BRIDGING THE DISABILITY GAP: A RURAL-URBAN PERSPECTIVE IN PAKISTAN

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CERTIFICATE

This is to certify that this thesis entitled: **"Bridging the Disability Gap: A Rural-Urban Perspective in Pakistan."** submitted by Momna Sohail is accepted in its present form by the PIDE School of Policy, Development and Governance, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Public Policy.

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Abstract

The current study aims to handle a critical gap in socioeconomic research by conducting a thorough investigation of disability effects on standard of living among rural and urban populations in Pakistan. Through PSLM 2019-20, this study aims to create a detailed analysis and targeted policy interventions considering rural-urban disability differences. The research bases its findings on the Social Model of Disability, the Capability Approach and Intersectionality theory to demonstrate that disability-related disadvantage in Pakistan results from social and structural barriers which exist in infrastructure, service delivery systems and societal norms. Households containing disabled members show a persistent decline in their Standard of Living (SoL) which amounts to 0.147 standard deviations below non-disabled households. Moreover, the penalty affects rural and urban areas but results in the greatest deprivation for disabled women living in rural areas. The domain level analysis in the study depicted that disabled households face major disadvantages in food security, digital connectivity, healthcare access, education and sanitation. This disadvantage was dominant in the rural regions where geographic barriers and gender discrimination creates additional obstacles to just inclusion.

The UNCRPD ratification by Pakistan and the progressive disability policies have not led to the fulfillment of legal commitments because social protection coverage remains limited and disability councils operate without enough funding and necessary data links to serve marginalized communities. In Pakistan, research demonstrates that environmental and social obstacles affect people more than their own individual characteristics. This research supports a complete system transformation through rights-based multisector reforms which include universal design integration in infrastructure, enhanced digital and rural connectivity, anti-discrimination enforcement, expanded social protection programs and disabled person's active participation in governance. The research findings demonstrates that Pakistan needs to eliminate structural and institutional obstacles instead of just raising welfare payments to achieve social inclusion and sustainable development for Persons with disabilities (PWDs), which provides a practical framework for disability inclusion policies in developing nations.

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List of Abbreviations

Abbreviation	Full Term or Meaning
BHU	Basic Health Unit
BISP	Benazir Income Support Programme
CRPD	Convention on the Rights of Persons with Disabilities
DFI	Disability Framework Index
DPO	Disabled Persons' Organization
FIES	Food Insecurity Experience Scale
GB	Gilgit-Baltistan
GDP	Gross Domestic Product
ICF	International Classification of Functioning, Disability and Health
ICT	Islamabad Capital Territory

KP	Khyber Pakhtunkhwa
MICS	Multiple Indicator Cluster Survey
MPI	Multidimensional Poverty Index
NGO	Non-Governmental Organization
NPO	Non-Profit Organization
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
PIDE	Pakistan Institute of Development Economics
PSLM	Pakistan Social and Living Standards Measurement
PSLMS	Pakistan Social and Living Standards Measurement Survey
PWD	Person with Disability
PWDs	Persons with Disabilities
SDG	Sustainable Development Goal
SDGs	Sustainable Development Goals
SoL	Standard of Living
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNDP	United Nations Development Programme

WB	World Bank
WG-SS	Washington Group Short Set
WHO	World Health Organization

Chapter One: Introduction

1.1 Background of the Study

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and the Sustainable Development Goals (SDGs) have established "leaving no one behind" as a core global development principle which requires disability-inclusive development. The implementation of these promises to create better living conditions faces challenges because of limited data availability and poor execution of disability policies.

The main objective of nations working towards better welfare for disadvantaged groups focus on including PWDs in education, healthcare, employment and social involvement. The situation for disabled people in developing nations is worse because rural areas do not have basic infrastructure or service availability which results in a double disadvantage (Hameed et al. 2023).

According to the World Health Organization (WHO), 15% of the global population has disabilities yet people with disabilities encounter multiple types of discrimination in their everyday activities. This can directly be witnessed in Pakistan through data acquisition like PSLM 2019-20. The prevalence of disability in Pakistan shows significant variation because of different definitions and insufficient data which results in estimates ranging from 3.3 million to 27 million people with disabilities (UNFPA, 2024). The Disability Data Initiative (2024) shows that rural areas have a slightly higher prevalence rate of 24.9% compared to urban areas at 22.6%.

Importance of Rural-Urban Perspectives

The total number of PWDs are close between urban and rural areas yet disabled people in rural settings experience more severe living standard challenges because of insufficient infrastructure, restricted services and increased discrimination. Research by Shakeel et al. (2016), indicates that disabled women together with other rural Pakistani minorities hold less wealth than urban residents and experience reduced access to services.

However, the standard of living for PWDs extends beyond financial indicators because it includes various elements which include housing conditions, sanitation facilities, educational opportunities, access to water and digital network availability. The urban population outperforms rural residents in these areas because urban location benefits create superior social and economic integration (Davis 2006).

1.2 Research Questions

1: How can a multidimensional Standard of Living (SoL) index be constructed using Principal Component Analysis (PCA) for Pakistan based on the PSLM 2019-20 dataset?

2: To what extent does disability independently impact household living standards in Pakistan?

3: How do disability penalties in living standards differ between rural and urban households, and what are the further variations across age and gender intersections in Pakistan?

1.3 Research Objectives

This study aims to address gaps in the existing literature by:

1. Constructing a multidimensional Standard of Living (SoL) index using Principal Component Analysis (PCA) based on the PSLM 2019-20 dataset.
2. Evaluating the disability penalty in household living standards through regression models, controlling for age, gender, and region to distinguish the independent effect of disability.
3. Analyzing variations in disability penalties across rural and urban contexts, with further exploration of age and gender intersections.

1.4 Statement of the Problem

Developing countries experience substantial social and economic disadvantages because of disability which creates poverty, blocks service access and supports discriminatory institutional practices. The current global statistics show that developing nations host most PWDs who face multiple obstacles that block their access to education, healthcare and employment which decreases their life quality. The large number of disabled people in Pakistan together with the substantial financial costs of their care demonstrate how different social groups experience unequal treatment. Significant provincial and gender disparities further highlight the need for an intersectional and geographic understanding of disability.

