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Household Ritual Expenditure in Bhutan

Evidence from the Household Consumption and Expenditure Survey (HCES) 2025



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FOREWORD

Bhutan's development philosophy, grounded in Gross National Happiness (GNH), recognises culture and spirituality as central pillars of national well-being alongside material progress. Within this framework, religious rituals and ceremonial practices occupy an important place in everyday life, shaping values, strengthening social bonds, and sustaining cultural continuity.

Ritual expenditure, defined as household spending on religious and ceremonial activities, reflects the lived expression of these cultural and spiritual practices. Such expenditures are deeply embedded in social norms, belief systems, and community expectations, and vary across households depending on demographic, spatial, and socio-economic contexts.

This report, Household Ritual Expenditure in Bhutan: Evidence from the Household Consumption and Expenditure Survey (HCES) 2025, presents a systematic analysis of the level, distribution, and determinants of ritual expenditure across Bhutanese households. Using nationally representative data, the study examines patterns of ritual spending and their variation across key population groups.

This report forms part of the National Statistics Bureau Thematic Research Series for the Fiscal Year 2025–26, an initiative that promotes analytical research based on official statistics. Through the generation of evidence-based insights into Bhutan's socio-economic, demographic, and cultural landscape, the series aims to strengthen informed policymaking, development planning, and future research.

The findings provide an empirical overview of how ritual practices are reflected in household expenditure behaviour, contributing to a better understanding of cultural practices within Bhutan's contemporary society. The analysis is intended to support evidence-based discussion and further research on cultural patterns using official statistics. It is hoped that this report will serve as a useful reference for policymakers, researchers, and other stakeholders interested in cultural statistics and household behaviour in Bhutan.



(Sonam Tenzin)

Director General

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The Royal Government of Bhutan is gratefully acknowledged for providing financial support for this thematic research on household ritual expenditure, implemented under the National Statistics Bureau's Annual Work Plan. This support facilitated the preparation, analysis, and dissemination of the findings presented in this report.

Last but not the least, appreciation is extended to all participating households across Bhutan for their cooperation and willingness to provide detailed information on household consumption and expenditure.

EXECUTIVE SUMMARY

This study examines the level, distribution, and determinants of household ritual expenditure in Bhutan using the Household Consumption and Expenditure Survey (HCES) 2025. Ritual expenditure is defined as household spending on routine religious and ceremonial activities, with funeral and birthday-related expenses excluded to focus on regular, recurrent ritual behaviour rather than infrequent, high-cost life-cycle events.

At the national level, households allocate an average of Nu. 27,689 annually to ritual activities, equivalent to 4.9 percent of total consumption. However, spending is highly uneven across households: the median expenditure is Nu. 12,000, and about 31.6 percent of households report no ritual spending. General rituals account for most of the expenditure, while health-related rituals form a smaller but more concentrated component.

Clear socio-economic and spatial patterns emerge. Rural households allocate a substantially higher share of consumption to rituals (6.4 percent) compared to urban households (2.5 percent). Across consumption quintiles, absolute spending increases steadily with economic status, while the expenditure share declines, indicating a more pronounced relative budget allocation among lower-income households.

Spatial distribution mapping highlights significant regional variation across Dzongkhags. The highest mean annual household ritual expenditures are concentrated in Wangdue Phodrang (Nu. 57,021) and Punakha (Nu. 50,065), followed closely by Haa (Nu. 37,907), Paro (Nu. 36,886), and Gasa (Nu. 36,565). Conversely, the lowest average allocations are recorded in Samtse (Nu. 11,741) and Samdrup Jongkhar (Nu. 12,879), reflecting distinct regional demographic variations and differing household expenditure profiles.

Econometris estimates confirm strong and systematic associations between ritual expenditure and household characteristics. Female-headed households, older household heads, and higher-consumption households tend to allocate more to rituals, while education is associated with lower expenditure. Urban households spend significantly less than rural households. Household size shows limited influence once other factors are controlled for.

Overall, ritual expenditure represents a meaningful but uneven component of household consumption in Bhutan. It rises with economic capacity in absolute terms, yet commands a proportionally larger share of resources within lower-income households, reflecting the profound interaction between cultural obligations, lifecycle dynamics, and economic frameworks.

Note: Unless otherwise specified, all reported currency figures represent mean and median annual household ritual outlays calculated in Bhutanese Ngultrum (Nu.). All data-driven tables and non-map figures within this paper are derived from the HCES 2025 Public User File (PUF).

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ABBREVIATIONS AND ACRONYMS

Abbreviation	Full Description / Statistical Definition
CI	Confidence Interval
EA	Enumeration Area (Primary Sampling Unit)
GLM	Generalized Linear Model
GNH	Gross National Happiness
HCES	Household Consumption and Expenditure Survey
HQI	Housing Quality Index
NSB	National Statistics Bureau
Nu.	Bhutanese Ngultrum (Official Currency Baseline)
OLS	Ordinary Least Squares
PUF	Public Use File (Survey Microdata Matrix)
RCSC	Royal Civil Service Commission
RGoB	Royal Government of Bhutan
SD	Standard Deviation
SE	Standard Error
VIF	Variance Inflation Factor (Multicollinearity Diagnostic)

1.1 Background

The development trajectory in Bhutan is anchored in the philosophy of Gross National Happiness (GNH), a holistic framework that emphasizes balanced progress across material, cultural, spiritual, environmental, and institutional dimensions (Ura et al., 2012). Within this paradigm, culture and spirituality are recognised as integral components of national well-being, distinguishing Bhutan's development approach from conventional economic models that prioritise material growth alone.

Religious rituals and ceremonies such as *rimdo*, *lochoe*, *sang*, *lue*, astrology consultations, and butter-lamp offerings form an essential part of Bhutanese Buddhist practice and contribute to spiritual well-being, social cohesion, and the preservation of intangible cultural heritage (Pommaret, 2009).

These ritual practices are deeply embedded in social life and reflect long-standing Buddhist beliefs that prosperity, health, security, and interpersonal harmony arise from both spiritual merit and collective action. Participation in rituals is widely regarded as an expression of faith, reciprocity, and communal obligation.

Beyond their spiritual function, rituals also operate through social capital mechanisms, as households engage in such practices to meet cultural expectations, maintain social standing, and strengthen interpersonal networks (Childs, 2004).

Despite their cultural and spiritual significance, ritual-related expenditures have important implications for household welfare. Evidence from the Bhutan Living Standards Survey (BLSS 2022) indicates that miscellaneous expenditures account for 18.3 percent of non-food household spending (National Statistics Bureau, 2022).

International evidence from South Asia and Sub-Saharan Africa shows that ceremonial expenditures can both strengthen social cohesion and impose financial burdens, particularly when socially obligatory or debt-financed (Bloch et al., 2004); (Guyer, 1993).

Against this backdrop, this study — *Ritual Expenditure and Welfare in Bhutan* — provides an empirical assessment of the magnitude, distribution, and determinants of ritual spending using HCES 2025 data.

1.2 Rationale

Ritual expenditure represents an important intersection between cultural norms and household economic behaviour. It influences consumption allocation decisions and reflects identity, social obligations, and spiritual beliefs.

Understanding its distribution is therefore relevant for welfare analysis and policy discussions within the GNH framework.

1.3 Objectives

The objectives of this study are to:

1. Quantify the level and distribution of household ritual expenditure at the national level, including its share in total consumption
2. Examine spatial variation across rural–urban areas and dzongkhags
3. Assess socio-economic differentials in ritual expenditure
4. Identify the key determinants of ritual expenditure at the household level

1.4 Research Questions

1. What is the level and distribution of household ritual expenditure across consumption quintiles, areas, and dzongkhags?
2. How is ritual expenditure associated with household characteristics such as education, age, gender, and household size?
3. What are the main determinants of ritual expenditure after controlling for socio-economic factors?
4. What share of household budgets is allocated to ritual expenditure, and how does this vary across groups?

1.5 Key Concepts and Definitions

Ritual practices Refer broadly to religious and ceremonial activities embedded in Bhutanese Buddhist and cultural traditions.

Ritual expenditure Refers to household spending on religious and ceremonial activities. For empirical analysis, funeral and birthday-related expenditures are excluded to focus on routine ritual behaviour.

General ritual expenditure Refers to routine offerings, prayers, and ceremonial services.

Health-related ritual expenditure Refers to ritual spending associated with illness or misfortune.

Household consumption Refers to total annual household consumption expenditure recorded in HCES 2025.

Ritual expenditure share Is the proportion of total consumption allocated to ritual activities.

Consumption quintiles Classify households into five equal groups based on total consumption.

Urban and rural Classification follows HCES 2025 definitions.



LITERATURE REVIEW

The literature conceptualises rituals in a broad anthropological and religious sense, encompassing both routine religious practices and life-cycle ceremonies such as births, marriages, and funerals. The following review adopts this broad understanding to situate ritual practices within cultural, social, and economic theory; however, the empirical measurement in this study applies a narrower operational definition as outlined in the methodology.

