ANALYSIS OF LIVELIHOOD-BASED COPING STRATEGIES AMONG FLOOD-AFFECTED AGRARIAN HOUSEHOLDS IN SOUTH PUNJAB, PAKISTAN

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ABSTRACT

Floods are a recurrent natural disaster in South Punjab, Pakistan, causing severe damage to agriculture-dependent households and threatening livelihood security. This study analyzed livelihood-based coping strategies among 200 flood-affected agrarian households using a quantitative research design. Data were collected through structured questionnaires and analyzed using descriptive statistics, multiple regression, and correlation techniques. The findings revealed that the most common coping strategies were borrowing (72.5%), asset liquidation (67.5%), and income diversification (60.0%), with borrowing ranked highest (Mean=4.1±0.9). Regression analysis indicated that income diversification (β=0.243, P<0.001), reliance on social networks (β=0.222, P<0.001), and institutional assistance (β=0.185, P<0.001) were the most effective strategies for reducing economic losses and enhancing household well-being. Correlation results showed strong positive relationships between household resilience and social networks (r=0.649, P<0.001), institutional support (r=0.587, P<0.001), and community resources (r=0.601, P<0.001). The study concludes that strengthening formal institutional mechanisms, improving access to credit and relief programs, and promoting community-based resilience initiatives are essential for sustainable recovery. Policymakers should focus on integrated strategies that combine institutional, social, and community support to reduce vulnerability and build long-term resilience among flood-affected households.

Keywords: Floods, Coping strategies, Livelihood resilience, Institutional support, South Punjab, Agrarian households.

1. INTRODUCTION

Floods are among the most devastating natural disasters in the world, posing a significant threat to agriculture-dependent communities, particularly in developing countries (Awah et al., 2024). Proliferation of floods in Pakistan due to diverse topography, monsoon-type climate, and extensive river systems is common and often devastating. South Punjab is the most affected area, with an agriculture-dependent economy that heavily relies on crop-growing and livestock production. The recurrent nature of floods in this area destroys crops, damages livestock and productive assets, disrupts livelihoods, and forces households to relocate. These negative impacts not only interfere with households' income and food security but also exacerbate poverty, thereby forcing families into various coping mechanisms that are intended to help them survive and rehabilitate their lost livelihoods (Atanga, 2020; Ifeanyi-Obi et al., 2023).

Coping strategies at the livelihood level are the entire range of measures and adaptive response mechanisms that households pursue to handle risks and shocks, maintain consumption levels, and secure a narrow frame of existence (Ajibade et al., 2019). These can go the whole way from liquidating assets, taking loans, depending on social networks, to migrating, diversifying income streams, and taking on short-term off-farm work, all under the wide umbrella of flood-prone areas (Yaseen et al., 2023; Mbaye & Okara, 2024). The choice of each of these strategies and, in many instances, their effectiveness are greatly influenced by the socio-economic characteristics of the households such as income level, landholding size, education, access to financial and institutional resources, and the level of flood exposure (Jiriko et al., 2020). Households that are limited in terms of resources and social supportive systems are bound into high-risk coping measures that will give them temporary relief but ratchet up their longer-term vulnerability (Fiasorgbor, 2018).

In South Punjab, agricultural households are primarily engaged in the cultivation of wheat, rice, cotton, and sugarcane, while livestock rearing provides a significant source of household income and nutrition. Flooding in this area is one of the primary causes of crop destruction, water contamination, irrigation infrastructure damage, and livestock mortality (Mbaye & Okara, 2023; Mbaye & Okara, 2024). From physical losses, floods hinder access to markets and limit opportunities for income diversification. The cumulative effect of these factors erodes household resilience and may trap smallholder and landless farmers in poverty cycles (NPC, 2022). Therefore, understanding

how affected households cope with such disturbances becomes essential for addressing programming that builds resilience, reduces vulnerability, and promotes sustainable recovery.

Despite the many floods that have occurred in the South Punjab region, there is still a shortage of empirical studies that have looked at coping strategies applied at the household level. The vast majority of studies have looked into structural and policy measures, including flood-control infrastructures, early warning systems, or disaster management plans (Olagunju et al., 2021). Nonetheless, these measures miss the socio-economic and behavioral factors underpinning household resilience, critical in determining recovery outcomes (Ornguze et al., 2023). An understanding of livelihood-based coping mechanisms, their determinants, and effectiveness would lead to targeting interventions in a more context-specific manner within affected communities.