People with disabilities face extra obstacles when living in rural areas because these locations lack proper infrastructure, offer limited healthcare and education access, and restricted employment choices. The Pakistan Bureau of Statistics (2021) shows that rural households with disabilities experience decreased standard of living because of these institutional weaknesses. According to the International Labor Organization (2022), rural disabled workers encounter discrimination and exclusion in social benefits which compel them to take unregulated low-wage employment.

The standard of living includes the housing, sanitation, education and asset ownership, which serves as a vital measure to understand how disability impacts people and their communities. The current disability policies in sync with social protection programs direct their support toward urban areas but fail to address the distinct needs of rural communities. The absence of empirical studies about disability-related living standard disparities between rural and urban Pakistan creates a significant policy gap because of insufficient relevant evidence.

The research investigates how disability affects rural and urban living conditions in Pakistan to create evidence-based recommendations for social policies which promote equality for all citizens across different areas.

1.5 Research Gap

PSLM 2019-20 survey contains district-level information about Pakistani living conditions and disability restrictions but researchers have not conducted any studies that analyze disabled and

non-disabled household differences between rural and urban areas (Pakistan Bureau of Statistics, 2021). First, the collection of disability data in the country encounters technical obstacles and public discrimination which leads to insufficient documentation of disability rates and complete understanding of disability effects (Washington Group on Disability Statistics, 2019). As a consequence, most policy decisions rely on limited or binary indicators and fail to address the nuanced and intersectional effects of disability.

Secondly, PSLM 2019-20 survey contains detailed household information at national and provincial and district levels which includes living standards and functional limitations data but lacks official research about disabled versus non-disabled household differences across different areas. The official report from PSLM 2019-20 shows district-level disability rates and living standards but it lacks data that connects disability status to rural-urban areas which hinders policymakers from using spatial evidence to find and support the most at-risk groups.

The study by Khalid (2023) demonstrates that social protection programs in Pakistan do not effectively solve the various problems disabled people encounter in rural settings because the programs lack detailed location-specific information and targeted policies. Minhas (2025) discovered that people with disabilities face additional obstacles when trying to enter markets located in underdeveloped urban areas.

The research fills the existing knowledge gap through its implementation of various assessment techniques and robust statistical approaches to analyze rural and urban settings and its inclusion of disability data and population statistics from PSLM's microdata.

1.6 Significance of the study

The research holds significant value because it investigates how disability-related monetary effects on social inequality within rural areas which typically receives insufficient attention from standard development initiatives in Pakistan. The research uses efficient measurement methods to study national data which enables the creation of inclusive policy solutions. The research evidence will help create robust social protection systems and better local infrastructure and track SDG progress. The research aims to help policymakers and practitioners create solutions for disabled rural Pakistani communities which will boost social equity and inclusion throughout national and regional areas.

1.7 Organization of the Study

The thesis is structured into seven chapters:

1. Introduction: Established the research purpose, background, objectives, significance, and research gap.
2. Literature Review: Examines global and regional studies of disability and living standards, highlighting rural-urban differences and theoretical models.
3. Methodology: Details the PSLM 2019–20 data source, sampling strategy, construction of variables, and analytical methods employed in index creation.

4. Results and Analysis: Presents descriptive and regression findings, including spatial and demographic patterns, and domain-specific disparities.
5. Discussion: Interprets key findings, explores mechanisms of disadvantage and intersectionality, discusses methodological innovations, and assesses policy implications.
6. Policy Analysis and Recommendations: Analyzes Pakistan's legislative frameworks, sectoral programs, and policy implementation challenges using recent empirical findings. Policy Recommendations are provided according to these challenges.
7. Conclusion: Summarizes main insights.

Chapter Two: Literature Review

Table 1: Key Studies on Disability, Poverty, and Rural-Urban Inequality

Author(s), Year	***Region / Country***	***Focus***	***Methods / Data***	***Key Finding for This Thesis***	***Gap Addressed by This Study***
WHO & World Bank, 2011	Global (LMICs)	World Report on Disability	Global review	Disability understood as interaction of impairments and barriers; PWDs have worse outcomes across sectors.	No household-level rural–urban SoL analysis for Pakistan.
Zaidi & Burchardt, 2005	United Kingdom	Extra disability costs and SoL	Household survey; SoL approach	Extra costs significantly reduce effective living standards of disabled households.	High-income context; no multidimensional, rural–urban SoL index.
Mitra, 2006; Mitra et al., 2013	Multiple LMICs	Capability approach and disability	Household surveys	Shows income alone misses disability deprivation; calls for multidimensional welfare measures.	Limited Pakistan application; weak spatial (rural–urban) focus.
Alkire & Santos, 2010, 2014	Global / national MPIs	Multidimensional poverty (AF, MPI)	Survey microdata	Multidimensional indices reveal hidden deprivation and improve targeting.	Disability not integrated into MPI for Pakistan.

Banks & Polack, 2014; Banks et al., 2017	LMICs	Disability–poverty "vicious cycle"	Reviews and case studies	Disability and poverty reinforce each other over time, especially in LMICs.	Limited use of national microdata; little rural–urban detail.
Lipton, 1997; Davis, 2006	Developing countries	Urban bias and rural underdevelopment	Policy and empirical analysis	Policies favour urban areas, creating chronic rural service and infrastructure gaps.	Disability dimension largely absent; no disabled vs non-disabled SoL gap.
Berry & Okulicz-Kozary n, 2011	International	Rural–urban wellbeing paradox	Cross-country analysis	Urban areas offer better services, rural areas mixed wellbeing patterns.	Does not examine disability or Pakistan specifically.
UNICEF, 2013, 2021; Burchardt, 2016, 2017	Global / LMICs	Disability, gender, place (intersection)	Surveys; intersectional methods	Rural disabled women face the highest and most complex exclusion.	Methods not applied to PSLM 2019–20 or Pakistan-wide SoL index.
Hameed et al., 2023; DDI, 2024	Pakistan	Disability prevalence and data systems	National survey analysis	Provide updated prevalence and assess Pakistan's disability data quality.	No multidimensional SoL index or disability penalty by rural–urban.
Shakeel et al., 2016; Ahmad et al., 2019	Pakistan (rural focus)	Rural disabled women, services, climate	Surveys and case studies	Show severe barriers for rural disabled households, especially women.	Not nationally representative; no regression-based PSLM analysis.