Rituals are culturally prescribed, symbolic, and sequenced actions that generate meaning, reinforce collective identity, and help individuals navigate uncertainty (Bell, 1997); (Durkheim, 1995); (Turner, 1969). In Vajrayana Buddhist societies such as Bhutan, rituals function as key mechanisms for accumulating merit (*bsod nams*), enhancing spiritual empowerment (*dbang thang*), averting misfortune, and ensuring favourable rebirths (Swann, 2025).

Classical Buddhist texts — including the *Bodhicaryāvatāra* (Śāntideva, 1997) and numerous sādhanas preserved in the *Rinchen Terdzö* (Thaye, 1976) — explicitly frame offerings and pūjās as karmically productive investments. These scriptural traditions continue to legitimise everyday Bhutanese rituals such as *rimdo*, *lochoe*, *sang*, butter-lamp offerings, prayer-flag hoisting, and propitiation of local deities (Phanchung, 2022); (Pelzang, 2010); (Phuntsho, 2013). Collectively, these practices sustain cultural continuity, protect health, reinforce reciprocity, and shape moral and spiritual life even amidst rapid social and economic change (Allison, 2019).

2.1 Rituals, Cosmology, and Everyday Life in Bhutan

Bhutanese cosmology intertwines Mahāyāna–Vajrayana Buddhism with pre-Buddhist animistic traditions. Mountain peaks are believed to be inhabited by *yul lha* (territorial deities), lakes by *tsho sman*, water bodies by *chu gi lha mo*, cliffs by *btsan*, and the earth by *sa bdag* and *lu*. These beings are understood to possess agency, capable of bestowing health and prosperity when appeased or inflicting illness, misfortune, and natural calamities when angered (Allison, 2019); (Pommaret, 2009).

Rituals aimed at propitiating such entities remain widespread across Bhutan. Practices such as Gott pūjā, Deva pūjā, and Mahadev Than among southern Lhotsampa communities; Lhasey, Kangsoel, Lochoe, and Kencho Choeni in western Bhutan; and Lha-soel, Chorkhor, and Lhasey in the east exemplify the regional diversity of ritual traditions (Phanchung, 2022); (Wangmo & Phanchung, 2024). These rituals are conducted by monks, lay tantric practitioners (*gomchen*), and in some regions shamans (*pawo*, *neyjom*), underscoring Bhutan’s pluralistic religious landscape.

Seasonal and agrarian rituals — such as Chunyip Losar, Lomba, Yangkhum, and Lhabön — express gratitude for agricultural harvests and seek blessings for fertility, weather, and prosperity (Phanchung, 2022). Rituals are also embedded in life-cycle events. Pregnancy and birth involve astrological consultations (*tsep*), birth chart preparation (*ketse*), naming

ceremonies, and first-haircut rituals (Doma, 2015). Death rituals aim to ensure favourable rebirths and spiritual protection for surviving families (Pelzang, 2010).

Together, these practices demonstrate that spirituality, wellbeing, and social status are deeply interwoven throughout Bhutanese life.

2.2 Rituals, Health, and Well-being

Bhutan's healthcare landscape reinforces the cultural logic of ritual practice by operating alongside biomedical approaches. Illness is frequently attributed to displeased deities, malevolent spirits, black magic, or karmic causes. Consequently, healing rituals — such as *rindro*, *sang*, *serkem*, and *Menlha* prayers — are frequently performed alongside biomedical treatment (Pelzang, 2010). These practices provide psychological comfort, strengthen social support, reduce anxiety, and contribute to a holistic understanding of health and healing.

2.3 Rituals, Social Capital, and Community Cohesion

Rituals reinforce lineage obligations, household identity, and intergenerational values (Huber, 2020), generating bonding and bridging social capital (Putnam, 2000). They also function as informal safety nets during illness, death, or economic shocks (Scott, 1976); (Turner, 1969).

Ethnographic evidence from the Himalayas shows that communal rituals create dense reciprocal networks of mutual support (Childs, 2004); (Jackline, 2025). While ritual expenditure can strain poor households or crowd out consumption (Bloch et al., 2004), it often enhances long-term resilience through strengthened social ties (Mosse, 2005). In Bhutan, these dynamics align with the Gross National Happiness (GNH) framework, where cultural participation is central to wellbeing.

2.4 Theoretical Perspectives on Ritual Expenditure

Conventional neoclassical economics assumes that households maximise utility under binding budget constraints, treating consumption as substitutable and primarily material in motivation. However, persistent ritual expenditure — especially among low-income households — challenges this assumption.

Identity economics suggests that individuals derive utility from actions that reinforce social and religious identities, where participation signals conformity to norms and social expectations (Akerlof & Kranton, 2010). Mental accounting theory proposes that households separate expenditures into psychological categories, treating ritual spending as a distinct “spiritual account” that is not directly traded off against material consumption (Thaler, 1999); (Zelizer, 1994).

From a signalling perspective, rituals act as positional goods that communicate piety, reliability, and social status within communities (Spence, 1973); (Hirsch, 1976). Moral economy approaches emphasise that rituals reflect embedded norms of reciprocity and informal insurance in contexts with weak formal institutions (Scott, 1976); (Fafchamps, 1992). Experiential utility frameworks highlight intrinsic psychological benefits such as meaning-making, anxiety reduction, and spiritual reassurance (McCauley & Lawson, 2002).

Empirical evidence from South Asia and Southeast Asia indicates that ritual expenditure is persistent across income groups, often increases with wealth, and is strongly shaped by life-cycle and social expectations (Beatty, 1999); (Childs, 2004).

2.5 Ritual Expenditure, Poverty, and Household Welfare

Across South and Southeast Asia, ceremonial expenditures constitute a significant share of household budgets. In Bhutan, ritual costs vary widely and can be substantial, particularly for funerals (Daily Bhutan, 2026).

While ritual spending can strengthen social capital, it may also increase debt and reduce consumption of essentials (Bloch et al., 2004). Evidence remains mixed: some studies identify welfare trade-offs, while others emphasise resilience through reciprocity systems (Mosse, 2005).

National surveys such as the BLSS have historically collected ritual expenditure, but aggregation within broader categories limited analytical precision. The HCES 2025 improves on this by providing more disaggregated data, enabling a more detailed analysis of ritual spending patterns (National Statistics Bureau, 2025).

3.1 Data Source

This study utilises data from the Household Consumption and Expenditure Survey (HCES) 2025, a nationally representative survey conducted using a stratified multi-stage sampling design. The survey covers 5,883 sampled households, representing 159,808 households nationally, thereby enabling population-representative inference for Bhutan. All estimates incorporate survey weights and account for clustering and stratification to ensure unbiased and nationally representative results. The unit of analysis is the household.

3.2 Econometric Approach

The primary outcome variable is annual household ritual expenditure, defined as total expenditure on religious and ceremonial activities. To comprehensively analyse both the scale and distributional patterns of ritual spending, the study employs two complementary specifications: (i) a linear specification using absolute expenditure values and (ii) a log-transformed specification of ritual expenditure.

The log transformation is applied for three primary reasons. First, ritual expenditure is highly right-skewed, with a small number of households reporting very high values that can disproportionately influence linear estimates. Second, the log form reduces the influence of extreme values and improves the stability of regression estimates by compressing the upper tail of the distribution. Third, it enables proportional interpretation of coefficients, allowing results to be expressed in relative terms (Deaton & Zaidi, 2002; Haughton & Khandker, 2009).

Accordingly, the linear model captures absolute differences in expenditure levels, while the log specification captures relative differences in expenditure intensity across households.

3.3 Explanatory Variables

The selection of explanatory variables is guided by established empirical literature on household consumption behaviour. Key covariates include education level, age and gender of the household head, household size, area of residence, consumption quintile, and housing quality. These variables are widely recognised as core determinants of household expenditure patterns in welfare analysis (Deaton & Zaidi, 2002; Haughton & Khandker, 2009).

3.4 Descriptive Analysis

Descriptive statistics are used to summarise the level, distribution, and relative importance of household ritual expenditure across population groups. Survey-weighted means, medians, and

proportions are computed to ensure national representativeness. Medians are emphasised at the national level due to the highly skewed nature of expenditure data.

Ritual expenditure is analysed in both absolute terms and as a share of total household consumption to capture its relative budget importance. All indicators are disaggregated by socio-economic characteristics including area of residence, consumption quintile, gender of household head, housing quality, and household size.

3.5 Inferential Analysis

To examine the determinants of ritual expenditure while accounting for multiple household characteristics, survey-weighted regression models are estimated under two specifications: a linear model and a log-transformed model.

The log transformation is specified as $\ln(\text{Expenditure} + 1)$ to accommodate zero values in the dataset while reducing skewness and improving model stability.

