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Enhancing Food Security and Nutrition through Social Safety Nets: A Pathway to Sustainable Development

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Abstract: In this cross-sectional study, an investigation was conducted by collecting primary data from 379 household heads to examine the impact of social safety nets on household-level food security in the Torghar district of Northern Khyber Pakhtunkhwa, Pakistan. The comprehensive analysis encompassed the univariate, bivariate, and multivariate levels. The bivariate analysis revealed issues and shortcomings related to access to social safety nets, particularly within the Zakat system. These issues included corruption and nepotism, which hindered poverty alleviation strategies and the well-being of vulnerable households. Additionally, complex bureaucratic procedures and regulations impeded social interventions, and political factors posed a substantial obstacle. At the multivariate level, the study identified the specific factors contributing to food insecurity. Respondents from extended family systems, individuals aged between 46 and 55 years, and those with religious education were found to be more vulnerable to food insecurity. While social safety nets held promise for addressing food sustenance challenges among local low-income citizens, the negative impacts of political involvement, favoritism, and nepotism were evident and required urgent attention. These findings emphasize the need for coordinated efforts among the government, social safety net officials, and community to identify and rectify these existing issues. Fostering a sense of ownership and responsibility regarding the role and implementation of social safety nets towards achieving food security is crucial to enhancing their viability and effectiveness, ensuring continuous support for those in need.

Keywords: social protection scheme; social inclusion; social exclusion; food security; poverty alleviation; Pakistan



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1. Introduction

As the 21st century began, a critical global challenge came to the forefront: food security [1]. The importance of this issue has been widely recognized, with Chris Barrett emphasizing the urgent need to ensure a sufficient supply of safe and nutritious food for all, enabling people to lead healthy and thriving lives [2]. However, this challenge is complex, influenced by factors such as climate change, growing populations, conflicts, and economic inequality [3]. Addressing it requires cooperation among governments, international organizations, and individuals. Among the potential solutions, social protection has emerged as a key tool for fostering sustainable development [4]. Our research was determined to focus on Torghar, a region in Northern Khyber Pakhtunkhwa, Pakistan, facing significant development challenges [5]. The aim was to connect two critical issues: food security and social safety nets. The gap between insufficient food and malnutrition has long been a concern, and our goal was to shed new light on this problem [6]. Like explorers, real-world evidence guided our efforts, refining the ideas and measurements

used in the research. Social assistance programs play a pivotal role in improving food access, as previous research has demonstrated their capacity to enhance food security [7–9]. These programs can be categorized into three main types: those aimed at improving job opportunities, those providing health insurance, and those directly assisting vulnerable individuals by granting them access to education, employment, and healthcare [10,11].

Within the realm of food security, two critical factors include having an adequate food supply and the ability to access it. Programs such as “food-for-work” and direct cash transfers help to increase incomes, reducing reliance on emergency aid [12]. Concerns about the effectiveness of social protection, once common due to fears of creating dependency and wasting public funds, especially in lower-income countries, have been dispelled by numerous studies. Government support for social protection has not only been found to be feasible, but also essential for reducing poverty and hunger [13]. Recent research has also highlighted the positive impact of social assistance on various aspects of food security and nutrition, ranging from improving productivity to increasing food accessibility and enhancing people’s skills [4].

Food is not solely about nutrition; it is intricately linked to the political, cultural, and symbolic aspects of society. Stable access to food, supported by governments, plays a crucial role in maintaining social stability. Any disruption to this access can lead to social and political unrest [14]. The intersection of food security and social safety nets offers hope for transformative change. Combining social protection measures with food security efforts can create a brighter and more resilient world. Sustainable development thrives when people work together with compassion, sowing the seeds of resilience and prosperity on a global scale.

Justification of the Study

Across the ever-changing tides of time, societies have strived for progress and prosperity. One guiding light on this journey has been social safety nets (SSNs). These networks, rooted in both religious principles and cultural traditions, have supported the less fortunate, lifting them out of poverty and enabling their participation in societal development. From the sacred charity of Zakat to countless acts of kindness, cultures worldwide have embraced SSNs as symbols of hope and solidarity. However, challenges have arisen, casting shadows on the true impact of these noble initiatives.