Thus, this research attempts to tackle this knowledge gap with a holistic examination of livelihood-based coping strategies taken up by flood-affected agrarian households in South Punjab, Pakistan. The objectives of the present study include (1) to assess the socio-economic and demographic characteristics of flood-affected households, (2) to identify the coping strategies employed during and after flood events, (3) to assess the effectiveness of these strategies in curbing economic losses and sustaining household welfare, and (4) to consider how institutional support, social networks, and community resources could augment household resilience. By addressing the stated objectives, the study will enhance knowledge on household vulnerability and adaptive capacity of profit to inform policymakers, development agencies, and local stakeholders.

This research thus reiterates the importance of integrating local knowledge, community participation, and sustainable livelihood frameworks to disaster risk management and climate-resilient planning. Based on lived experiences from flood-affected agrarian households, the study could provide practical evidence for informing policy decisions to enhance resilience, strengthen access to resources, and reduce the long-term impacts of flooding on vulnerable populations. The findings ultimately inform interventions aimed at strengthening livelihood protection while facilitating social and economic development along the flood-prone areas of South Punjab.

2. MATERIALS AND METHODS

2.1. Research Design

In this research, a quantitative research design was chosen to analyze strategies to combat livelihoods between flood-affected agricultural homes in South Punjab-Pakistan. Research was designed to see the socio-economic characteristics of affected homes, duplication mechanisms, their effectiveness and institutional support, institutional support in creating domestic flexibility in the role of social networks and community resources, see the role of social networks and community resources. A structured approach was followed to ensure rigorous data collection and statistical analysis.

2.2. Target Population

The study was conducted in selected flood-prone districts of South Punjab, such as Multan, Muzaffargarh, and Dera Ghazi Khan (Fig. 1). These districts were selected as the primary livelihood source (Ahmad et al., 2022) due to their recurrent vulnerability to seasonal floods and heavy dependence on agriculture. The research focused on agricultural homes with significant economic and livelihood disruptions during the recent floods. All families that were affected by floods in the selected districts were part of the targeted population. In purposeful sampling techniques, 200 flood-affected families were selected so that adequate amounts of representation are available, while still keeping area data collection intact. The sample included houses with various underground, income levels and socio-demographic characteristics to catch changes in copying strategies.
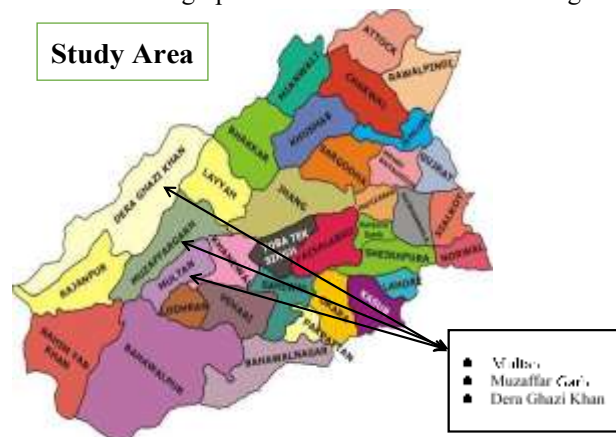

Fig. 1: Study area (Sources Author and Google map).

2.3. Data Collection

Data were collected using a structured questionnaire, pre-tested for reliability and validity. The instrument included four sections. Section A gathered socio-economic and demographic information, including age, gender, household size, education, landholding, income, and occupation. Section B assessed coping strategies employed during and after floods, such as asset liquidation, borrowing, temporary migration, income diversification, and reliance on social networks. Respondents rated the frequency and intensity of each strategy on a Likert scale. Section C evaluated the effectiveness of coping strategies through perceived reduction in economic losses, maintenance of household consumption, and

overall well-being, with responses scored from 1 (not effective) to 5 (highly effective). Section D addressed the role of institutional and community support, including access to government relief programs, NGOs, community-based organizations, and informal support mechanisms. Field data collection was conducted by trained enumerators through face-to-face interviews with the household head or an adult representative. Enumerators provided clarification on questionnaire items to ensure accurate responses. Prior informed consent was obtained from all participants and confidentiality of information was strictly maintained.