3.6 Model Specification

3.6.1 Model 1: Linear Specification (Level)

$$Y_i = \beta_0 + \beta_1 \text{Edu}_i + \beta_2 \text{Age}_i + \beta_3 \text{Gender}_i + \beta_4 \text{HHsize}_i + \beta_5 \text{Quintile}_i + \beta_6 \text{Area}_i + \beta_7 \text{Housing}_i + \varepsilon_i \quad (1)$$

Equation 1 represents the linear relationship between household ritual expenditure and its determinants.

3.6.2 Model 2: Log-Transformed Specification

$$\ln(Y_i + 1) = \beta_0 + \beta_1 \text{Edu}_i + \beta_2 \text{Age}_i + \beta_3 \text{Gender}_i + \beta_4 \text{HHsize}_i + \beta_5 \text{Quintile}_i + \beta_6 \text{Area}_i + \beta_7 \text{Housing}_i + \varepsilon_i \quad (2)$$

Equation 2 presents the semi-log specification used to estimate proportional effects.

3.6.3 Variable Definitions

Y_i	Annual household ritual expenditure
Edu_i	Education level of household head
Age_i	Age of household head
Gender_i	Gender of household head
HHsize_i	Household size
Quintile_i	Consumption quintile
Area_i	Area of residence (urban/rural)
Housing_i	Housing quality index

ε_i Error term

3.7 Diagnostic Checks

Model diagnostics indicate no evidence of severe multicollinearity, with all Variance Inflation Factors (VIFs) within acceptable ranges.

Heteroskedasticity tests indicate statistically significant non-constant variance ($p < 0.001$), which is common in cross-sectional expenditure data. The log specification improves variance stability relative to the level model.

Residual diagnostics indicate substantial skewness in the linear specification, while the log specification exhibits improved symmetry and closer adherence to normality assumptions.

Influence diagnostics show that results are not driven by a small number of extreme observations, and the log specification reduces sensitivity to outliers.

3.8 Limitations

This study is based on cross-sectional household survey data and does not allow for causal inference. Estimated relationships should therefore be interpreted as associations rather than causal effects.

The analysis includes all observed values of ritual expenditure, including zero values, which may reflect either non-participation or reporting behaviour.

Ritual expenditure is constructed from HCES 2025 microdata and excludes funeral-related expenditures to focus on routine ritual behaviour. All variables are constructed by the authors from survey microdata.

Finally, results are specific to the 2025 survey period and may not be fully generalisable to other time periods due to changes in economic and cultural conditions.

4.1 Descriptive Analysis

This section presents descriptive evidence on household ritual expenditure using the Household Consumption and Expenditure Survey (HCES) 2025. The analysis examines national patterns, relative burden, socio-economic variation, and spatial distribution.

4.1.1 National Overview

Ritual expenditure constitutes a measurable and economically meaningful component of household consumption in Bhutan. Households spend an average of Nu 27,689 annually on ritual activities, accounting for 4.9 percent of total consumption when computed at the household level. At the aggregate national level, the share is 4.2 percent (Table 1).

The distribution of annual ritual expenditure across Bhutanese households is strongly right-skewed, characterized by a significant mass of zero-expenditure households and a long upper tail of high-value spenders.

Consequently, relying solely on the sample mean overstates the typical household's commitment. The median total expenditure is Nu 12,000, indicating a strongly right-skewed distribution. Approximately 31.8 percent of households report zero ritual expenditure.

General rituals are widely observed (median Nu 6,000), while health-related rituals are highly concentrated (median = 0; 66.1 percent zero expenditure).

Ritual expenditure comprises general and health-related rituals. General rituals account for Nu 21,735 on average, while health-related rituals account for Nu 5,954. Together, they form a consistent share of household budgets.

Table 1 : Distribution of Annual Household Ritual Expenditure in Bhutan

Ritual Type	Statistics			Zero Share (%)
	Mean	SE	Median	
General	21,735.32	761.82	6,000.00	45.00
Health-related	5,954.18	288.11	0.00	66.18
Total	27,689.50	872.55	12,000.00	31.88

4.1.2 Variation in Ritual Expenditure by Area of Residence

Ritual expenditure varies substantially between rural and urban households. Rural households allocate a significantly higher share of their consumption to rituals compared to urban households (Table 2). In proportional terms, rural households spend approximately 6.4 percent of their total consumption on rituals, compared to 2.5 percent among urban households. This indicates a stronger relative commitment to ritual practices in rural areas.

Table 2 : Ritual Expenditure by Area of Residence

Area of Residence	Absolute Consumption Expenditure (Nu)		Share of Consumption Expenditure (%)	
	Mean	SE	Mean	SE
Rural	32,462.99	1,223.30	6.39	0.22
Urban	19,852.03	1,156.76	2.52	0.13

In absolute terms, rural households also report higher levels of ritual expenditure, suggesting that both participation and intensity of ritual spending are higher outside urban centers. Together, these findings point to structural differences in cultural practices, social expectations, and consumption priorities across geographic areas.

4.1.3 Variation Across Expenditure Quintiles

Ritual expenditure exhibits a clear gradient across household consumption levels. In absolute terms, spending increases monotonically with expenditure quintile (Table 3), indicating that ritual expenditure behaves as a normal good.

Table 3 : Ritual Expenditure by Consumption Quintile

Consumption Quintile	Absolute Consumption Expenditure (Nu)		Share of Consumption Expenditure (%)	
	Mean	SE	Mean	SE
Q1 (Lowest)	13,538.85	826.56	5.90	0.35
Q2	21,305.29	975.01	5.73	0.27
Q3	26,083.41	1,256.58	5.02	0.25
Q4	32,400.07	1,554.47	4.44	0.21
Q5 (Highest)	45,129.96	2,181.65	3.55	0.17

However, in proportional terms, the pattern is reversed. Lower-consumption households allocate a larger share of their total expenditure to rituals compared to higher-consumption households. Specifically, households in the lowest quintile devote approximately 5.9 percent of their consumption to rituals, compared to 3.5 percent among those in the highest quintile. This divergence between absolute and proportional measures indicates that ritual expenditure is regressive in relative terms, placing a higher budgetary burden on poorer households despite lower absolute spending.

4.1.4 Socio-Demographic Patterns in Ritual Expenditure

Ritual expenditure varies across key household characteristics, including age, gender, education, and household size.

4.1.5 Sex of Household Head

Female-headed households report higher mean ritual expenditure compared to male-headed households (see Table 4). This may reflect differences in household roles, social expectations, or participation in ritual activities.

Table 4 : Ritual Expenditure by Sex of Household Head

Sex of Household Head	Statistics	
	Mean	SE
Female	32,340.93	1,240.01
Male	24,879.18	934.75

4.1.6 Age of Household Head

Ritual expenditure varies across age groups of household heads. As shown in Figure 1, households headed by older individuals tend to spend more on general and health-related rituals compared to younger households. This pattern likely reflects stronger adherence to traditional practices and increased engagement in religious activities among older age groups.

4.1.7 Age of Household Head

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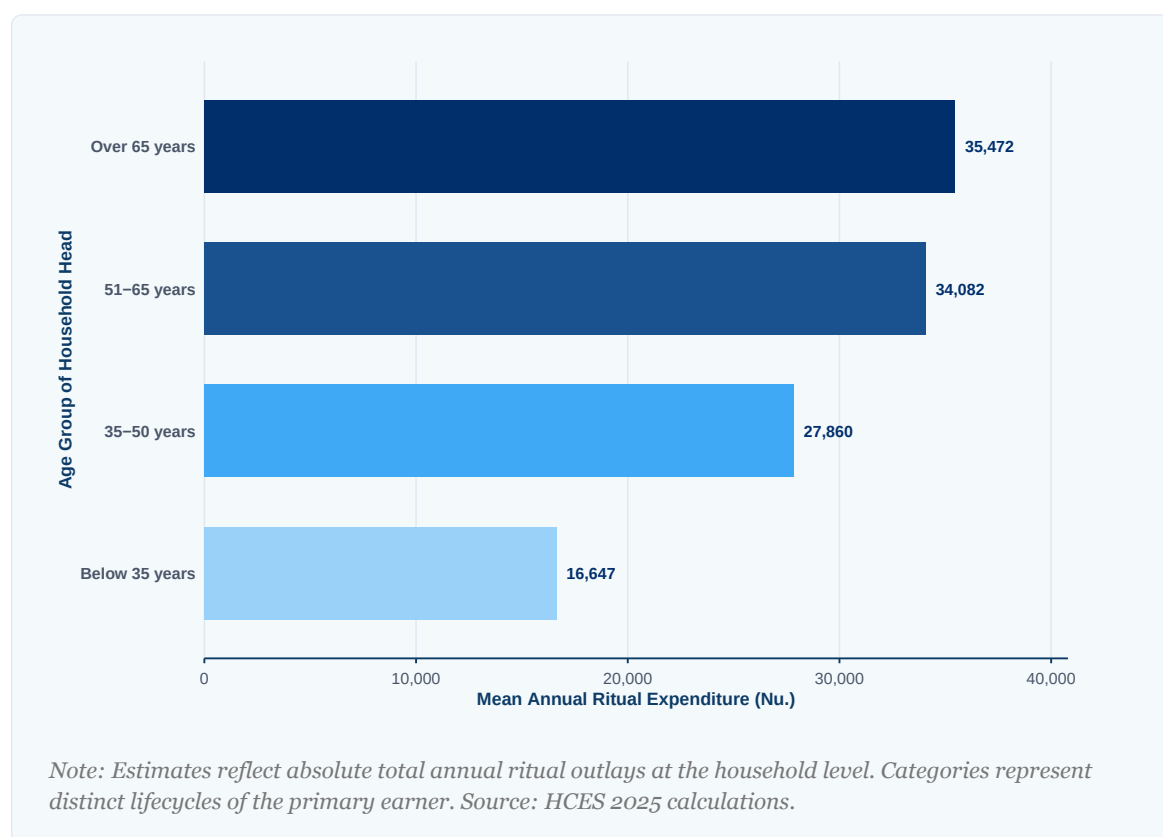


Figure 1 : Mean Ritual Expenditure by Age Group of Household Head

4.1.8 Household Size

Ritual expenditure varies with household size (see Table 5). Larger households tend to incur higher ritual expenditure, potentially due to greater participation in family and community-based ceremonies.