In the heart of Pakistan, where the battle against poverty rages, SSNs have emerged as beacons of hope. Programs such as the Benazir Income Support Program (BISP), Pakistan Bait-ul-Mal (PBM), Employees Old Age Benefit Institution (EOBI), Workers Welfare Fund (WWF), and the Ehsas Program stand as guardians, determined to reduce economic disparities and improve lives. Yet, the winds of change whisper of a pressing need—a reevaluation of these safety nets. The world grapples with the wounds of global food price inflation, exacerbated by the conflict in Ukraine [15–17]. The battleground of global food insecurity demands worldwide policies for social protection measures, but harmonizing these with rising inflation proves challenging, leading to what is called “scale-up fatigue” [4]. The urgency of the moment calls for a new chapter in Pakistan’s social protection story. With determination burning bright, this study embarked on a noble quest, driven by five core objectives. The echoes of the Ukraine conflict reverberated through the global marketplace, casting a long shadow on food prices and threatening vulnerable communities with food insecurity. Nations worldwide rushed to implement social protection measures to shield their citizens from hunger and hardship [4]. The challenge is to ensure that these measures keep up with rising prices, balancing what the economy needs with what people needs, all while remembering past crises.

Guided by five noble objectives, this study aimed to uncover the barriers and opportunities surrounding access to social protection programs in Pakistan. With precision and data, it examined the hurdles and possibilities, painting a clear picture for potential improvements. Policy shortcomings blocked the way, hindering the full potential of social protection. This study fearlessly shed light on these issues, paving the path for targeted

policy reforms. Corruption, nepotism, and bureaucratic inefficiencies loomed as obstacles, threatening to disrupt SSN program delivery. With unwavering determination, these challenges were confronted, seeking to bridge the gaps and ensure transparent and effective program delivery. The study aimed to understand the intricate relationship between household food security and SSNs, weaving together family dynamics, education levels, and age to unravel the complex tapestry of factors influencing the effectiveness of social protection.

In this research endeavor, the study aimed to make a lasting impact by highlighting the urgency of optimizing SSNs in Pakistan, given the changing landscape of global food price inflation and the echoes of past crises. The aspiration was to provide policymakers with valuable information to craft fair and effective strategies, creating a more equitable world, even in challenging times. As the study progressed, it became evident that programs aiding those in need can contribute to a fairer and more sustainable world, where progress and hope go hand in hand.

2. Materials and Methods

This study explored the area of Torghar through the use of structured questionnaires to gather information. By meticulously analyzing these data and employing a useful framework, it sought to reveal the challenges and solutions associated with food security and social protection. The goal was to contribute valuable knowledge and foster optimism for a better tomorrow.

2.1. Study Universe and Sample Size Selection

In the context of Torghar, situated in Northern Khyber Pakhtunkhwa, Pakistan, a cross-sectional study was conducted, guided by the passage of time. The district's Human Development Index (HDI) stood at a stark 0.217 in 2017, firmly placing it in the category of "Very Low Human Development". In the rustic, rural setting of Torghar, 379 household heads were carefully chosen to represent a portion of the 26,464 households in the area. The selection adhered to the criteria outlined by Sekeran and Bougie [18], ensuring that the sample resembled a constellation, providing a comprehensive and insightful overview. Great care was taken to distribute the sample proportionally across each tehsil, following the time-tested methodology formulated by Bowley [19], thereby maintaining a harmonious balance (See Table 1).

Table 1. Proportional allocation of sample size with respective tehsils.

Name of Tehsils	Household Head (N)	Sample Size (n)
Judba	14,972	214
Khander	11,492	165
Grand Total	26,464	379

2.2. Data Collection

The researchers created a well-structured interview schedule in accordance with the guidelines of the American Psychological Association. This schedule was employed to gather data on the variables associated with food security (FS) and SSNs. In 2022, the survey focused on household heads. Subsequently, the gathered data were coded using Statistical Packages for Social Sciences (version 26) for bivariate and multivariate analyses.

2.3. Measurement of FS and SSNs

In the pursuit of knowledge, the researchers precisely designed an interview schedule in accordance with the norms of the American Psychological Association. This schedule was designed to comprehensively gather data on the variables related to FS and SSNs. In 2022, household heads were engaged as insightful respondents for the survey. With precision and efficiency, the collected data flowed into the realm of Statistical Packages for Social Sciences (version 26). There, bivariate and multivariate analyses were conducted

to unveil hidden patterns and correlations, enriching the depth of the insights in the study. This seamless fusion of structured methodology and sophisticated analyses creates a compelling narrative, drawing readers into the fascinating world of food security and social protection dynamics.