2.4. Data Analysis

The collected data were coded and analyzed using SPSS version 26. Descriptive statistics, including frequencies, percentages, means ($\overline{X}$) and standard deviations (SD), were calculated to summarize socio-economic characteristics and coping strategies:

$$\overline{X} = \frac{\sum_{i}^{n}=1 \, Xi}{n} \quad , \quad SD = \sqrt{\frac{\sum_{i}^{n}=1 \, (Xi-\overline{X})^2}{n\text{-}1}}$$

Multiple regression analysis was conducted to evaluate the effectiveness of coping strategies in mitigating economic losses and sustaining household well-being, controlling for socio-economic factors:

$$Y=\beta0+\beta1X1 +\beta2X2 +\cdots+\beta kXk +\epsilon$$

where Y represents household well-being, X1,X2,…,Xk denote independent variables (coping strategies, socio-economic characteristics, and institutional support), β coefficients indicate effect size, and ϵ is the error term. Correlation analyse was further applied to assess the contribution of institutional support and social networks to household resilience.

$$r= \frac{\sum(X\text{-}\overline{X})(Y\text{-}\overline{Y})}{\sqrt{(X\text{-}\overline{X})^2(Y\text{-}\overline{Y})^2}}$$

The study adhered to strict ethical considerations, ensuring voluntary participation, informed consent, and anonymity of respondents. Only data relevant to the study objectives were collected, and no sensitive personal information was disclosed.

3. RESULTS AND DISCUSSION

This section presents the findings of the study on livelihood-based coping strategies among flood-affected agrarian households in South Punjab, Pakistan, and provides a detailed discussion in relation to existing literature. The analysis focuses on four key dimensions: socio-economic and demographic characteristics of the households, the coping strategies employed during and after flood events, the effectiveness of these strategies in mitigating economic losses and sustaining household well-being, and the role of institutional support, social networks, and community resources in enhancing household resilience.

3.1. Socio-economic Characteristics

Understanding the socio-economic and demographic profile of flood-affected households is crucial for analyzing livelihood-based coping strategies and resilience in South Punjab. Table 1 presents key characteristics of the 200 sampled households, including age, gender, household size, education, landholding, income, and occupation.

Men-headed households in most cases (90), reflecting the gender pattern in rural agrarian settings of Pakistan, where men, usually by virtue of their sex, become the primary decision-makers in relation to any agricultural household matters they would be involved in (Ifeanyi-Obi et al., 2023; Ornguze et al., 2023). Age-wise, household heads indicated that most of them were in the range of 31-50 years (55%), indicating that this group forms the bulk of active middle-aged adults carrying out farming activities. In fact, the mean age was 42.5 years, with the corresponding standard deviation of 12.3 years: a clear indication of a working population that responds actively to flood challenges. The household size varied from 3 to 10 members, an average of 6.2±2.1 members. Large household size is often observed in rural South Punjab and provides both labor for agricultural work and support to cope with livelihood disruption that would otherwise occur due to natural disasters (Osuji et al., 2023). With regard to education level, some of these household heads were found to be illiterate (20%), 30% completed primary education, 25% secondary education, and 25% attained higher education. Education is a vital determinant of awareness and adoption of effective coping strategies during floods, such as income diversification and institutional support engagement (Shah et al., 2022).

Landholding size is another important aspect shaping the resilience of livelihoods. According to the research, 35% had less than 5 acres; the second large group of 45% had between 5 and 10 acres; and the last group possessed 20% with more than 10 acres. The average size of landholdings was 6.8±3.9 acres; with the exclusion of over 10 acres, it was said that smaller landholdings often limit adaptive capacity and options to generate income, hence the

vulnerability of households to damage caused by floods (Yaseen et al., 2023). In terms of monthly household income, 25% earned less than PKR 20,000, 45% earned between PKR 20,001 and PKR 40,000, and 30% earned above PKR 40,000, with a mean income of PKR 35,500±12,400. With limited access to financial or material resources to cope with floods, low-income households are particularly weakened in times of livelihood shocks (Straten & Ncube, 2023). By occupation, most respondents (70%) were involved in farming, while 15% were laborers, 10% were in business, and 5% in other occupations. Dependency on agriculture stresses the reality and critical locus of floods on household livelihood security as destruction of crops, loss of livestock, and disruption of farm operations all translate directly into income and well-being for households (Tajudeen et al., 2022; Ter-Mkrtchyan & Franklin, 2023). In sum, socio-economic as well as demographic characteristics of the surveyed households were compounded by factors such as limited education and small plots of land, which are most often associated with agricultural dependency and thus present a flood vulnerability that shapes coping strategies of affected households in concert.