2.1 Essential Reviewed Studies

The research investigates how disability research studies have evolved through time by focusing on three main areas; multidimensional assessment of disability, rural-urban inequality and theoretical models that explain disability disadvantage. The review aims to establish a foundation for further analysis by combining worldwide studies with Pakistani research to study rural Pakistan's disability-related disadvantage. The review examines the development of disability research through academic theory and empirical evidence which led to the creation of new inclusive development policies beyond medical frameworks.

The review maintains the significance of the study because it manages an extensive evaluation of worldwide disability research frameworks which can be modified for Pakistan's economic context to analyze and understand the rural disadvantage amongst PWDs. This review will cover theoretical models, measurement advancements, spatial methods and new directions in disability research to determine the essential knowledge gaps that the study aims to resolve.

2.2 The Global Context

This study adopts the concept of the "disability penalty" as outlined in the World Report on Disability (World Health Organization & World Bank, 2011). The disability penalty shows the actual reduction in household quality of life and personal welfare that occurs because of disability status after researchers control for age, gender and regional differences. The framework enables researchers to analyze disability effects on socioeconomic status and quality of life without interference from other variables which follows international research criteria.

The worldwide disability agenda starts by acknowledging that disability impacts one billion people across the globe who make up 15% of the total population. The World Report on Disability establishes disability as a system of barriers which combines medical conditions with environmental, institutional and attitudinal obstacles. The report identifies disability as a development priority by showing how people with disabilities experience continuous exclusion from health services, education, employment and social activities (WHO & World Bank, 2011).

The report provides more than statistical data about prevalence because it defines the "disability penalty" which describes how people with disabilities encounter extra barriers when trying to access opportunities and services. People with disabilities experience their worst outcomes in low and middle income countries (LMICs) because these nations have insufficient infrastructure, restricted resources and social obstacles which make disability challenges more difficult to manage. The WHO & World Bank (2011) research findings served as evidence for future policy creation which resulted in the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and the addition of disability to the Sustainable Development Goals (SDGs).

2.3 Definition of Disability in the Pakistani Context

The Pakistani government defines disability through its legislative and policy frameworks which include the National Policy for Persons with Disabilities (2002) and the Disabled Persons (Employment and Rehabilitation) Ordinance (1981). The documents show disability by describing how people cannot perform regular tasks because of their injuries or diseases or birth defects. The national perspective includes three main categories which are physical disabilities and sensory disabilities that affect vision and hearing and mental health conditions. Pakistan's census and major surveys, such as the Pakistan Social and Living Standards Measurement (PSLM), have followed a functional approach, identifying disabilities related to seeing, hearing, walking, learning, and cognition.

The country has modified its official definitions through time to match international developments since the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) became effective. The UNCRPD promotes a social model which defines disability through the combination of health conditions and personal factors and environmental obstacles instead of medical conditions alone. The framework now requires people to participate socially while achieving full inclusion through complete removal of social obstacles.

For the purposes of this study, the PSLM's functional criteria for disability are adopted to ensure compatibility with available national data and policy relevance. The research draws its framework from worldwide standards which support the need to understand both personal obstacles and environmental restrictions that prevent People with Disabilities from fully participating in their communities.

2.4 Theoretical Evolution: From Medical to Social Approaches

The Medical Model Legacy

The medical model controlled early disability research and policy development because it treated disability as individual medical problems which needed medical solutions and rehabilitation (Goffman, 1962). The medical model's focus on individual deficits led institutions to create policies that focused on treatment and rehabilitation. The method provided crucial clinical data but it did not address the complete spectrum of disability which includes social, economic and political aspects.

Later studies revealed that social systems produced most barriers to disability access rather than physical limitations which made the medical model less effective. Goffman demonstrated in his research that societies create social separation through differentiation by labeling particular people as different and then generate specific reactions toward them which include prejudice, exclusion and acceptance. The research findings enabled people to recognize disability as a social construct which develops through medical beliefs, social treatment and public opinions.

The Social Model Revolution

The Social Model of Disability, pioneered by Michael Oliver (1990), shifts the focus from individual impairments to societal barriers. The social model of disability introduced a new way of understanding disability which changed how society approaches disability issues. The

research by Imrie (1996) showed how cities actively prevent disabled people from accessing public spaces because of their inaccessible design and discriminatory treatment. The new perspective moved away from disability assessment of individual people to show how social barriers create disability because of inadequate accommodations for human diversity.

Through his work, Yeo (2005) applied the social model of disability in analysis to international development to demonstrate how development policies and practices actively work to exclude people with disabilities. The research determined that disability inclusion requires to become a core element of development programs and official government policies to eradicate exclusion from societies. The social model's focus on barrier elimination and social transformation helped create the UNCRPD and disability-inclusive development methods through its connection to human rights principles.

The Capability Approach Integration

Sen developed the capability approach which focuses on real-life opportunities and freedoms that enable people to create meaningful lives rather than pursuing material possessions (1992; 1999). The perspective proves its worth in disability research because it reveals how personal traits and social discrimination and physical obstacles prevent people from achieving their goals even when they have equivalent financial means.

Sophie Mitra conducted a fundamental research (2006) which demonstrated through the capability approach that disabled people encounter specific conversion barriers because their higher expenses, dependency needs and service limitations prevent their financial resources from generating equivalent well-being as non-disabled people. Mitra shows through research that disability-based disadvantages exist in multiple forms which go beyond what income statistics can measure. The research suggests using multiple indicators which include social participation, education access, healthcare availability and community inclusion to create an accurate assessment of welfare and disadvantage for people with disabilities (Mitra, 2006).