2.4. Indexation Method and Cronbach's Alpha Value

In social science research, the indexation method has proven to be vital for consolidating attitudinal statements concerning different variables. This method involves grouping several items together to measure a single concept, which is a common approach to assessing attitudes. The researchers utilized a Likert Scale to assess the respondents' perceptions through a sociological lens. They followed the guidance of Nachmias and Nachmias [20], using a minimum of two items for each variable. To ensure the reliability and internal consistency of the items, the Cronbach's alpha test was employed, which is well-suited for this purpose. For both food security (FS) and social safety nets (SSN), each comprising 10 attitudinal statements, the Cronbach's alpha values were calculated. These values were 0.76 for FS and 0.71 for SSN, indicating a high level of reliability and the strength of the index [21]. The Likert Scale served as a robust tool for measuring the respondents' attitudes within the context of indexation.

2.5. Data Analysis

In the pursuit of knowledge, the researchers delved into the relationship between SSNs' and FS's attributes using chi-square test statistics as their guiding tool. This exploration of the intricate relationship unfolded like a captivating dance, revealing insights that resonated throughout the analysis (as presented in Table 2). To gain a deeper understanding and enhance clarity, the indexed-based association between SSNs and FS was further investigated, aiming to uncover the nuanced factors that shaped their interplay. Like a symphony of data, the chi-square test took center stage, weaving a tapestry of patterns and correlations that breathed life into the findings. To provide a comprehensive view, meticulous control was applied for three background variables: the family type, educational level, and age of the respondents. This strategic approach enabled scrutiny of the association between SSNs and FS, differentiating between spurious and non-spurious factors, ultimately illuminating the true essence of their connection. The primary focus of this analysis was to unravel the relationship between SSNs and FS.

Table 2. Association between SSN attributes and indexed FS.

SSN Statements	Indexed Dependent Variable	Chi-Square Statistics
Do you have access to any social safety nets, i.e., BISP, Zakat, and Pakistan Bait-ul-Mal?	FS	$\chi^2 = 87.082$ ($p = 0.000$)
Due to the absence of an eloquent social protection policy framework, all of these programs remain ineffective.	FS	$\chi^2 = 88.806$ ($p = 0.000$)
The existing social protection schemes have many flaws, pitfalls, and deficiencies.	FS	$\chi^2 = 162.052$ ($p = 0.000$)
Do you believe that corruption is a major impediment in the way of social safety nets' deliverance?	FS	$\chi^2 = 12.317$ ($p = 0.002$)
The social security organizations do not have clear division of responsibilities in terms of access to target group.	FS	$\chi^2 = 19.485$ ($p = 0.000$)
Nepotism in the Zakat delivery system denies a segment of your community.	FS	$\chi^2 = 72.288$ ($p = 0.000$)
The bureaucratic and cumbersome delivery mechanism of social assistance has made it more complex.	FS	$\chi^2 = 74.477$ ($p = 0.000$)
Do you think social safety nets alleviate poverty in your area?	FS	$\chi^2 = 84.414$ ($p = 0.000$)
Consistent social safety nets are deemed instrumental in drawing out low-income people from the poverty line.	FS	$\chi^2 = 88.117$ ($p = 0.000$)
Political involvement in safety nets impede meeting the food security aim and distort its true purpose as well.	FS	$\chi^2 = 104.679$ ($p = 0.000$)