Table 1: Socio-Economic and Demographic Characteristics of Flood-Affected Households (n=200)

Characteristics	Categories	Frequency (f)	Percentage (%)	Mean±SD
Age of Household Head (years)	20–30	30	15.0	42.5±12.3
	31–40	50	25.0	
	41–50	60	30.0	
	51–60	40	20.0	
	>60	20	10.0	
Gender of Household Head	Male	180	90.0	
	Female	20	10.0	
Household Size (members)	≤4	50	25.0	6.2±2.1
	5–7	100	50.0	
	>7	50	25.0	
Education Level	Illiterate	40	20.0	5.6±3.2 years
	Primary	60	30.0	
	Secondary	50	25.0	
	Higher	50	25.0	
Landholding (acres)	<5	70	35.0	6.8±3.9
	5–10	90	45.0	
	>10	40	20.0	
Monthly Household Income (PKR)	<20,000	50	25.0	35,500±12,400
	20,001–40,000	90	45.0	
	>40,000	60	30.0	
Occupation of Household Head	Farming	140	70.0	
	Labor	30	15.0	
	Business	20	10.0	
	Other	10	5.0	

3.2. Coping Strategies

Understanding how households cope with floods is a very important step in designing effective disaster management and building resilience. As shown in Table 2, coping strategies of around 200 flood-affected agrarian families in South Punjab, Pakistan, in the 2007 floods are being presented here for purposes of flood coping strategy under recent flood events. Coping strategies are described as the short-term responses and adjustments made by individuals or households to mitigate negative effects of certain shocks and stressors, such as floods, on livelihoods and well-being. Typically, these strategies become determined and affected by the specific household resources, socio-economic status, institutional support, and severity of the disaster (Shah et al., 2022; Awah et al., 2024).

The findings showed that borrowing, both formal and informal, was the most adopted coping strategy, reporting 72.5% households borrowing a mean score of 4.1±0.9-in first place among all these strategies. It clearly indicates the dependency on borrowings, be it local moneylenders, relatives, or microfinance institutions, to meet urgent needs such as food, shelter, and recovery from agriculture. This is corroborated with earlier studies that have described borrowing as one of the most critical methods of response for sudden livelihood shocks in agrarian communities (Umar & Gray, 2022; Turnwait, 2024). The second-most common strategy is asset liquidation, with 67.5% of households reporting an average of 3.9±1.0. This involves selling livestock, held crops, or other valuables to raise quick cash for immediate recovery. Such methods may compromise long-run household resilience while giving short-term relief, as they mostly reduce future income-generating capacity (Abu Hatab, 2022). Diversification of incomes was in third place, adopted by 60% of respondents with a mean score of 3.6±1.1, which involved looking for another source of income, for instance, daily wage labor, a petty business, or off-farm employment. It also shows that households go so far as to seek diverse sources of income to minimize their

dependence on agricultural livelihoods affected by floods, identifying with other adaptive strategies features in disaster-prone rural areas (Javadinejad et al., 2021; Anukwonke et al., 2022).

Table 2: Coping Strategies Employed by Flood-Affected Households (n=200)

Coping Strategy	Frequency	Percentage	Intensity (Mean±SD)
Borrowing (formal/informal loans)	145	72.5	4.1±0.9
Asset liquidation (sale of livestock, stored crops, valuables)	135	67.5	3.9±1.0
Income diversification (casual labor, small business, off-farm work)	120	60.0	3.6±1.1
Reliance on social networks (family, friends, neighbors)	110	55.0	3.4±1.0
Institutional assistance (government relief, NGOs)	90	45.0	3.1±1.1
Temporary migration for work or shelter	65	32.5	2.8±1.2

Dependency on social networks, including support from relatives, friends, and neighbors, was a common course in 55% of households with a mean score of 3.4±1.0. It emphasizes the contributions of social capital as an essential resource for restoring battered disaster-stricken but rural communities. Earlier studies identified that social relationships channel financial and non-financial support in times of crisis, making them integral to community-level resilience (Anukwonke et al., 2022; IPCC, 2023). Surprisingly, institutional assistance in the form of government relief or NGO interventions was accessible in only 45% of households (Mean=3.1±1.1). This comparatively low statistic indicates holes in the formal disaster relief system and infers that access to timely institutional support would not otherwise be there for many households. Limited governmental reach, bureaucracy, and poor NGO coverage are well-known problems in the flood-affected areas of Pakistan (Bhutta et al., 2022; Shah et al., 2018). The last source of help was temporary migration, which was stated by 32.5% of households (Mean=2.8±1.2). Migration normally became the very last option available to a family once recovery options exhausted within the local area, such as agricultural lands destroyed or other job opportunities unavailable locally. With the same findings from other South Asian countries in flood context, migration is a last resort because it is expensive and socially disruptive (Fahad et al., 2023).