Intersectionality and Multiple Disadvantages

The study of disability through intersectionality theory enables researchers to understand how various social positions and disadvantages affect people with disabilities. Crenshaw (1989) established intersectionality as a concept which shows how different types of discrimination combine to produce distinct patterns of social exclusion that standard single-variable approaches cannot detect.

Meekosha (2006) used intersectionality to show how disability produces various social benefits and drawbacks which emerge when disability interacts with gender, class, race and additional social factors. The perspective demonstrates rural disability disadvantage through its explanation of how disability, gender and socioeconomic status interact with geographic location to produce various forms of social exclusion.

Quantitative research analyzes statistical relationships between different forms of disadvantage through intersectionality frameworks which Burchardt (2017) and UNICEF (2021) describe.

Research shows that disabled women living in rural areas experience the worst levels of exclusion which requires specific policy solutions that tackle their combined disadvantages.

2.5 Establishing the Disability-Poverty Nexus

Multiple studies have proven the connection between disability and poverty through empirical research which shows these factors create a mutual impact (Banks & Polack, 2014; Banks et al., 2017).Banks and colleagues' systematic reviews demonstrate that disability and poverty create a continuous cycle because they influence each other through various connections between them. People who exist in poverty face higher risks of developing disabilities because they lack access to nutritious food, safe living environments and proper medical care. The combination of discriminatory practices and disability-related expenses leads to a sequence which results in poverty.

The research shows that this connection exists most powerfully in LMICs because these nations do not have sufficient social protection networks and encounter various environmental difficulties. The disability and poverty form a continuous cycle of disadvantage which experts call a "vicious cycle" that worsens with time and repeats across successive family generations.

Eide & Ingstad (2013) studied how disadvantage moves from one generation to the next to explain why disability-related poverty continues to affect successive family generations. The depicts how PWDs' households endure long-lasting disadvantages which impact their descendants so they need complete intervention programs that manage present requirements and future growth needs.

2.6 Multidimensional Poverty Measurement

The creation of multidimensional poverty measures has brought significant progress to the process of evaluating and quantifying disability disadvantage. The Alkire & Foster (2011) framework provides researchers with a method to develop multidimensional poverty indices that measure deprivation across different life domains. Their method enables researchers to spot who experience deprivation across multiple domains which offers better insights into disadvantage than using simply the income-based indicators.

The methodology developed by Alkire & Santos (2010, 2014) demonstrates its effectiveness for policy evaluation and tracking in global and national contexts. The research demonstrates that multidimensional poverty assessment tools detect hidden patterns of disadvantage which standard income-based measures fail to detect especially for vulnerable groups including people with disabilities.

Scientists use different research methods to study disability benefits because these methods enable them to comprehend how disability impacts different aspects of life. The hidden costs which people with disabilities face when accessing services and their barriers to access remain undetected by income-based measurements but multidimensional assessments can measure their health status, education level, living standards and social involvement.

2.7 Extra Costs and Standard of Living

Research into disability disadvantage depends on studies about disability-related additional expenses as Zaidi and Burchardt (2005), Mitra and colleagues (2013) have shown. Zaidi & Burchardt established through their research that people with disabilities need to spend extra money on their disability-related needs which include medical expenses, assistive technology, and personal care support and transportation costs. The additional expenses force disabled families to earn more money in order to maintain their current lifestyle at the same level as non-disabled families.

Mitra (2013) and colleagues studied different countries to show that disability costs exist everywhere but their size depends on the specific situation. Their research provides crucial evidence for the inadequacy of income-based poverty measures for capturing disability disadvantage and supports the development of disability-adjusted poverty measures.

Research based on the extra costs show important implications for multidimensional poverty measurement. The studies depict that standard poverty indicators may not accurately reflect the living standards of disabled households. Research findings about these elements have generated requirements for poverty measurement systems that use disability-specific methods to track additional expenses, service differences and unequal access to opportunities.

2.8 Urban Bias and Geographic Disadvantage

Development economics research investigates urban bias through studies of how it influences the policy decisions and resource distribution mechanisms. The research by Lipton (1997) showed how government policies and investment choices create urban advantages which result in lasting rural underdevelopment in various domains of life. The urban bias creates unequal access to services, infrastructure, employment and political representation.

Davis (2006) proves in his research that urban bias persists in current development projects despite rural development receiving increased attention. His research shows that cities receive more public funding than other areas which creates long-term benefits that grow progressively stronger. The urban preference creates two types of disadvantages for people with disabilities because they must overcome barriers related to their disability and also deal with restrictions based on their location.

Burki et al research on Pakistan specifically documents how urban bias affects service delivery and development outcomes in the Pakistani context. The research shows that rural areas perform worse than urban areas in health metrics, educational standards, infrastructure development and face major service delivery and reach challenges.

2.9 Rural-Urban Wellbeing Paradoxes

Berry & Okulicz-Kozaryn (2011) evaluates in their study the urban-rural wellbeing paradox to understand how different locations affect human development and the quality of life. The study

reveals that urban areas provide superior service access and opportunities yet create social isolation problems, environmental damage and economic disparities.

According to common assumptions of this paradox, disability reveals that rural residence creates more disadvantages than urban advantages. People who live in rural areas have good social relationships and can afford housing at affordable prices but these benefits come with the drawback of limited services and insufficient community resources.

The wellbeing paradox research demonstrates that researchers need to develop complex methods to study rural disadvantage because they must analyze both negative and positive factors. The perspective in disability research shows that rural disabled people need and get help through unique systems which differ from what urban disabled people require.

2.10 Household Structure and Wellbeing

Social scientists study household organization and family member relationships through research to understand disability effects on family health and resource distribution between family members. The research by Quisumbing & Maluccio (2003) examines Bangladesh, Ethiopia, Indonesia and South Africa to show that asset ownership between men and women at marriage time determines their bargaining power which affects household spending on food, education and healthcare. The research shows that women who own more assets tend to spend more on their children's health and education because it reveals how power relations between genders affect household resource distribution.

The research findings from Duflo (2003) about women's empowerment and household results demonstrate that policy makers must analyze household relationships to establish successful policy interventions. The research demonstrates that family members who receive intervention programs will experience positive effects which extend to all members of their household thus requiring intervention methods that account for family relationships.