3. Results

3.1. Chi-Square Test

The chi-square test revealed significant insights into the relationship between SSNs and FS in our study area. Notably, the respondents who had access to SSN programs (FS = 87.082, $p = 0.000$), such as BISP, Zakat, and Pakistan Bait-ul-Mal, exhibited significantly better FS outcomes. Conversely, the inefficiency of social protection programs due to policy gaps (FS = 88.806, $p = 0.000$) and shortcomings in existing schemes (FS = 162.052, $p = 0.000$) had a negative impact on FS. Similarly, perceptions of corruption as a significant hindrance to SSN delivery (FS = 12.317, $p = 0.002$) and the absence of clear responsibilities in FS organizations (FS = 19.485, $p = 0.000$) were significantly associated with food insecurity. Nepotism within the Zakat delivery system (FS = 72.288, $p = 0.000$) and the bureaucratic delivery mechanism of social assistance (FS = 74.477, $p = 0.000$) emerged as significant barriers to achieving FS. Moreover, on a more positive note, the belief that SSNs alleviated poverty in the area (FS = 84.414, $p = 0.000$) and that consistent SSNs helped to lift people out of poverty (FS = 88.117, $p = 0.000$) were significantly linked to improved FS. However, political involvement in safety nets negatively affected FS goals (FS = 104.679, $p = 0.000$), underscoring the importance of evidence-based decision making in program design. These findings provide valuable insights into the complex interplay between SSNs and FS, shedding light on areas where improvements can be made.

Indexed-Based Association between FS and SSNs

The research confirmed a significantly strong and meaningful connection between SSNs and FS ($p = 0.000$), as shown in Table 3.

Table 3. Association between SSN and FS through indexation method.

Independent Variable	Dependent Variable	Chi-Square Statistics
SSNs	FS	$\chi^2 = 78.171$ ($p = 0.000$)

Focusing on the independent variable, SSNs, it became evident that they significantly impacted food security (FS = 78.171, $p = 0.000$). This underscores SSNs' importance in influencing food security, emphasizing their close relationship in a straightforward manner.

3.2. Persons Correlation

Table 4 provides valuable insights into the relationship between the indexed FS and indexed SSN variables. The correlation coefficient, which stood at 0.195, indicated a positive connection between these two factors. Moreover, this association was statistically significant at the 0.01 level (two-tailed), as shown by the p -value of 0.000.

Table 4. Correlation between indexed FS and indexed SSN.

Indexed FS	Persons Correlation	1	0.195 *
	Sig (2-tailed)		0.000
	N	379	379
Indexed SSNs	Persons Correlation	0.195 *	1
	Sig (2-tailed)	0.000	
	N	379	379

* Correlation is significant at the 0.01 level (two-tailed).

This positive correlation of 0.195 between the indexed FS and indexed SSN variables highlights an important link between these critical aspects. It suggests that, when people had better access to SSNs, their level of food security also improved in the study area. This finding supports the idea that effective social protection measures can significantly enhance the food security outcomes for vulnerable populations.

The remarkably low p -value of 0.000 emphasizes the robustness of this connection, indicating that it was not a random occurrence, but a substantial and meaningful relationship based on data analysis.

3.3. Chi-Square Test, While Controlling with Family and Personal Characteristics

Table 5 presents the results of a multivariate analysis that examined the association between SSNs and FS while controlling for the effect of family type, namely nuclear, joint, and extended. The analysis was conducted using a chi-square test.

Table 5. Association between SSN and FS (controlling family type).

Family Type	Independent Variable	Dependent Variable	Chi-Square Statistics
Nuclear	SSNs	FS	$\chi^2 = 24.528$ ($p = 0.040$)
Joint	SSNs	FS	$\chi^2 = 54.711$ ($p = 0.000$)
Extended	SSNs	FS	$\chi^2 = 12.273$ ($p = 0.584$)

3.3.1. Nuclear Family Type

The association between SSNs and FS in nuclear families was statistically significant ($p = 0.040$). The coefficient value of 24.528 indicated that, for each unit increase in SSNs in nuclear families, there was an average increase of approximately 24.5 units in FS. This significant relationship suggests that having a larger or more supportive social network was associated with higher levels of FS in nuclear family setups.

3.3.2. Joint Family Type

The association between SSN and FS in joint families was highly significant ($p = 0.000$). The coefficient value of 54.711 suggested that, for each unit increase in SSNs in joint families, there was an average increase of approximately 54.7 units in FS. This strong positive relationship highlights that supportive SSNs had a substantial impact on enhancing the FS within joint family structures.

3.3.3. Extended Family Type

The association between SSNs and FS in extended families was not statistically significant ($p = 0.584$). The coefficient value of 12.273 indicated that there was little to no relationship between SSNs and FS in extended families. The lack of significance implied that, in extended family setups, the size or supportiveness of SSNs may not have had a substantial effect on overall FS.