Table 5 : Ritual Expenditure by Household Size

Household Size	Statistics	
	Mean	SE
1-3	23,540.01	1,086.55
4-5	28,688.27	1,053.83
6+	38,998.20	1,872.59

4.1.9 Education

Educational attainment is negatively associated with ritual expenditure (Figure 2). Households with tertiary education report lower levels of ritual expenditure compared to those with no formal education, suggesting differences in preferences or priorities.

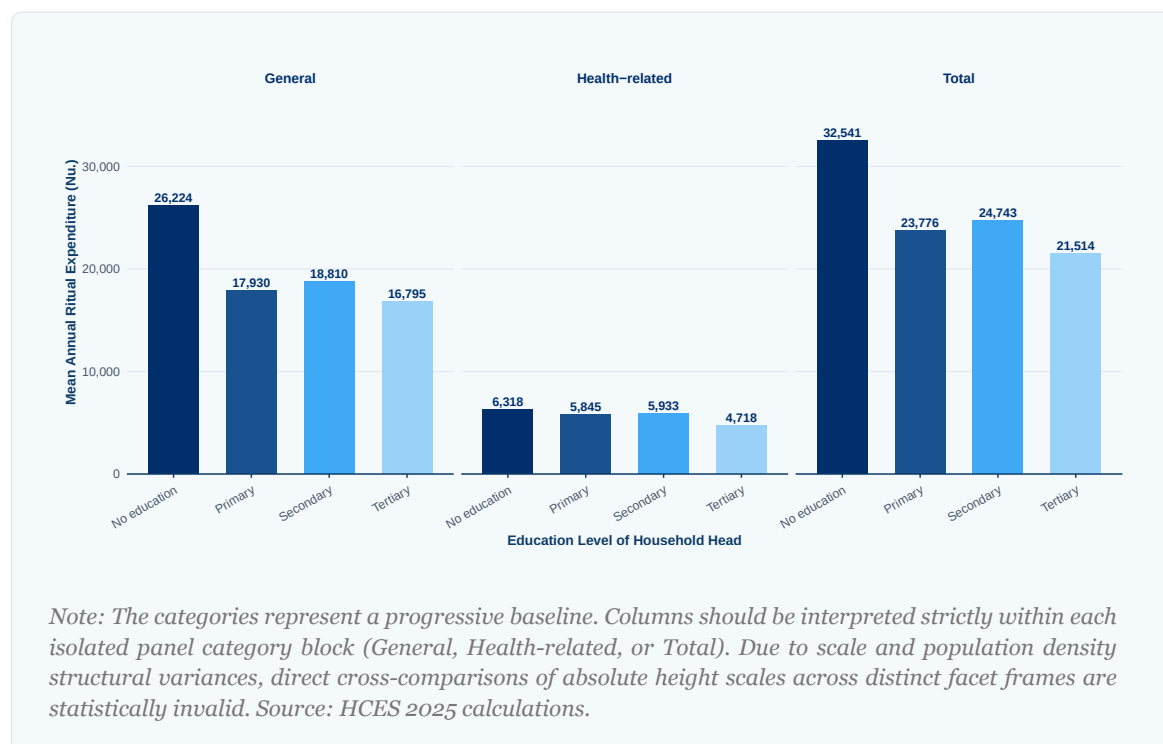


Figure 2 : Mean Ritual Expenditure by Education Level of Household Head

4.1.10 Housing Quality

Ritual expenditure varies across housing quality categories (Table 6). Households with higher housing quality tend to report higher expenditure, reflecting underlying wealth effects.

Table 6 : Ritual Expenditure by Housing Quality

Housing Quality	Statistics	
	Mean	SE
Low quality	21,051.66	3,557.19
Medium quality	35,593.12	1,639.79
High quality	24,097.23	894.66

4.1.11 Composition and Structure of Ritual Expenditure

The relationship between household consumption levels and ritual expenditure is illustrated in Figure 3. A clear positive gradient is observed across quintiles. General ritual expenditure increases from Nu 10,806 in the lowest quintile (Q1) to Nu 34,094 in the highest quintile (Q5). Health-related ritual expenditure follows a similar pattern, rising from Nu 2,733 in Q1 to Nu 11,036 in Q5. Consequently, total ritual expenditure increases from Nu 13,539 among households in the lowest quintile to Nu 45,130 among those in the highest quintile.

The monotonic increase across quintiles indicates that ritual expenditure behaves as a normal good: households with higher overall consumption allocate greater absolute amounts to ritual activities. The gradient is consistent across both general and health-related components, suggesting that rising household resources are associated with expanded ritual participation rather than substitution between categories.

These findings reinforce the broader pattern observed in the preceding sections—ritual expenditure is positively associated with household consumption level, while remaining a meaningful component of expenditure across the entire distribution.

4.1.12 Composition and Structure of Ritual Expenditure

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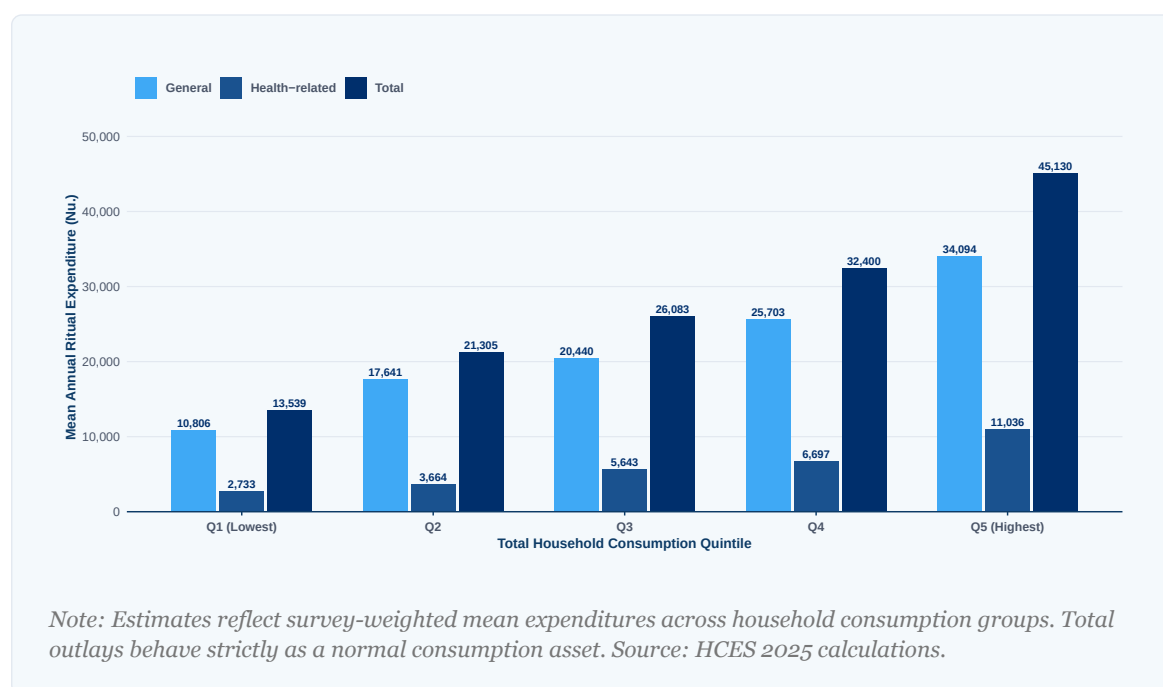


Figure 3 : Distribution of Ritual Expenditure by Total Household Consumption Quintile

Ritual expenditure is dominated by general ceremonial activities, which account for the majority of total spending across all groups. Health-related rituals constitute a smaller but meaningful share, particularly in urban areas where their relative importance is higher (Figure 4). The composition of spending remains broadly consistent across socio-economic groups, with increases in total expenditure driven primarily by higher spending on general rituals.