The research findings about disability effects on household members are especially important for disability studies because they demonstrate how disability creates broader impacts that reach all members of a household. The understanding of these factors enables the development of effective intervention programs and support systems.

2.11 Digital Divides and Technological Exclusion

Digital technology adoption for education, employment and social interaction has established new exclusion patterns which affect rural disabled people UNESCAP (2022). The UNESCAP regional assessment of disability and technology reveals that disabled people encounter three main obstacles to technology access which stem from cost issues, accessibility problems and digital skills limitations.

Jaeger (2012) examines in detail how digital barriers create additional obstacles for people with disabilities in his research about disability and digital inclusion. His research shows that

inaccessible technology design and insufficient adaptive technology availability cause people with disabilities to experience digital opportunity exclusion.

The research of Goggin and Newell (2003) created the essential framework which shows how technology accessibility functions as a core disability rights matter. The study shows that digital exclusion maintains and worsens existing inequalities which proves why technology access must be achieved to include people with disabilities.

2.12 Climate Vulnerability and Disaster Risk

In rural areas, where individuals with disabilities already confront obstacles relating to infrastructure and services, climate change has a disproportionately negative impact. Therefore, when analyzing disadvantages gaps between rural and urban areas, it is crucial to comprehend environmental vulnerabilities.The research by Stein (2023) and his team reveals that people with disabilities experience higher danger from climate-related disasters because warning systems, evacuation plans and recovery programs remain inaccessible to them.

Ahmad et al. (2019) research conducted by Pakistan demonstrates through specific data how disabled people in rural areas become more susceptible to climate-related dangers. The researchers demonstrate that rural areas with disabled people do not have sufficient disaster preparedness, response infrastructure and support systems.

This study demonstrates that climate vulnerability stands as a vital factor of disability disadvantage which needs to be included in complete systems for disability assessment and rural disadvantage measurement. Specialized policy solutions need to handle the special problems which develop when disability meets rural residence and climate change impacts.

2.13 Pakistan-Specific Evidence and Emerging Insights

The recent changes in Pakistan’s disability data system have produced better information to study how disabilities affect people throughout the country. The research by Hameed (2023) and colleagues presents updated prevalence data and spatial distribution patterns of disability which surpasses previous studies.

The Disability Data Initiative’s (2024) comprehensive analysis of disability data across multiple countries includes detailed examination of Pakistan’s data quality and coverage. The research evaluates Pakistan’s disability data systems through both positive and negative assessments which lead to recommendations for system enhancement.

2.14 Policy Implementation and Service Gaps

The British Council (2021) and Pakistan Bureau of Statistics (2021) conducted research which delivers essential information about the difficulties Pakistan faces when executing its disability policies and programs. The British Council evaluates policy implementation through its analysis which reveals major discrepancies between official policy goals and the actual delivery of services especially in rural regions.

The Pakistan Bureau of Statistics conducted the PSLM 2019-20 survey as a significant development in disability data collection through Washington Group questions and increased sample sizes which produced dependable district-level statistics. It delivers the most extesnive disability statistics for Pakistan which serve as main dataset for the current research on disability disadvantage studies.

2.15 Mental Health and Stigma

Research conducted by Nasir & Khan (2023) provides important insights about disability stigma and mental health effects on mental health through psychosocial factors in Pakistan. The research shows how discrimination prevents PWDs from getting services, participating full in the society and working, also leading to mental health problems.

The stigma research reveals that social attitudes and cultural factors play a crucial role in determining the experiences of PWDs in Pakistan. The research demonstrates that successful inclusion requires programs which tackle both physical obstacles and cultural prejudices.

2.16 Educational Exclusion and Participation

The PSLM 2019-20 data shows through its analysis that children with disabilities face significant barriers to education based on the Educational Exclusion of Children with Special Needs report from PIDE. Research shows that disabled children face lower enrollment rates in school, higher dropout rates and lower completion rates than students without disabilities.

The disability parity index shows that disabled children have a 33% lower probability of attending school throughout their lives and disabled girls in rural areas encounter the most substantial educational obstacles. The research demonstrates that disabled children need immediate educational programs which handle their various obstacles.

2.17 Synthesis: Identifying Gaps and Research Needs

I. Spatial Analysis and Geographic Targeting

The current understanding of worldwide disability distribution has not solved the essential problem of detailed disability disadvantage mapping within national territories especially in Low and Middle Income Countries such as Pakistan. Research shows urban-rural differences in the general population but most studies lack the specific geographic information needed to develop targeted policy solutions.

The lack of household level analysis of disability disadvantage makes it impossible for policymakers to identify particular areas that require intervention so they can develop focused solutions. The analysis of disability data shows its most critical deficiency when researchers study how disability affects women and elderly people throughout various geographic locations.

II. Multidimensional Measurement Applications

The field of multidimensional poverty measurement has made substantial progress yet it lacks sufficient application for disability-focused assessments. Difficulties faced by the PWDs are difficult to be measured by the current multidimensional poverty indices. It is vital to develop disability specific indicators that will include accessibility, assistive technology access, stigma and extra costs requires multidimensional measurement approaches in the evaluations. The implementation of these measures would result in better wellbeing assessments for disabled groups which would result in more effective policy interventions.

III. Intersectionality and Complex Disadvantages

Quantitative research about disability continues to face obstacles when implementing intersectionality theory because researchers struggle to measure different types of disadvantage. Research studies mostly focus on disability as a standalone factor while studying its basic connections with one or two additional variables.

Research needs to study how disability affects people through advanced statistical methods which reveal how different factors like gender, age and rural status interact to produce combined negative effects.

IV. Policy Translation and Implementation

Research into disability disadvantage has generated numerous findings yet these findings do not lead to actual policy transformations. Most of the current research contains descriptive analysis which fail to establish direct policy implementation methods.

2.18 Addressing these Deficiencies through Methodological Innovation

I. Spatial Precision and Geographic Targeting

The research fills the spatial analysis gap through its examination of disability disadvantage at both province and district levels based on PSLM 2019-20 data. The research identifies areas with the most significant challenges for disabled people through the combination of Washington Group Short Set questions and detailed geographic information.