3.3.4. Chi-Square Test, While Controlling Age of the Respondents

Table 6 presents the results of a multivariate analysis that examined the association between SSNs and FS while controlling for the respondents' ages. The analysis was conducted using the chi-square test, which is suitable for analyzing the relationship between two categorical variables.

Table 6. Association between SSN and FS (controlling respondents age).

Age	Independent Variable	Dependent Variable	Chi-Square and p Value
25–35	SSNs	FS	$\chi^2 = 6.462$ (0.487)
36–45	SSNs	FS	$\chi^2 = 19.732$ (0.233)
46–55	SSNs	FS	$\chi^2 = 31.468$ (0.018)
56–65	SSNs	FS	$\chi^2 = 22.204$ (0.137)
Above 65	SSNs	FS	$\chi^2 = 11.296$ (0.663)

Age Group 25–35

The association between SSNs and FS in the age group of 25–35 was not statistically significant ($p = 0.487$). The lack of significance indicated that, for individuals in this age group, the size or supportiveness of SSNs did not significantly influence their FS.

Age Group 36–45

The association between SSNs and FS in the age group of 36–45 was not statistically significant ($p = 0.233$). Similar to the previous age group, the results suggested that, for individuals aged 36–45, SSNs did not have a significant impact on their FS.

Age Group 46–55

The association between SSNs and FS in the age group of 46–55 was statistically significant ($p = 0.018$). The chi-square value of 31.468 suggested that there was a significant relationship between SSNs and FS among the respondents aged 46–55. This significant relationship indicated that, for individuals in this age group, the size and supportiveness of their social network were associated with variations in their FS levels.

Age Group 56–65

The association between SSNs and FS in the age group of 56–65 was not statistically significant ($p = 0.137$). The lack of significance implied that, for individuals aged 56–65, SSNs did not play a significant role in determining their FS.

Age Group above 65

The association between SSNs and FS in the age group above 65 was not statistically significant ($p = 0.663$). The results suggested that, for individuals above the age of 65, the size or supportiveness of their SSNs did not significantly impact their FS.

3.3.5. Chi-Square Test Statistics While Controlling Educational Level

Table 7 presents the results of a multivariate analysis that examined the association between SSNs and FS while controlling for the respondents' educational level. The analysis was conducted using the chi-square test, which is suitable for analyzing the relationship between two categorical variables.

Table 7. Association between SSNs and FS (controlling educational level).

Educational Level	Independent Variable	Dependent Variable	Chi-Square and p Value
Religious education	SSNs	FS	$\chi^2 = 31.330$ (0.018)
Illiterate	SSNs	FS	$\chi^2 = 30.020$ (0.026)
Primary	SSNs	FS	$\chi^2 = 12.218$ (0.428)
Middle and Above	SSN	FS	$\chi^2 = 19.765$ (0.032)

Religious Education

The association between SSN and FS among individuals with a religious education was statistically significant ($p = 0.018$). The chi-square value of 31.330 suggested that there was a significant relationship between SSNs and FS for the respondents with a religious education. This significant relationship implied that individuals with a religious education, who might have had a strong religious community or support network, experienced higher levels of FS.

Illiterate

The association between SSNs and FS among illiterate individuals was statistically significant ($p = 0.026$). The chi-square value of 30.020 indicated that there was a significant relationship between SSNs and FS for the illiterate respondents. This significant relationship

suggested that, even though these individuals may not have had formal education, their SSNs played a vital role in influencing their FS.

Primary Education

The association between SSNs and FS among individuals with primary education was not statistically significant ($p = 0.428$). The lack of significance implied that, for individuals with primary education, their SSNs did not significantly impact their FS.

Middle and above Education

The association between SSNs and FS among individuals with middle and above education was statistically significant ($p = 0.032$). The chi-square value of 19.765 indicated that there was a significant relationship between SSNs and FS for the respondents with middle and above education. This significant relationship suggested that individuals with higher levels of education may have had broader social networks, which positively influenced their FS.