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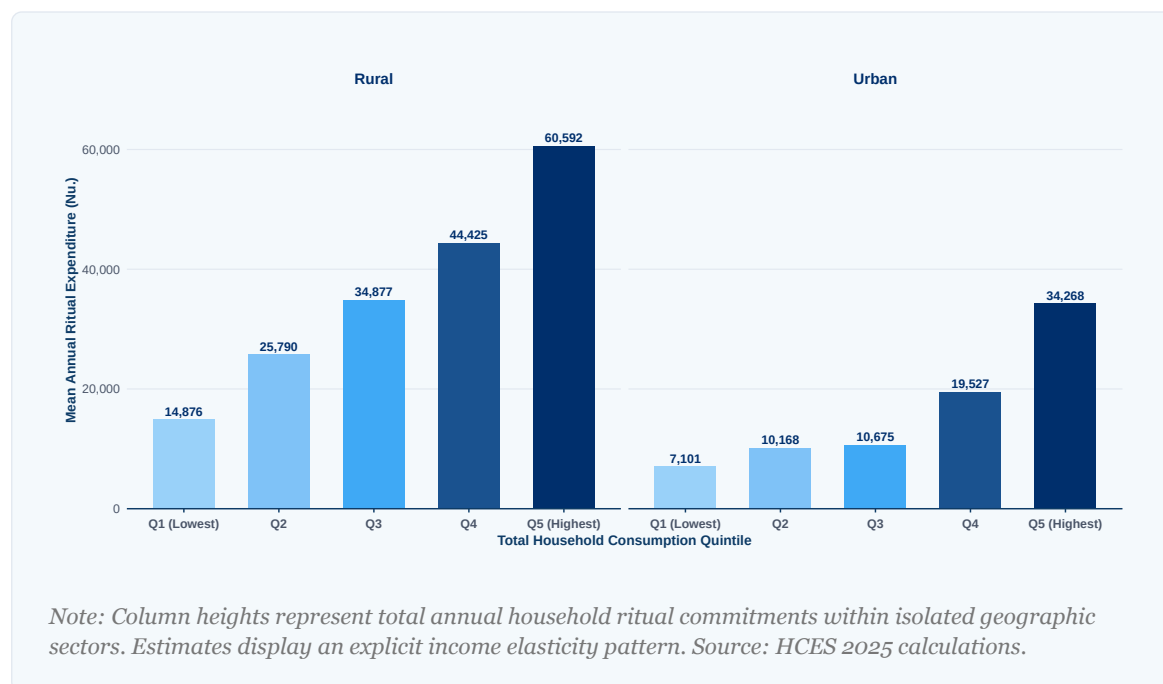


Figure 4 : Distribution of Ritual Expenditure by Area and Household Consumption Quintile

4.1.13 Spatial Distribution of Ritual Expenditure

The maps present the spatial distribution of ritual expenditure across Dzongkhags using equal-count quintile classification. By construction, each quintile contains approximately 20 percent of Dzongkhags; therefore, the maps should be interpreted as relative positioning rather than absolute differences.

Across all three expenditure categories, a consistent spatial pattern emerges. Dzongkhags in western Bhutan—particularly Haa, Paro, Punakha, and Wangdue Phodrang—tend to fall within the higher expenditure quintiles, while southern and south-eastern Dzongkhags such as Chhukha, Samdrup Jongkhar, Samtse, and Tsirang are more frequently located in the lower quintiles. This suggests a broad west–south gradient in ritual expenditure intensity.

For general ritual expenditure (Figure 5), the spatial dispersion is moderate, with a coefficient of variation of 0.38 and a range of Nu 38,851. Higher expenditure is concentrated in a cluster of western and central Dzongkhags, suggesting that ritual spending is not uniformly distributed but instead shows clear regional clustering. A similar pattern is observed for health-related ritual expenditure (Figure 6), although with slightly lower dispersion (CV = 0.34; range = Nu 7,927). Dzongkhags such as Mongar, Punakha, Trongsa, and Wangdue Phodrang exhibit relatively higher spending, indicating that health-related ritual practices may be more sensitive to local institutional or cultural variation than purely economic factors.

For total ritual expenditure (Figure 7), the spatial pattern is broadly consistent with the general expenditure map, with western Dzongkhags again dominating the upper quintiles. The

coefficient of variation (0.34) and range (Nu 45,280) indicate meaningful but not extreme spatial inequality.

Overall, while quintile-based classification limits interpretation to relative ranking, the consistency of spatial clustering across all three measures suggests that ritual expenditure is not randomly distributed across Dzongkhags. Instead, it reflects underlying structural and cultural heterogeneity, potentially linked to differences in income levels, access to religious institutions, demographic composition, and regional ritual traditions. These patterns are descriptive and warrant further multivariate spatial analysis to identify causal drivers.