The spatial analysis tool helps researchers find areas with high disability disadvantage so policymakers can allocate resources to these particular locations. The current research uses more detailed geographic information than previous studies which studied disability disadvantage through national and regional perspectives. The research adopts an intersectional framework to enhance present measurement systems while discovering new insights about disability connections with various forms of disadvantage in Pakistan.

II. Multidimensional Measurement Innovation

The research creates a SoL index which combines elements from the capability approach and social model of disability for specific contexts. The index assesses well-being through five important domains which includes, health, education, living standards, social participation and accessibility to provide a complete disadvantage measurement that goes past mainstream

monetary indicators. The SoL index includes indicator that relate with disability and which measure levels of service accessibility and environmental obstacles to understand the actual hurdles that disabled household members encounter. The new method enables researchers to study disability through established multidimensional poverty frameworks which account for disability-specific challenges.

III. Intersectional Analysis Framework

In addition, the research applies advanced intersectional methods to examine how disability disadvantages vary by gender, age, and geographic location (rural versus urban), along with other social characteristics. The method uses regression analysis together with spatial mapping to identify which population groups experience exclusion risks and their specific locations. The research shows that various forms of discrimination create combined effects which become greater than their separate impacts. Research shows that disability disadvantage leads to particular exclusion patterns which need dedicated policy solutions to resolve them.

IV. Contemporary Integration

The research expands its framework through two new assessment components which measure accessibility, vulnerability and digital access as part of its comprehensive measurement analysis. The system understands that modern forms of disadvantage stem from established social-economic obstacles and new challenges which technology generates and environmental threats introduce. The study offers practical policy development strategies for adaptable solutions to current and future needs, as well as fresh insights that make it possible to forecast future disability disadvantage trends.

V. Policy Translation and Actionable Evidence

The formulation of specific policy recommendations that establish clear routes from evidence to execution is made possible by the research's data. The research uses intersectionality and multidimensional evaluation techniques to identify communities that require immediate attention. In addition to improving infrastructure access, service delivery, and monitoring systems, the policy recommendations reinforce social protection mechanisms. The suggested solutions take advantage of the institutional frameworks and resources already in place in Pakistan to make execution achievable.

2.19 Conclusion

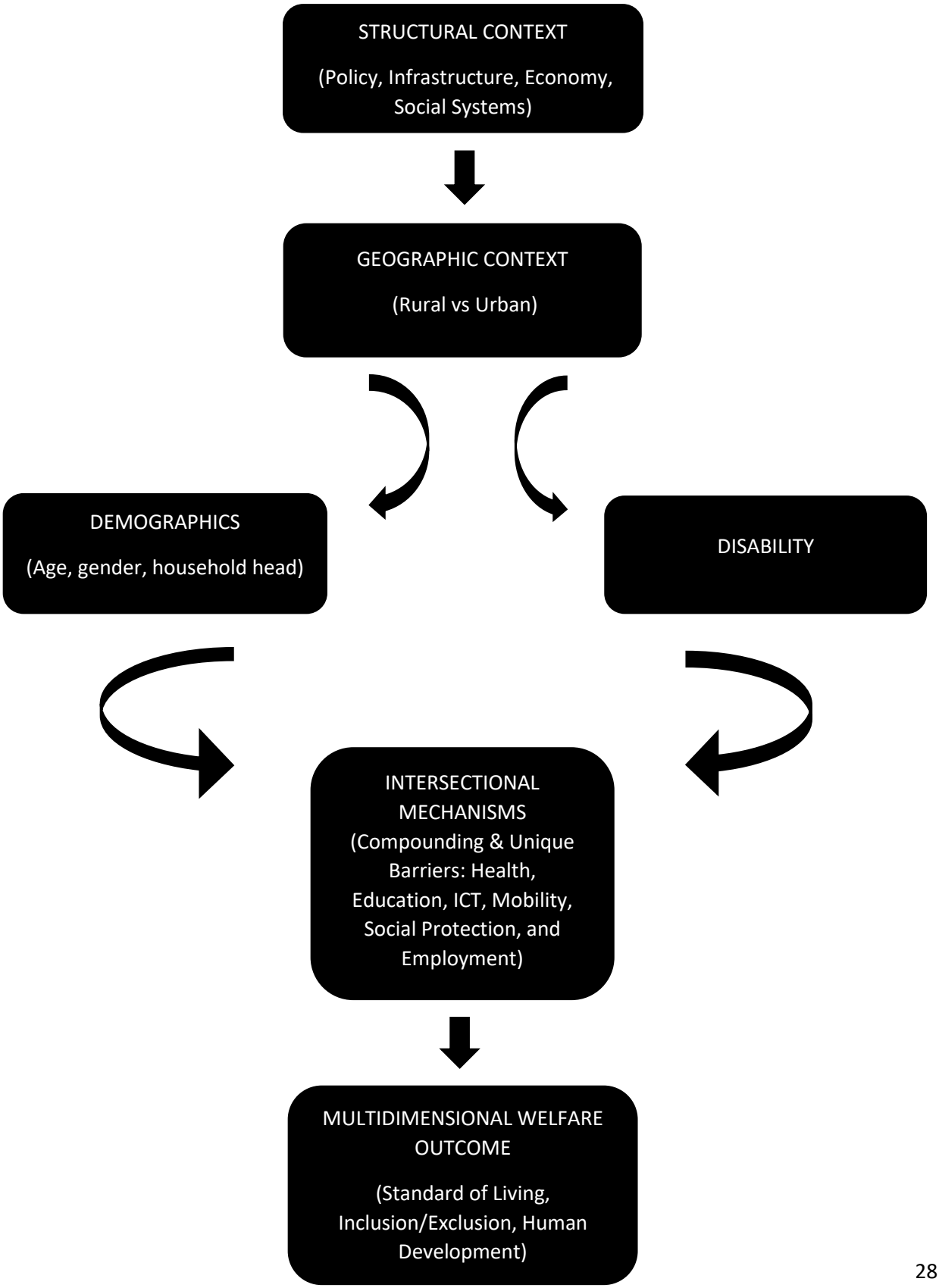
From medical-focused research techniques to its current focus on examining disability from numerous dimensions and intersectional perspectives, the study of disability has changed over time. The study advances this subject by showing how disability is a complicated problem that interacts with other types of disadvantage, such as poverty, living in a rural area, and gender discrimination. According to the research, single-factor models are ineffective in capturing disability disadvantage because they need sophisticated analytical techniques to handle its intricate features. The study offers a comprehensive framework for policy that aids in developing evidence-based strategies to combat social exclusion and advance inclusive development.