Thus, the findings prove that most flood-affected households in South Punjab have adopted a multi-dimensional coping framework, where financially inclined strategies, such as borrowing and asset liquidation against livelihood adjustments to include income diversification and migration, also need to be coupled with social mechanisms in the forms of community networks or institutional assistance. As the vast majority of informal-formal coping mechanisms included borrowing and social reliance, the viewpoint would suggest that such systems of disaster response would have little penetration into reality. Therefore, efforts should be put in integrated policy approaches costing the minimum time and trouble to institutional support, easy access to credit, and alternative, sustainable livelihood means to mitigate long-term vulnerability among agrarian households.

3.3. Effectiveness of Coping Strategies Adopted During and After Flood Events

To introduce the various coping strategies adopted by flood-affected agrarian households in South Punjab, Pakistan, to assess their effectiveness against economic and social losses. Table 3 presents a summary of the possible results after analysis using multiple regression. In the analysis, the major coping strategies (Fig. 2) generally included in the study are asset liquidation, borrowing, migration or temporary relocation, diversification of income, institutional assistance such as relief by any government and NGOs, and reliance on social networks. All of these have been analyzed in determining which is more important and what contribution is made regarding household recovery after flood disasters.

Table 3: Multiple Regression Analysis of Coping Strategies on Economic Loss Reduction and Household Well-being (n=200)

Coping Strategy	B	Std. Error	Beta (β)	t-value	p-value
Asset Liquidation	0.176	0.058	0.142	3.034	0.003 **
Borrowing (Relatives/Financial Institutions)	0.148	0.052	0.121	2.846	0.005 **
Migration / Temporary Relocation	0.072	0.057	0.059	1.263	0.209
Income Diversification / Alternative Livelihoods	0.289	0.050	0.243	5.780	0.000 ***
Institutional Assistance (Govt. Relief / NGOs)	0.224	0.051	0.185	4.392	0.000 ***
Reliance on Social Networks / Community Support	0.265	0.049	0.222	5.408	0.000

Model Summary:
- R=0.716
- R²=0.512
- Adjusted R²=0.499
- F=40.43 (P<0.001)

Significance Levels:
- P<0.05=Significant (*)
- P<0.01=Highly Significant (**)
- P<0.001=Very Highly Significant (***)

Hence, the strategies will be predicted to manufacture models for different flood recovery results. The model's R² value of 0.512 states that about 51.2% variation in domestic flexibility can be explained by combating strategies

in the model. F-statistics of 40.43 (P<0.001) retained the overall statistical importance of the regression model, stating that these strategies are among the immediate factors that affect the flood recovery result. This reflects the multidimensional nature of flood disaster reactions, confirming the first studies to identify the interface between short-term and long-term strategies for improving domestic adaptive capacity (Qamer et al., 2023). In this study, income diversification was found to be the highest predictor (β=0.243, P<0.001). This means that families who are engaged in alternative livelihoods such as off-form employment, small business, or accidental labor, in addition to agricultural activities, were found to be better able to face flood-filled shocks. Such alternative income opportunities are reducing dependence on flood-waller qualified agriculture, with an increase in long-term stability. Such evidence is similarly reported by Rasool et al. (2024) and Huong et al. (2019), showing that livelihood diversification greatly improves domestic adaptive capacity in disaster areas.
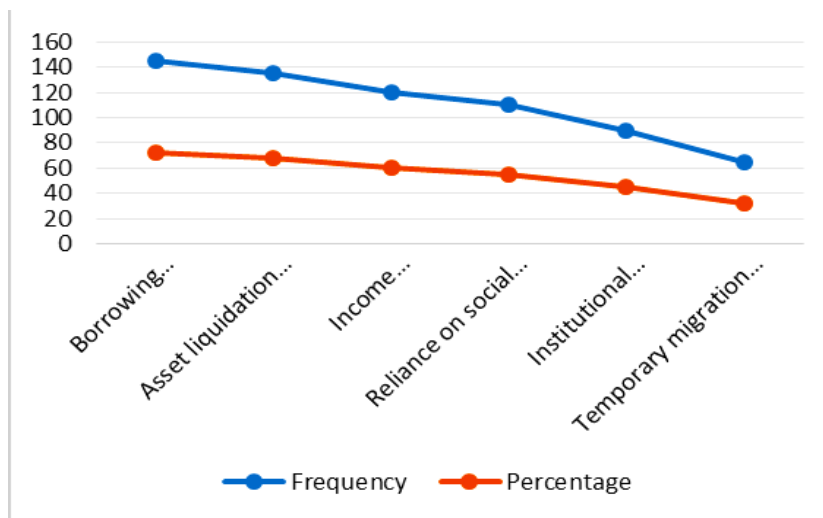