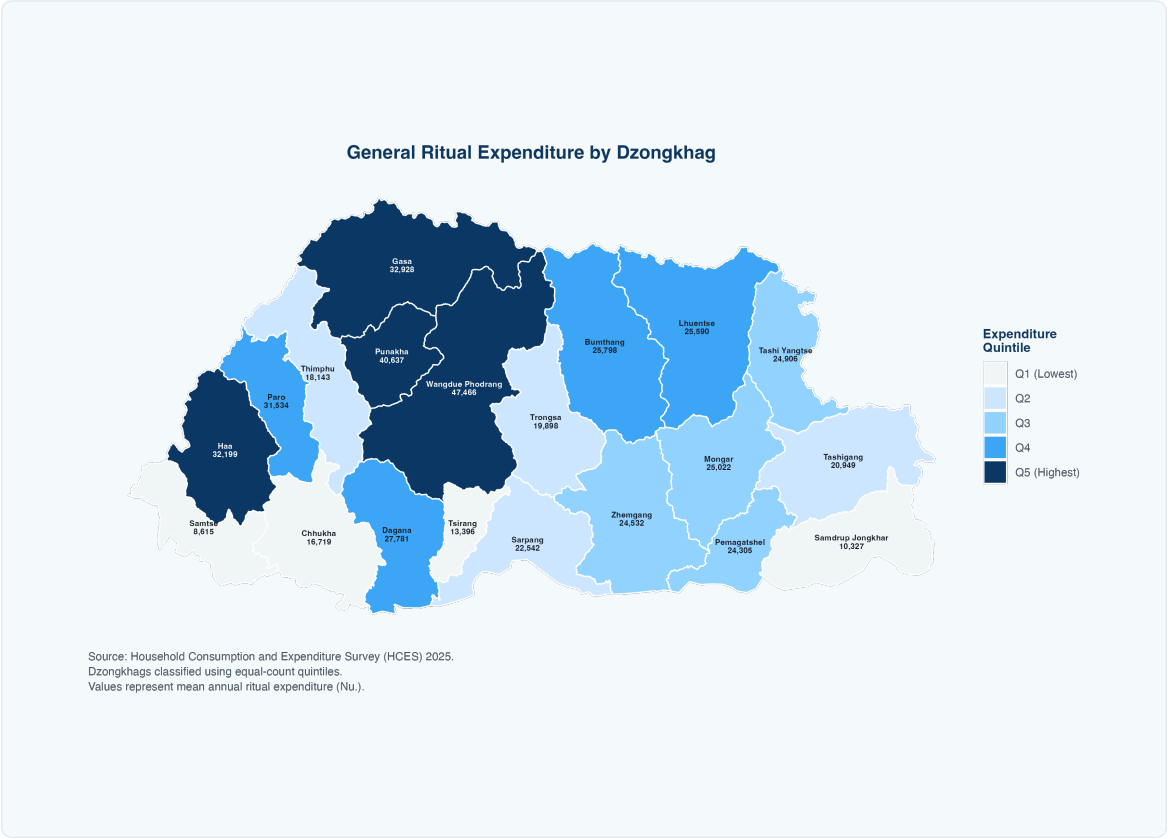


Figure 5 : Spatial Distribution of General Ritual Expenditure by Dzongkhag

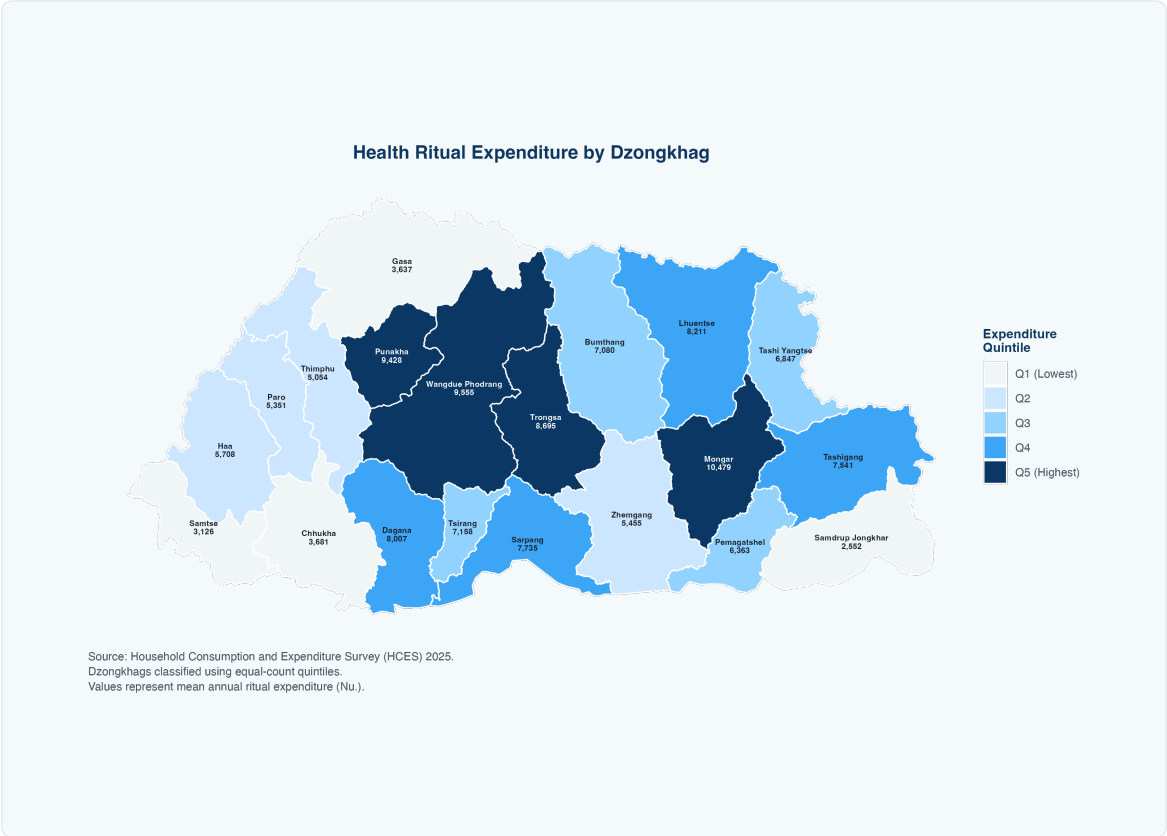


Figure 6 : Spatial Distribution of Health-Related Ritual Expenditure by Dzongkhag

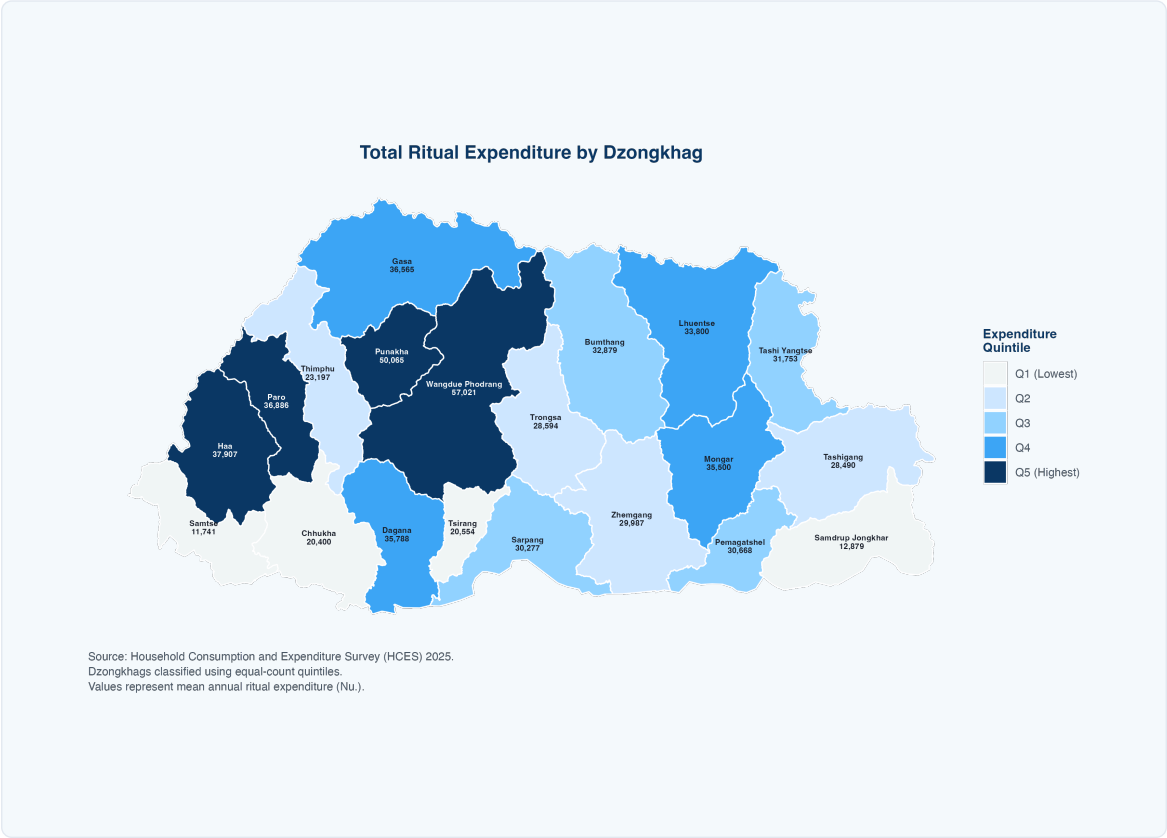


Figure 7 : Spatial Distribution of Mean Ritual Expenditure (Total) by Dzongkhag

4.2 Inferential Analysis

To complement the descriptive analysis, survey-weighted regression models are estimated to examine the determinants of household ritual expenditure. The primary specification uses a log-transformed dependent variable to account for the highly skewed distribution of ritual expenditure and to facilitate interpretation in proportional terms. A level specification is additionally estimated as a descriptive benchmark. Robustness checks using a Yeo–Johnson transformation yield substantively similar results, confirming the stability of the main findings.

4.2.1 Overall Pattern of Ritual Expenditure

Ritual expenditure exhibits substantial heterogeneity across households. At a descriptive level, higher expenditure is concentrated among rural households, households in higher consumption quintiles, older age groups, and larger households. In contrast, urban households, more educated household heads, and households with higher housing quality tend to report lower levels of ritual expenditure.

These patterns indicate that ritual expenditure is not evenly distributed but is systematically associated with household socio-economic status and demographic characteristics. The observed gradients motivate the econometric analysis presented below.

4.2.2 Key Determinants

The results from the log-linear specification (Table 7) are complemented by a coefficient plot (Figure 8), which summarises the direction and magnitude of the estimated effects.

4.2.3 Household Demographics

Household demographic characteristics exhibit strong and statistically significant associations with ritual expenditure.

Urban households report significantly lower ritual expenditure compared to rural households. The estimates imply that urban households spend approximately 79 percent less on ritual expenditure relative to rural households, holding other factors constant ($p < 0.001$). This indicates a substantial spatial disparity in ritual expenditure patterns.

Male-headed households also report significantly lower ritual expenditure relative to female-headed households, with an estimated reduction of approximately 43 percent ($p < 0.001$).

Age of the household head shows a strong positive gradient with ritual expenditure. Compared to households headed by individuals below 35 years, those aged 35–50 years report expenditure approximately 3.8 times higher. The magnitude increases substantially with age: households aged 51–65 years report around 11 times higher expenditure, while those aged over 65 years report approximately 13 times higher expenditure relative to the youngest age group (all $p < 0.001$).

Household size is positively associated with ritual expenditure, indicating higher ceremonial and social obligations among larger households.

4.2.4 Education Level of Household Head

Education is negatively associated with ritual expenditure. Compared to households with no formal education, those with primary education report approximately 29 percent lower ritual expenditure. The reduction is larger among households with tertiary education, which report approximately 54 percent lower expenditure relative to the reference category.

Overall, the results indicate a persistent inverse relationship between educational attainment and ritual expenditure, even after controlling for other household characteristics.

4.2.5 Economic Status (Consumption Quintile)

Economic status emerges as the strongest determinant of ritual expenditure, displaying a clear and monotonic gradient across consumption quintiles.

Compared to households in the lowest quintile, those in Q2 report approximately 95 percent higher ritual expenditure, while Q3 households report approximately 165 percent higher expenditure. The magnitude increases sharply at higher quintiles: Q4 households report more than five times higher expenditure, while Q5 households report approximately 11–12 times higher expenditure relative to the poorest households (all $p < 0.01$).

These findings indicate that ritual expenditure is strongly shaped by household economic capacity, with a pronounced and increasing gradient across the income distribution.

4.2.6 Housing Quality

Housing quality, used as a proxy for household living standards, is negatively associated with ritual expenditure. Households with better housing quality tend to report lower ritual expenditure after controlling for income, demographics, and location. Although statistically significant, the magnitude of this effect is smaller compared to key determinants such as consumption quintile, age structure, and rural–urban residence.