The present disability research rely on the social model, capability approach and intersectionality theory however multidimensional poverty measurement methodologies provide vital instruments for undertaking thorough disadvantage evaluations. The frameworks require further development to achieve their full potential because researchers have not managed to create detailed spatial models through these frameworks to generate particular policy solutions.

The research fills existing knowledge gaps through its development of a complete analytical system which combines spatial evaluation with multiple measurement approaches and intersectional perspectives to study disability disadvantage in Pakistan. The study provides two main contributions by advancing disability disadvantage knowledge and creating evidence-based inclusive development policies through modern research methods.

The significance of this contribution extends beyond the Pakistan context, as the analytical framework and methodological approaches developed in this study can be adapted and applied in other LMIC contexts facing similar challenges in understanding and addressing disability disadvantage. The research adds new knowledge about disability in Pakistan to the existing body of research while expanding the worldwide understanding of disability and its relationship to poverty and inclusive development.

2.20 Conceptual Framework for the study



- The framework establishes that structural context consisting of macro-level policies, infrastructure and social systems create the base which determines all subsequent experiences of disadvantage or inclusion. The research investigates rural-urban differences in Pakistan through geographical analysis.
- The multiple demographic elements of age, gender, household structure and disability type form an intricate system which produces different levels of advantage and vulnerability through their combined interactions.
- The intersectional mechanism layer serves as the core element of the model because it contains both compounding and unique barriers which affect households throughout their welfare domains including health, education, ICT access, employment, mobility and social protection.
- This chain of influence culminates in the multidimensional welfare outcome (constructed as the Standard of Living index and other inclusion/exclusion indicators) that serves as my thesis's dependent variable.
- The framework includes arrows which demonstrate both immediate and secondary effects to show that actual inequality develops through the combination of environmental context, demographic position and disability status rather than through any individual element.

Chapter Three: Methodology

3.1 Introductory Roadmap

The strategy of this chapter outlines the methods used to answer the three research questions of the study. The chapter contains details about research design, data collection methods, variable development and empirical model implementation. The chapter explains the process of creating the multidimensional standard of living index and demonstrates its application with PSLM 2019-20 data while presenting statistical methods for analysis.

3.2 Post-Positivist Paradigm

The post-positivist paradigm acknowledges the existence of an autonomous social reality while acknowledging that theoretical frameworks, data limitations, and methodological choices influence all measurement, analysis, and interpretation techniques. Post-positivism differs from absolute positivism because it acknowledges that complete objectivity is impossible yet requires researchers to investigate their results through self-assessment of their personal biases and conceptual framework effects on their observations. The research aims to hold the scientific rigor through its post-positivist method which acknowledges the constraints of social research and how researchers' perspectives affect their results. The approach enables researchers to test hypotheses and conduct logical evaluations, but they must refrain from drawing definitive cause-and-effect inferences from data gathered at a single point in time. Strong evidence combined with analytical evaluation gives the research approach legitimacy and policy significance.

This addresses the RQ1, RQ2, and RQ3 by providing a conceptual foundation for developing the Standard of Living index and for rigorously estimating the disability penalty across rural and urban Pakistan.

3.3 Deductive, Pragmatic Orientation

This study's research design is deductive, beginning with broad research questions and theoretical hypotheses that are verified using PSLM survey data. Instead of focusing on theoretical concepts, a pragmatic approach encourages academics to focus on practical knowledge. In order to create findings that advance scholarly understanding and aid in the creation of disability inclusion policies in Pakistan, the research technique transforms theoretical frameworks into practical measures that produce data-driven solutions.

In order to address RQ1, RQ2, and RQ3, the study developed the Standard of Living index structure, developed an efficient mechanism for calculating disability penalties, and allowed researchers to compare rural and urban locations.

3.4 Theoretical Anchors

Social Model of Disability

The social model defines disability as something which emerges from social systems rather than physical or mental barriers. The text demonstrates that inaccessible environments along with discriminatory attitudes and exclusionary practices create disadvantageous situations. The model shifts focus away from medical problems and individual weaknesses to demonstrate how social barriers stop people from becoming part of society.

The Social Model of Disability which Michael Oliver developed serves this research because it focuses on how society creates obstacles that prevent people with disabilities from fully participating in society. The model shows how people with disabilities create their disabilities through social barriers which exist in their environment to explain why rural areas have lower standard of living than urban areas.

The Pakistani government defines disability through policy documents and survey criteria which apply medical and functional assessment methods to identify physical and sensory and mental impairments that differ from typical norms. The Disabled Persons (Employment and Rehabilitation) Ordinance (1981) and the National Policy for Persons with Disabilities (2002) establish official policies which treat disability as an individual problem rather than recognizing how social systems generate barriers for people with disabilities. The narrow definition fails to produce sufficient policy solutions because it does not recognize all social and economic difficulties which rural residents with disabilities encounter.

The Social Model of Disability serves as the theoretical framework for this research because it demonstrates the requirement to eliminate physical and organizational obstacles while supporting policies which promote inclusion. The study offers greater explanatory power, allowing researchers to use their findings to improve service delivery for Pakistan's crippled population and develop efficient social protection systems.

The Capability Approach

Sen’s capability approach investigates well-being in terms of the real freedoms and opportunities individuals hold in vital areas of life. The concept of social capital extends past financial resources to encompass various aspects including health outcomes, education systems, housing conditions and social involvement. The capability approach serves as the basis to develop a full living standards index which evaluates disability disadvantage through multiple human development domains.