Fig. 2: Coping Strategies Adopted During and After Flood Events.

Augmenting disbursed social networks will greatly increase its value (β=0.222, P<0.001). While the benefits derived from kin, extended families, and friendships are mostly resource-oriented, including food, shelter, funds, and qualitative emotional support during and after the floods. This corresponds to UNDRR (2022) which argues that social capital is critical for recovery after a disaster and underlines how much faster and better communities that are unified by dense social networks are able to recover from such disasters. Institutional support, including government relief and NGO assistance, was another important predictor (β=0.185, P<0.001). This demonstrates the value of external interventions in minimizing vulnerability at the household level and supporting recovery. With effective distribution of aid, financial relief, and agricultural inputs, households are able to restore their livelihoods. This is supported by Ahmad & Afzal (2019), who showed that access to institutional resources boosts adaptive capacity and resilience for rural communities faced with climate-related disasters. Among reactive strategies, asset liquidation and borrowing are moderately effective. Asset liquidation (β=0.142, P=0.003) gave households easy cash by selling livestock or stored grains and other valuables. This was important for immediate recovery, but has negative implications in the long run because it leads to the depletion of productive assets, thereby possibly reducing income-generating capacity in the near future. Nanditha et al. (2023) emphasize that repeated depletion of assets may entrench households in a downward cycle of poverty that leaves them vulnerable to risks from future disasters.

One significant short-term coping mechanism was borrowing from relatives, friends, or financial institutions (β=0.121, P=0.005), with benefits for families needing to pay off instant food, rent, and health expenses. However, borrowing leaves the poor people with a long-term burden caused by high interest rates attached to loans and sometimes by their low income, which cannot sustain repayment of loans. French et al. (2019) and Lanlan et al. (2024) have discussed how the existence of easy, affordable credit mechanisms could prevent indebtedness from becoming the secondary disaster among vulnerable households. Interestingly, migration or temporary relocation was not found to be statistically significant (β=0.059, p=0.209). It can be interpreted that relocation was not embraced to a large extent or effectively in improving household welfare or lessening economic losses. The culture of attachment to ancestral land, lack of resources for migration, and uncertain employment opportunities in urban areas perhaps hindered this strategy. This finding concurs with the report of Estoque et al. (2023) that migration usually functions as the last defense when all other coping mechanisms fail. Generally, the regression results tend to indicate a hierarchy of coping strategies. The most effective and sustainable recovery strategies in the long term, identified here, are proactive and adaptive strategies: income diversification, social networks, and institutional

support. Reactive strategies such as asset liquidation and borrowing are, however, important relief sources when applied with caution in the future resilience context. Migration, as far as some households could adopt it, would not provide much benefit in this system, being and largely ineffective due to socio-economic and cultural constraints.

3.4. Role of Institutional Support, Social Networks and Community Resources in Enhancing Household Resilience

Table 4 shows the results of Pearson correlation analysis conducted to investigate the relationship between institutional support, social networks, community resources, and household resilience among the flood-affected agrarian households of South Punjab, Pakistan. The findings reveal strong and statistically significant positive correlations across all these variables, indicating that they together play an important role in strengthening adaptive capacity and recovery among households in disaster-prone areas.