4.2.7 Robustness of Findings

Robustness checks using the Yeo–Johnson transformation yield substantively consistent results across all major covariates. The direction and statistical significance of key determinants—including consumption quintile, age of household head, household size, and rural–urban residence—remain stable across specifications. This consistency indicates that the main findings are robust to alternative functional forms of the dependent variable.

Table 7 : Econometric Parameter Estimates: Log-Linear Determinants of Ritual Expenditure

Variable Determinant	Coefficient	Std. Error	t-statistic	p-value	CI Lower	CI Upper	Sig.
Intercept (Baseline Model Constant)	7.627	0.579	13.170	0.000	6.488	8.766	***
Male-headed household	-0.569	0.159	-3.579	0.000	-0.881	-0.256	***
Urban household	-1.546	0.242	-6.392	0.000	-2.021	-1.070	***
Primary education	-0.337	0.173	-1.942	0.053	-0.678	0.004	
Secondary education	-0.242	0.258	-0.938	0.349	-0.748	0.265	
Tertiary education	-0.773	0.431	-1.794	0.074	-1.620	0.074	
Age 51–65 years	1.098	0.173	6.354	0.000	0.758	1.438	***
Age below 35 years	-1.325	0.253	-5.230	0.000	-1.824	-0.827	***
Age 65+ years	1.242	0.230	5.388	0.000	0.788	1.695	***
Household size	0.388	0.048	8.084	0.000	0.293	0.482	***
Consumption quintile Q2	0.668	0.229	2.915	0.004	0.217	1.118	**
Consumption quintile Q3	0.975	0.273	3.573	0.000	0.438	1.512	***
Consumption quintile Q4	1.797	0.275	6.527	0.000	1.255	2.338	***
Consumption quintile Q5	2.452	0.315	7.784	0.000	1.832	3.071	***
Housing quality index	-0.859	0.202	-4.244	0.000	-1.258	-0.461	***
Observations	5883	NA	NA	NA	NA	NA	

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Standard errors are reported in parentheses next to coefficients where applicable. Source: HCES 2025 calculations.

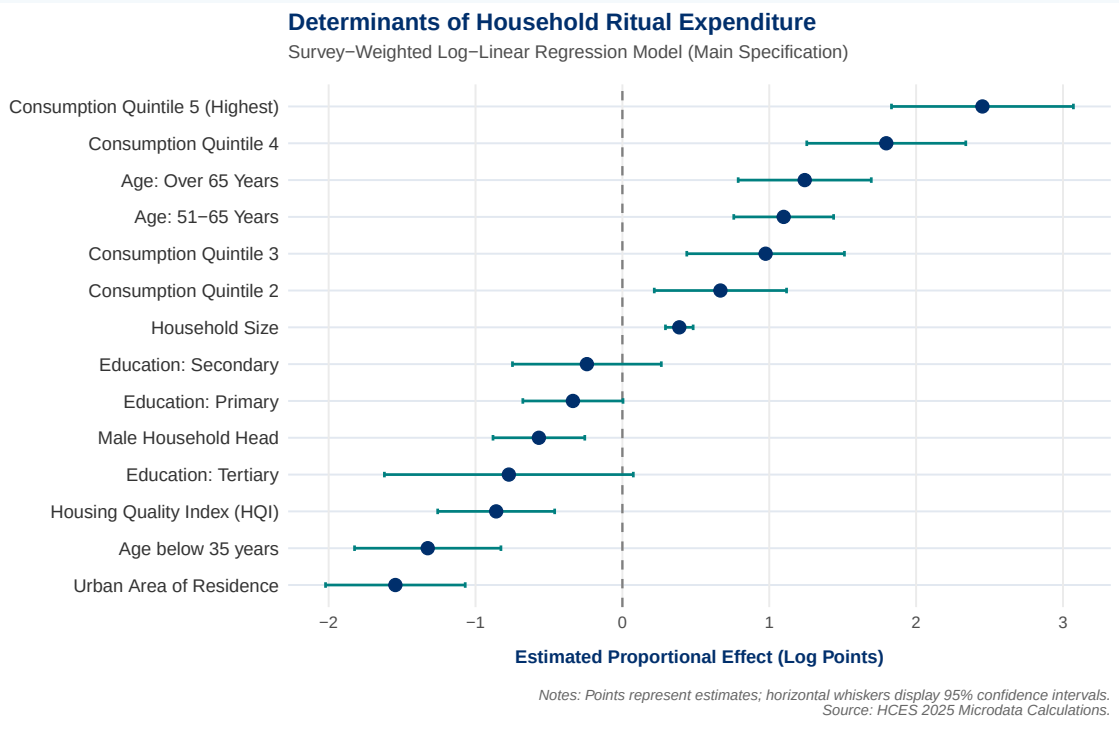


Figure 8 : Visualized Marginal Effect Vectors (Log Model Coefficient Whisker Plots)

This study provides the first nationally representative evidence on the level, distribution, and determinants of household ritual expenditure in Bhutan using the HCES 2025. The analysis shows that ritual spending is a pervasive but highly uneven component of household consumption.

At the national level, ritual expenditure accounts for a meaningful share of household budgets, but its distribution is strongly skewed. A substantial proportion of households report no ritual spending, while a smaller group accounts for disproportionately high expenditure levels. This indicates that ritual participation is not uniform across the population and varies considerably in intensity.

Clear socio-economic gradients are observed across households. Ritual expenditure increases systematically with consumption capacity, indicating that households with higher economic resources spend more in absolute terms. However, the distributional pattern differs when expressed as a share of total consumption, where lower-consumption households exhibit relatively higher burden.

Household characteristics are also strongly associated with ritual expenditure. Expenditure varies significantly by age of the household head, with older households showing consistently higher spending levels. Gender differences are also evident, with female-headed households spending more than male-headed households. Education is negatively associated with ritual expenditure, particularly at higher levels of attainment, while household size shows weaker and less consistent effects once other factors are controlled for.

Geographic variation is also pronounced. Rural households exhibit higher ritual expenditure than urban households, both in absolute and proportional terms, reflecting systematic differences in consumption patterns across areas of residence.

Overall, the results demonstrate that ritual expenditure in Bhutan is structurally patterned rather than random. It reflects a combination of lifecycle effects, socio-economic status, and spatial context, with substantial heterogeneity across households. The evidence highlights the importance of treating cultural expenditure as a distinct component of household consumption in empirical welfare analysis.

The results highlight that ritual expenditure in Bhutan is not only culturally embedded but also unevenly distributed across socio-economic groups, with important implications for welfare analysis and policy design within the GNH framework.

A key implication is the regressive nature of ritual expenditure in relative terms. Although higher-income households spend more in absolute terms, poorer households allocate a larger share of their consumption to ritual activities. This suggests that standard welfare measures may understate financial pressure among lower-income groups when cultural obligations are not explicitly considered.

Geographic differences further indicate that ritual participation remains more intensive in rural areas than in urban settings. This points to the importance of recognising spatial variation in cultural practices when designing social protection and community-level interventions, rather than assuming uniform behavioural patterns across regions.

The strong age gradient in ritual expenditure reflects increasing engagement with rituals over the life course, particularly among older households. This suggests that ritual participation is closely tied to lifecycle and social roles, and should be acknowledged as part of broader well-being considerations for ageing populations.

Differences by education level suggest that ritual spending patterns may be evolving across more educated households, potentially reflecting shifts in preferences, opportunity costs, or exposure to alternative value systems. This indicates that cultural continuity may depend more on engagement and institutional support than on household-level financial behaviour alone.

Finally, the absence of a significant relationship between housing quality and ritual expenditure suggests that ritual spending is more closely linked to current consumption capacity than to long-term asset ownership, reinforcing the importance of income- and consumption-based measures in understanding cultural expenditure patterns.