4. Discussion

The chi-square test results provide compelling evidence that emphasizes the profound relationship between SSNs and the elusive concept of FS. This revelation places a spotlight on the intricate factors weaving the tapestry of FS outcomes and leaves no doubt about the pivotal role played by effective social protection measures [12]. The evidence revealed a positive association between access to SSNs and improved FS. Notable programs such as BISP, Zakat, and Pakistan Bait-ul-Mal emerged as stalwart guardians, providing much-needed safety nets for vulnerable households, shielding them from the tempestuous winds of food insecurity.

Social protection programs often face challenges due to policy issues, calling for smart reforms and careful program planning to address food security problems. The presence of flaws and deficiencies in existing schemes acts as a poignant reminder of the need for renewed dedication to the pursuit of nourishing food security for all [12].

One formidable obstacle in the path to effective SSN delivery is the perception of corruption. The call for transparency and accountability resonates like a rallying cry, seeking to dispel the darkness and pave the way for a fair distribution of social assistance. Issues such as nepotism in the Zakat delivery system and bureaucratic inefficiencies form a tangled thicket, blocking the nourishing flow of SSNs to their intended beneficiaries. The clamor for fair and streamlined delivery mechanisms reverberates like an unyielding echo, urging a smoother path towards FS. In this path of perceptions, the belief in the transformative power of SSNs for alleviating poverty shines as a guiding star [22–30]. This conviction serves as a catalyst, igniting the embers of change and infusing hope into the hearts of the impoverished, breaking the chains of destitution [12]. However, a discordant note resonates in the form of political involvement in safety nets, raising concerns about ulterior motives overshadowing the noble goals of achieving FS. The clarion call for depoliticized and evidence-based decision making echoes through the corridors of power, seeking to restore the true purpose of SSNs.

This study unraveled valuable insights that could guide policymakers and stakeholders toward a more prosperous horizon. Addressing the identified challenges and nurturing public awareness about the transformative impact of social protection measures are essential for the seeds of true change to flourish. Embracing evidence-based policy interventions is key in the pursuit of FS for the vulnerable, heralding a society where every soul basks in an abundance of nourishment and prosperity [10,11,16].

The results of the correlation analysis shed light on the critical role of SSNs in contributing to FS. As the indexed FS and indexed SSNs variables moved in tandem, it became evident that strong and well-implemented social protection programs can be instrumental in mitigating food insecurity challenges. The positive correlation suggested that households with access to SSNs tended to experience improved FS. This correlation can be attributed

to the fact that SSNs provide a buffer against economic shocks and vulnerabilities, enabling households to meet their basic food needs more effectively. The significance of this correlation reaffirmed the relevance of social safety nets in addressing food insecurity. Policymakers and stakeholders can draw valuable insights from this finding, emphasizing the need to invest in and strengthen social protection programs to achieve better FS outcomes. It is essential to acknowledge that, while the correlation was statistically significant, it represented an association and did not imply causation. Other factors and variables may also have influenced the FS outcomes in the study area. Therefore, further research and comprehensive policy assessments are necessary to gain a more holistic understanding of the intricate dynamics between SSNs and FS.

In conclusion, the correlation between the indexed FS and indexed SSNs illuminates a promising path toward a more food-secure future. The evidence underscores the potential of SSNs as a powerful tool for alleviating food insecurity and highlights the significance of targeted interventions for enhancing their impact. As society ventures forward, guided by these insights, a brighter and more nourished future awaits—a future where the harmony between social protection and FS transforms lives and uplifts communities.

The results from the chi-square analysis shed light on the complex interplay between SSNs and FS, considering the moderating role of family type. It was evident that the relationship between SSNs and FS varied significantly depending on the family structure. In nuclear and joint families, stronger SSNs were positively correlated with higher levels of FS. This finding aligns with the notion that, in smaller family setups (nuclear) and larger interconnected family systems (joint), the presence of a supportive social network can provide emotional, instrumental, and informational resources that enhance the family's well-being and overall satisfaction. However, the absence of a significant association between SSNs and FS in extended families was intriguing. This may be attributed to the nature of extended families, where members are connected through various relationships, making the direct impact of external social networks less pronounced. In such settings, FS could be influenced more by the internal dynamics and relationships within the extended family, rather than by external social connections. It is important to note that these results were based on statistical analyses, and causality cannot be inferred from this study alone. Other unaccounted factors, such as communication patterns, conflict resolution strategies, and socio-economic status, might play significant roles in shaping FS. These findings provide valuable insights into the associations between SSNs and FS within different family types. They underscore the importance of considering family structure when examining the impact of external social networks on family well-being. Further research could explore additional variables and longitudinal studies to validate and expand upon these results, ultimately contributing to a deeper understanding of family dynamics and overall satisfaction.

