokers and those with longer disease duration. Such findings may be related to biological susceptibility, increased disease burden, medication side-effects and unhealthy behaviour. Other literature suggests that there exists variability among individuals in terms of experiencing chronic pain due to their individual differences, while psychological distress, functional limitations and decreased quality of life are linked with cancer pain. Pain was lower among

blood cancer patients in comparison with selected solid tumours due to variations in pain mechanisms. Pain due to solid tumours is mostly localized nociceptive pain, while haematological diseases may have more generalized symptoms like fatigue, anaemia and increased infection susceptibility. (Greer et al., 2020; Lim et al., 2025).

The death anxiety model explained a considerable amount of variance as well, showing that death anxiety is influenced by various demographic, clinical, and psychosocial variables and is not merely an automatic response to a cancer diagnosis. Denial coping showed a positive association with death anxiety, which implies that the use of avoidance can stop patients from processing their concerns regarding prognosis and death. Positive coping also predicted higher death anxiety levels, which is surprising. It does not mean that positive coping is maladaptive. In light of the fact that causality is unknown, patients who experience higher levels of death anxiety would enhance their positive coping as a way of maintaining hope, significance, and emotional balance. Past studies have also found that existential crises or fear of tumor recurrence/progression can trigger a coping process rather than result from it. (Berlin & von Blanckenburg, 2022; Hasan et al., 2022; Xie et al., 2025). This could be attributable to the cultural background. In South Asian and Muslim majority cultures, coping tends to incorporate religious faith, family connectedness, acceptance, and spirituality. As a result, positive coping is likely to be a form of active coping with fear rather than lack of distress. It has been shown in the evidence collected from Pakistan and similar contexts that religious faith, family involvement, and spirituality affect the way cancer patients make sense of their illness, suffering, prognosis, and mortality. Muslim religiosity has been found to be linked with higher optimism and lower death anxiety, partly because of the reduction in depression. Studies conducted on the samples of Pakistani patients indicate that religious faith and meaning in life may act as moderating variables in relation to links between psychosocial assets and death anxiety. Silver-lining perspective and religious coping have been found to be potential protective factors in relation to depression and death anxiety among Pakistani female cancer patients. (Lim et al., 2025; Ośmiałowska et al., 2021).

ANOVA and Games-Howell post hoc results revealed differences in coping strategies, pain intensity, and death anxiety between various cancer types. Cancer of the brain and neck was found to be characterized by increased active coping and death anxiety levels. Cancer that impairs neurologic, sensory, communicative, or identity functions may generate higher existential threats, thus necessitating higher coping efforts from patients. Such an assumption is supported by the available data on the presence of high levels of emotional distress among patients with head and neck cancer. (Erdoğan & Koç, 2021). Patients suffering from blood cancer had low levels of pain, but patients with limb cancer had low levels of death anxiety despite their high levels of pain. This information shows that high levels of pain do not always indicate high levels of death anxiety. Pain may mainly be determined by the location of disease and biological factors while

death anxiety may be mainly determined by perceived prognosis and cultural issues. (Abbas et al., 2022).

These findings have implications for clinical practice by recommending screening for pain as well as for existential distress among cancer patients. Interventions should not focus only on reducing maladaptive coping but should also clarify when apparently adaptive coping reflects unresolved fear. Evidence supports psychosocial and meaning-centred interventions for reducing cancer-related distress, improving pain coping, and addressing death anxiety, with individual and group meaning-centred psychotherapy producing significant improvements in spiritual well-being, hopelessness, and desire for hastened death among patients with advanced cancer (Kumar & Parashar, 2015). A recent meta-analysis further confirms that meaning-centred interventions reliably reduce existential distress and depressive symptoms across cancer survivor populations (Šimunović & Ljubotina, 2020). Culturally sensitive interventions that incorporate family support, spiritual concerns, and patient-specific illness meanings may be especially relevant in collectivistic contexts (Abbas et al., 2022; Berlin & von Blanckenburg, 2022).

The study's cross-sectional, self-report design limits causal interpretation and may be affected by recall, social desirability, and cultural biases. Several relevant clinical and psychosocial factors were not fully examined. Future longitudinal and intervention studies should clarify the direction of these relationships and evaluate culturally adapted coping and meaning-centred approaches (Hasan et al., 2022).

Overall, coping, pain intensity, and death anxiety were interrelated. Problem-focused coping was associated with lower death anxiety, whereas denial was linked to poorer adjustment. These findings support culturally responsive, biopsychosocial cancer care addressing both physical and existential distress.

Author Contributions

Kanwal Shahbaz: Conceptualization, Methodology, Formal analysis, Investigation/data collection, Data curation, Writing: original draft, Writing: review and editing, Supervision, Project administration, Resources
Noreen Akhtar: Methodology, Data curation, Writing: original draft, Writing: review and editing, Project administration, Resources
Ayesha Shahbaz: Writing: original draft, Writing: review and editing, Project administration,
All authors have read and agreed to the published version of the manuscript.

5. FUNDING

None secured, none granted.

5.1 Institutional Review Board Statement

Given the sensitive nature of the study population (cancer patients and assessment of death anxiety), the ethical safeguards were ensured explicitly. The study was conducted in accordance with the principles of the Declaration of Helsinki and received ethical approval from IRB of Holy Family Hospital. Prior to participation, all eligible participants received verbal and written information explaining the purpose of the study, study procedures, the voluntary nature of participation, and their right to decline participation or withdraw from the study at any time without any consequences for their ongoing medical care or treatment. Consent forms were completed by all participants prior to data collection. As a result of the sensitive issues raised during the interview related to coping and death anxiety, participants were told that they were allowed not to answer any of the questions or stop the interview whenever they wished to do so without any negative consequences. Those who appeared distressed were referred to their clinical or psychological services.For the purpose of confidentiality, the questionnaires were coded rather than being identified with personal information.

5.2. Data Availability Statement

Data are unavailable due to privacy and ethical restrictions.

Conflicts of Interest

None to declare.

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