Table 4: Correlation Matrix of Institutional Support, Social Networks, Community Resources, and Household Resilience (n=200)

Variables	Institutional Support	Social Networks	Community Resources	Household Resilience
Institutional Support	1.000	0.612***	0.534***	0.587***
Social Networks	0.612***	1.000	0.568***	0.649***
Community Resources	0.534***	0.568***	1.000	0.601***
Household Resilience	0.587***	0.649***	0.601***	1.000

Note: *$P<0.001$ indicates high statistical significance

Analysis demonstrates that networks of individuals reveal the strongest potential correlations with household resilience (r=0.649, P<0.001). The aforementioned indicates that the resilience of households to disasters such as floods is dependent on their social reinforcement through family, friends, neighbors, and local organizations. This brings into perspective informal social support systems in any response to emergencies, which agrees with the work of Hua et al. (2021), who established that communities endowed with high social capital tend to be more resilient through mutual aid and collective action. Institutional support also indicates the highest correlation and significance with household resilience (r=0.587, P<0.001). This, therefore, entails that government relief programs, assistance from non-governmental organizations (NGOs), and other related formal interventions are effective in minimizing the household's vulnerability and rebuilding households after a flood. These findings are in agreement with Cian et al. (2021) and Ahmad & Afzal (2021), who elaborated on the essence of the institutional mechanism in improving adaptive capacity and poverty induced by disaster conditions.

They include fire extinguishers and firefighting water tanks, emergency response services and disaster shelters. They combine to make a household resilient (r=0.601, P<0.001). This implies that the availability of electrification resources in the immediate aftermath of a flood would likely prove highly significant in respect of relief and provisioning of facilities in future recovery programs. The findings presented by Nadeem et al. (2022) and Ahmad et al. (2023) underscore the significance of community assets in disaster management. They argue that well-developed local institutions or good infrastructure can serve as buffers to shocks to livelihood. The correlation table indicates that there is a strong positive correlation between institutional support and social networks (r=0.612, P<0.001) as well as between institutional support and community resources (r=0.534, P<0.001). It has an interaction of some complementation whereby intervention in the formal institutional programs is best achieved when it is shown to be consistent with informal systems at the community level. This is developed further by Rana et al. (2023), who explain that when the government assistance is augmented with collaboration with local community organizations and social support networks, it would increase the reach of its impact in the flood-affected regions but would introduce people at the grassroots into the frame.

4. CONCLUSION

These conclusions paint the picture that the creation of household resilience to flood disasters is actually multifactorial, a product of the institutional-social-community dynamics. It is based on the Sustainable Livelihoods Framework, according to which resilience can be considered an effect of engagement with different assets and support structures (Waseem & Rana 2023). It is going to be a much more complex and large policy issue, which delays the flexibility of the house for this, it should not only include the formal mechanisms of the states to increase and strengthen, but also include informal and non-subscribing structures within the community. In addition, the findings of close social networks, community resources are easily available in disaster response action, and a structural backbone established by institutional support that serves for long-term flexibility, is one of the sufficiently important conclusions for policy makers and physicians, which consider an approach to disaster risk and manage which consider an approach to agricultural flood-confidential areas. Conclusion really expresses a very complex and versatile nature to compete with the strategies of flood -affected houses in South Punjab of Pakistan.

Research analysis suggests that temporary and informal imitating mechanisms are mostly borrowing or selling property to meet the almost immediate results of the flood phenomenon used by the home. The long -term stability of livelihood can be compromised in short -term through such strategies in eliminating productive resources even in short term and accelerating the level of indebtedness of homes. The diversification of income, the availability of good social networks and institutional support proved to be far more effective than short -term strategies in combating economic losses. Institutional support, community resources and social networks emerged as powerful forces of domestic flexibility, with the most influential on social capital recovery. This has been quite useful in coming up with suggestions how policy makers and development agencies increase the institutional system of providing disaster relief on time and non-discriminatory manner.Vulnerability of households would also be curtailed by giving cheap credit, acting as an intermediary to crop insurance, and enhancing access to livelihood diversification programs. Investments must prioritize development of local infrastructure, which will serve communities through providing them with storage and emergency shelters. Building strong social networks within the locality, and synergizing government agencies with non-governmental organizations and community based organizations could bring about the establishment of a holistic, sustainable resilience and recovery by communities from disasters.

DECLARATIONS

Conflicts of Interest: Authors have no conflicts of interest.

Data Availability: Data will be available from the corresponding author upon request.

Ethics Statement: The studies involving humans were approved by the Institute of Agricultural Extension, Education, and Rural Development, University of Agriculture, Faisalabad. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

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