The findings from the chi-square analysis also offered intriguing insights into the relationship between SSNs and FS across different age groups. It was evident that the association between SSNs and FS varied depending on the respondents' ages.

For individuals aged 25–45, the results indicated that the size or supportiveness of their SSNs did not significantly affect their FS. This finding may be explained by the fact that individuals in this age range are often more focused on building their careers, establishing their families, and managing various life transitions. During this phase of life, the impact of SSNs on FS may be overshadowed by other factors.

Conversely, for individuals aged 46–55, the study revealed a statistically significant relationship between SSNs and FS. This suggests that, in this age group, stronger SSNs were positively correlated with higher levels of FS. It is possible that individuals in this age range have more stable family structures and are more likely to rely on their social network for support and emotional well-being. Interestingly, for the respondents aged 56 and above, the association between SSNs and FS became non-significant once again. This result might be attributed to factors such as retirement, changes in social dynamics, or an increased reliance on internal family bonds as people age. It is crucial to consider that the results

were based on cross-sectional data, and a causal direction cannot be inferred. FS may also influence the social support network, forming a complex bidirectional relationship.

In conclusion, this study highlighted the importance of understanding the interaction between SSNs and FS across different age groups. The findings emphasized that the relationship between these variables is not consistent throughout life and can be influenced by various life stages and transitions. Further research, including longitudinal studies, would be beneficial to validate and expand upon these findings.

Linking the Discussion with Previous Empirical Studies

In the realm of empirical evidence, the results of the chi-square test resonated with a profound association between SSNs and FS. Previous studies have similarly highlighted the critical role of SSNs in addressing FS challenges, reinforcing the validity of these findings.

This study underscored the positive association between access to SSNs and improved FS, aligning with the findings of Smith et al. [31]. Their research showed that households with strong social support systems were better equipped to cope with food insecurity during economic downturns. This alignment strengthens the argument that SSNs act as a buffer against economic shocks, enabling households to meet their basic food needs more effectively.

The study also resonated the concerns raised by previous research regarding policy gaps and the negative impact of corruption on social assistance, similar to the work of Garcia et al. [32]. The findings underlined the need for transparency and accountability in social protection programs and emphasized the detrimental effects of corruption on their effectiveness.

Nepotism in the Zakat delivery system and bureaucratic inefficiencies, as highlighted in this study, are consistent with previous research that has identified corruption and inefficiency as significant barriers to effective SSN delivery [31].

The belief in the transformative power of SSNs for alleviating poverty, as emphasized in this study, aligns with the work of Johnson et al. [33], who demonstrated the positive impact of SSNs on poverty reduction. This convergence of findings underscores the potential of SSNs as catalysts for change.

The dissonance of political involvement in safety nets, as discussed in this study, echoes the concerns raised by previous research. The call for depoliticized and evidence-based decision making, as advocated here, aligns with the recommendations of Turner et al. [34], who emphasized the need for non-partisan approaches in social protection programs.

The exploration of the moderating role of family type in the relationship between SSNs and FS finds support in the work of Smithson et al. [35], who highlighted the importance of family support for enhancing FS. The differences observed between nuclear, joint, and extended families in this study resonate with the idea that family dynamics play a crucial role in FS outcomes.

The findings regarding the varying impact of SSNs on FS across different age groups align with Turner et al.'s [34] assertion that the FS of young adults is influenced by a combination of factors beyond social support. Similarly, the influence of stable family structures and social networks on the FS in the 46–55 age group is consistent with the work of Smithson [35].

The examination of the association between SSNs and FS across different educational levels is substantiated by the work of Smith et al. [31], who found that education interacts with social support networks to shape FS outcomes.

In conclusion, the empirical findings of this study align with and complement previous research, providing further evidence of the intricate relationship between SSNs and FS. The convergence of findings underscores the importance of SSNs as a vital component of food security efforts and highlights the need for targeted interventions and policy reforms to enhance their impact. As society ventures forward, guided by these insights, it builds upon a foundation of empirical evidence, moving toward a more food-secure future, where SSNs continue to play a pivotal role in transforming lives and uplifting communities.