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APPENDIX

6.1 Appendix A. Alternative Model Specifications

6.1.1 Table A1. Linear Level Model Evaluation Parameters

Table 8 : Linear Level Model Evaluation Parameters and Sample Observations Summary

Model Specification	Sample Observations (N)
Linear Specification (Level Model)	5883
Log-Linear Specification (Main Specification)	5883
Yeo-Johnson Functional Transformation Model	5883

Table 9 : Diagnostic Comparison of Symmetrical Spread and Outlier Vulnerability Matrix Across Functional Specifications

Model	Residual SD	Max Abs Resid	Cooks Outliers
Log-Linear Model (Main)	4.4228	13.3113	251
Yeo-Johnson Specification	0.9082	2.7427	244

6.2 Appendix B. Diagnostic Checks for Main Log Model

6.2.1 Figure B1. Residuals versus Fitted Values

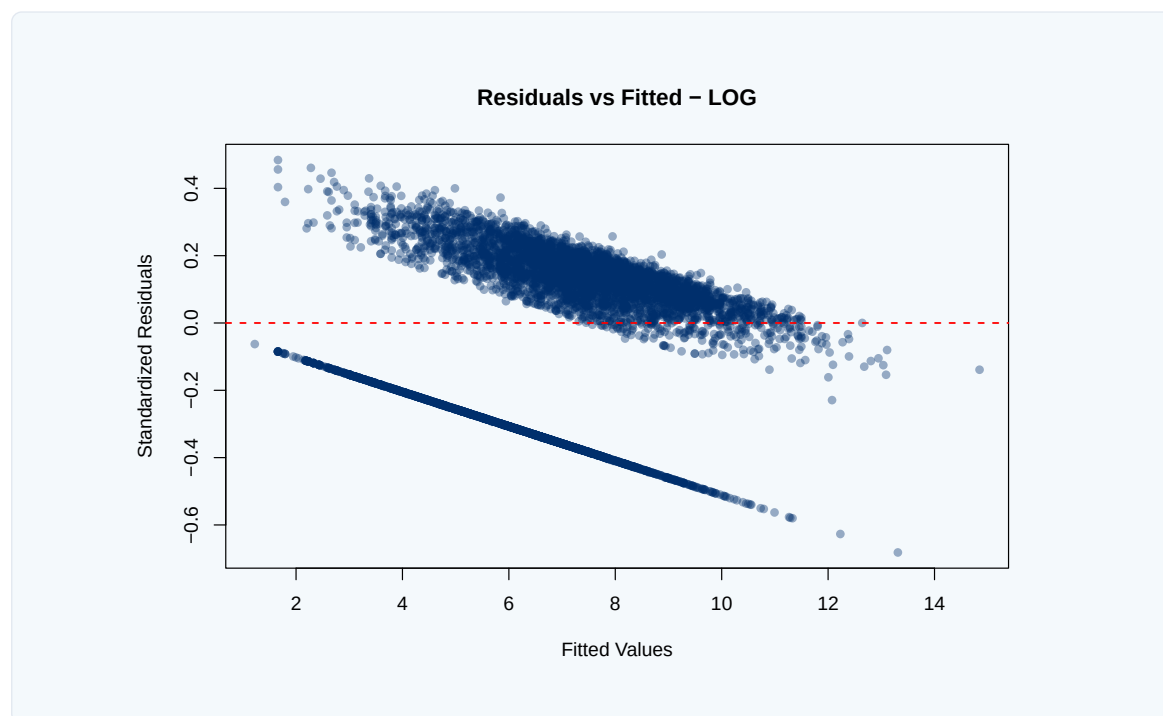


Figure 9 : Standardized residuals versus fitted value vectors for the main log-linear model

6.2.2 Figure B2. Normal Q–Q Plot

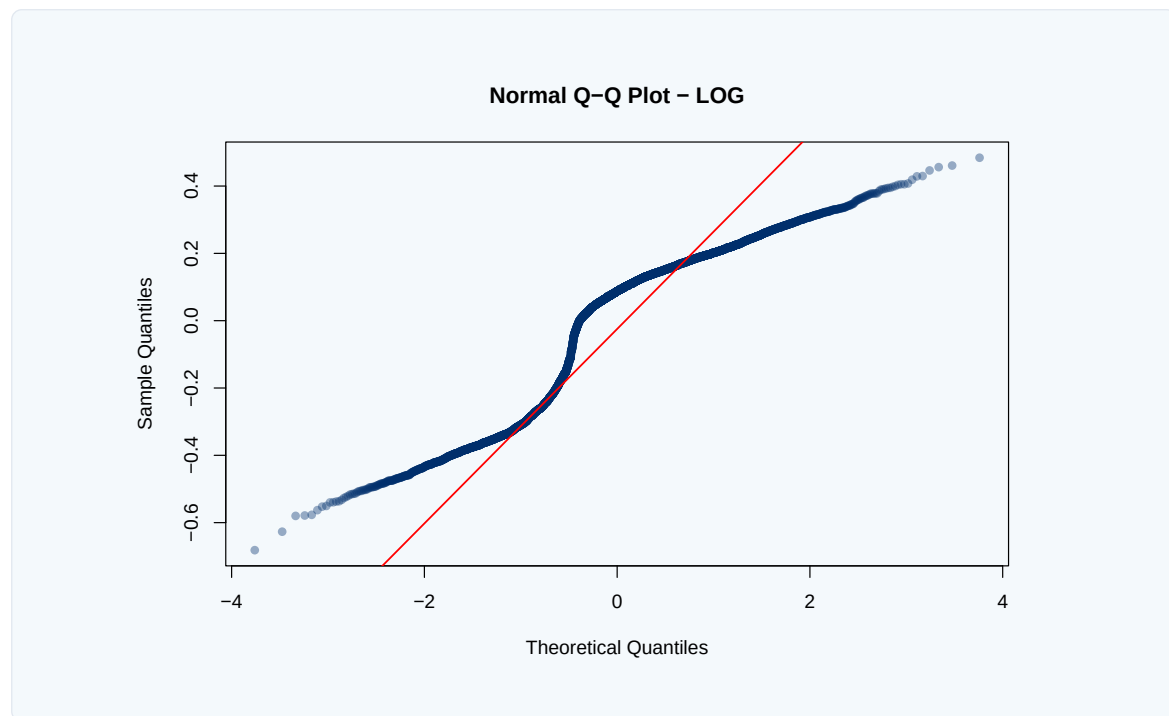


Figure 10 : Normal Q–Q plot of standardized residual vector distributions

6.2.3 Figure B3. Cook's Distance

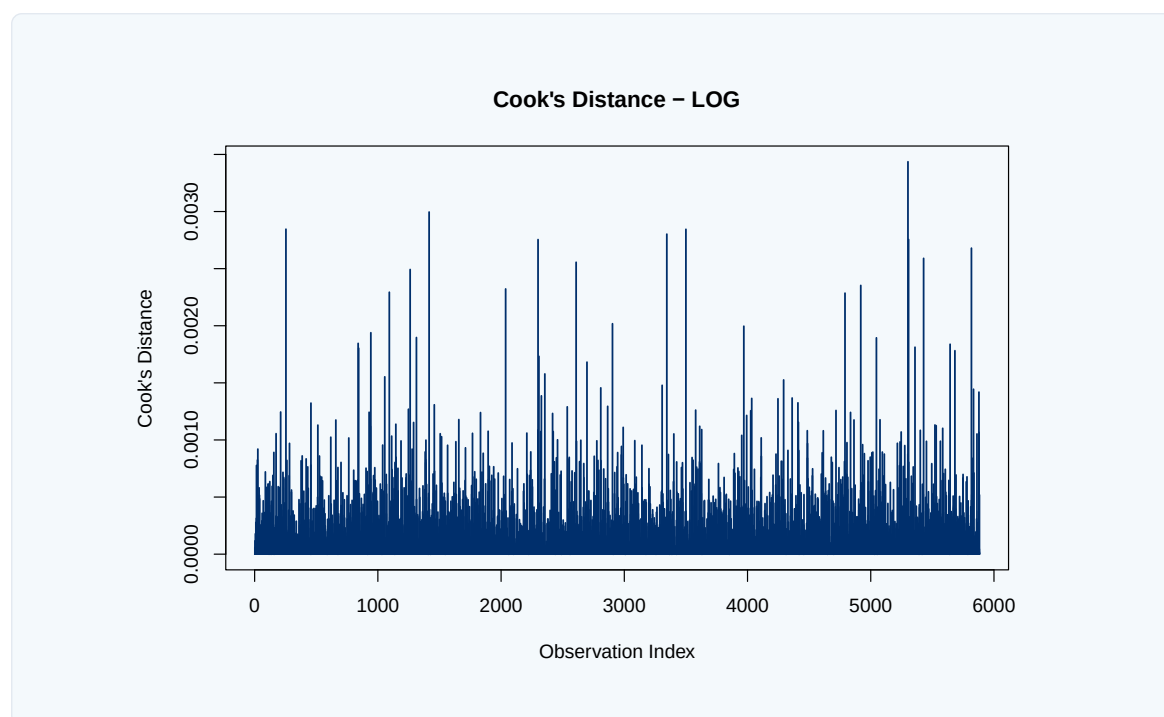


Figure 11 : Cook's distance structural point leverages for identifying outlier observations

6.2.4 Table B4. Multicollinearity Assessment: Variance Inflation Factors (VIF)

Table 10 : Variance Inflation Factors (GVIF) for the explanatory covariate tracks

Variable	GVIF	Df	Adjusted_VIF
Area of residence (Urban/Rural)	2.217	1	1.489
Educational attainment level	2.659	3	1.177
Age structural cohort groups	1.983	3	1.121
Household size (Count)	1.469	1	1.212
Consumption quintile bracket	2.600	4	1.127
Housing Quality Index (HQI)	1.226	1	1.107

HOUSEHOLD RITUAL EXPENDITURE IN BHUTAN

Official Statistics Brief

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