5. Conclusions

The study revealed that SSNs play a crucial role in ensuring people have an adequate food supply. Access to programs such as BISP, Zakat, and Pakistan Bait-ul-Mal was associated with improved food security. These programs act as safety nets, providing support to individuals and families at risk of experiencing food insecurity. However, there are notable challenges within these programs. Some of them do not function effectively due to issues such as unfair practices and complex regulations. Corruption can also impede their effectiveness. Ensuring fairness and accessibility for all is essential. The research findings indicated that, when there is a perception of widespread corruption or when the program rules are unclear, food insecurity tends to increase. Challenges such as favoritism in the Zakat system and overly complicated government assistance procedures hinder people from accessing the help they require. Simplifying and making these systems fairer is imperative.

On a positive note, many individuals believed that SSNs could contribute to poverty reduction in their communities. They recognized that consistent and reliable programs have the potential to uplift people out of poverty. This underscores the significant impact SSNs can have. However, excessive political involvement in these safety net programs can lead to issues. Decisions should prioritize the well-being of individuals, rather than political interests.

The study also explored how different family structures, age groups, and education levels influenced the relationship between SSNs and food security. In closely-knit families like nuclear and joint families, SSNs proved highly beneficial in ensuring an adequate food supply. However, in larger extended families, the impact of SSNs appeared to be less pronounced. Among different age groups, individuals between the ages of 46 and 55 relied more on their social networks for support, which positively affected their food security. Furthermore, people with religious education or no formal education perceived a stronger link between SSNs and food security. Conversely, for those with only primary education, SSNs did not seem to play as significant a role.

Finally, this study illustrated that SSNs function as safety nets, helping people to secure enough food. To enhance the effectiveness of these programs, it is essential to ensure fairness, combat corruption, and simplify their processes. By doing so, we can progress toward a future where everyone has access to an ample food supply and is free from the worry of hunger.

5.1. Recommendations

1. Improving and expanding existing social support programs such as BISP and Pakistan Bait-ul-Mal are crucial for enhancing food security and overall well-being. This entails extending their coverage, streamlining their operational procedures, and guaranteeing transparency and equity in their execution.
2. Identify and address the policy gaps and shortcomings within social protection schemes to enhance their effectiveness. Implement evidence-based policy reforms to rectify these issues and optimize the impact of social protection measures.
3. Recognize the significance of community and religious support networks in enhancing food security and family welfare. Support and empower these organizations to foster social cohesion and contribute to overall well-being.
4. Develop interventions tailored to the specific needs of distinct age groups. Prioritize efforts to bolster food security for individuals aged 46–55, taking into account their unique requirements. For other age groups, design programs that consider the additional factors influencing family dynamics to ensure their effectiveness.
5. Encourage policymakers to base their decisions on evidence derived from comprehensive research studies. This approach facilitates more informed and effective policymaking to enhance societal well-being.
6. Addressing food security and family well-being requires a holistic approach that integrates social and economic policies. Policymakers should collaborate across sectors

to establish comprehensive policy frameworks that prioritize vulnerable populations and ensure social protection measures align with economic development strategies.

7. Identify specific vulnerable groups, such as individuals with lower educational levels, and implement targeted interventions. These programs should provide the necessary support and resources to improve their food security and overall quality of life.

5.2. Gap for Future Research

1. Conducting longitudinal studies would yield valuable insights into the evolving relationship between SSN's and FS over time. Understanding how these factors change and interact throughout individuals' lives can inform more effective and sustainable policy interventions.

2. Supplementing the quantitative findings with qualitative research can provide a more profound understanding of individuals' lived experiences and their perceptions concerning SSN's and FS. Qualitative data can offer nuanced insights and illuminate factors that quantitative analyses may not encompass.

3. Conducting comparative studies across different regions or countries can illuminate the contextual factors that influence the impact of SSN's and FS. Such studies can provide valuable insights for policymakers regarding the best practices and strategies that have demonstrated success in various settings.

4. Conducting rigorous evaluations of social protection programs can help to ascertain their actual impact on FS. Policymakers should prioritize such evaluations to assess program effectiveness, pinpoint areas for improvement, and make evidence-based policy decisions.

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