Intersectionality Theory

The theory of intersectionality demonstrates how various types of disadvantage including gender, class, status, rural living and disability create multiple layers of exclusion that accumulate on each other. The model combines these factors into a single framework which demonstrates their combined impact on social results. The research uses intersectionality to study how disability disadvantage affects different social groups and to identify exclusion patterns which single-factor analysis cannot detect.

The selection of analysis outcomes and definition of disability depends on theoretical models and definitional critiques. The research uses policy-based identification together with survey-driven

identification to develop an entire system for evaluating disadvantage and inclusion. The following chapter explains how these frameworks guide our research design and measurement selection and empirical modeling to establish a solid framework for studying rural-urban living standards among disabled people in Pakistan.

3.5 Research Design and Strategy

Cross-Sectional Survey Design

- The method proves to be cost-efficient since it eliminates the need for conducting multiple surveys at different times.
- The method provides a complete view of the situation because it assesses various indicators (income, education, health, and housing) at the same time for comparison purposes.
- The method allows scientists to directly assess the existing differences in living standards and disability prevalence between rural and urban regions.
- It serves as a solid basis for generating hypotheses for future, more detailed causal or longitudinal research.

Quantitative Approach

The research methodology depends on statistical methods to analyze numerical data which generates objective results that researchers can reproduce and apply to different contexts.

- The method enables researchers to conduct exact measurements and perform statistical tests.
- It supports hypothesis-testing about inequalities and determinants of living standards.
- The research draws its conclusions from a large dataset of nationally representative information which enables the results to guide policy creation.

Complete numerical data analysis increases the reliability of research findings and enables policymakers to develop focused intervention plans for disability support.

The research design of this study uses quantitative methods because it needs to evaluate large national datasets. At the same time, research aims at studying how disability affects people's living standards based on their demographic characteristics. Researchers use quantitative analysis to create intricate indexes and identify patterns through statistical methods which enable them to measure effect sizes. The PSLM 2019-20 microdata enables researchers to conduct studies that generate results which can be applied to the entire Pakistani population thus enhancing both research reliability and policy effectiveness. The research requires quantitative methods because it needs to create an index and measure disability penalties and evaluate results between different areas and population segments. The research design implements Creswell (2014) and Bryman (2016) recommendations through an objective method to evaluate hypotheses effectively.

This covers RQs 1–3 by allowing for the measurement, comparison, and statistical modeling of standard of living and disability consequences in rural and urban Pakistan.

3.6 Data Source: National Survey Data: PSLM 2019–20

The data originates from the National Survey Data (PSLM 2019-20). The Pakistan Social and Living Standards Measurement (PSLM) Survey 2019-20 serves as the country's principal government-administered household survey for monitoring a broad range of socioeconomic indicators. The PSLM survey stands out because of its strict research methods and extensive reach across many areas of Pakistan which enables researchers to monitor development at both national and provincial levels. The research depends on PSLM data because it provides a solid empirical basis.

1. The survey is based on a nationally representative sample of 176,790 households, covering all provinces of Pakistan.
2. The survey gathers data across various aspects which include income levels and educational achievements and health conditions and living conditions and food access and disability status in a single dataset.
3. The research follows established national standards and international benchmarks for poverty measurement and living standards assessment and disability evaluation.
4. The extensive nature of the dataset allows researchers to produce reliable results which enable them to create solutions that work for all regions of Pakistan.

The dependable and extensive data from PSLM 2019-20 allows researchers to develop a Standard of Living (SoL) Index with multiple dimensions which supports detailed assessments of equity and disability.

3.7 Household-Level Analysis and Key Variables

The research bases its analysis on individual households which function as the main units for all statistical work.

Key variable operationalization includes:

1. Age and gender of the household head: These are utilized as proxies for both household life-cycle stage and gendered differences in access to resources and opportunities.
2. Disability status: Employed according to the Washington Group Short Set (WGSS).A household is classified as "disabled" if at least one member reports "a lot of difficulty" or "cannot do at all" in any functional domain.

3.8 Sample Selection

Researchers use sample selection as their basic research method to obtain reliable data that produces unbiased research results. Therefore, analysis includes all households that have complete data about disability status and the main Standard of Living (SoL) indicators which include education, income, health, housing, food security and asset ownership. The study excluded households that had missing core variables because systematic biases from incomplete data handling would compromise the study results.

3.9 Data Collection Integrity

The PSLM 2019-20 survey employed trained enumerators who finished a complete training program before starting their work of conducting personal interviews. The method continues to be vital for regions with limited literacy because people would not be able to complete self-administered questionnaires accurately. The data collection process used a tiered monitoring system that included supervisor oversight and both spot checks and systematic data cleaning procedures to protect reliability and validity. The implemented measures functioned as a system to enhance data internal consistency which enabled reliable statistical analysis and policy development.

3.10 Use of Survey Instruments

The concise set of questions, response options, and measurement standards that allow for appropriate data collection are defined by survey instruments. The study relies on a number of globally recognized assessment instruments.

1. The Washington Group Short Set (WGSS) defines disability through functional limitations which differ from medical conditions. The WGSS enables cross-country comparison and produces results that accurately represent actual disability experiences in the world.
2. The Food Insecurity Experience Scale (FIES) enables international food access and adequacy measurement which allows for cross-country and subnational area data comparison for SDG monitoring purposes.
   The functional disability module items used in this study were adapted from the Washington Group Short Set on Functioning (WG-SS) and the Food Insecurity Experience Scale (FIES), with minor wording changes made to ensure clarity and context relevance for the Pakistani setting.
3. The SoL Index Modules received their inputs from standardized PSLM modules which measured education levels, health outcomes, ICT use, asset ownership and housing quality. The multidimensional Standard of Living (SoL) index was constructed specifically for this research by combining relevant PSLM variables using principal component analysis.

Collectively, the tools improve the efficacy of policy suggestions while reducing data collection errors and achieving cross-national and regional measurement uniformity. Results are far more credible in academic and practical policy contexts when standardized instruments are used.

Rural-Urban Classification

Each household must be classified as rural or urban using official Government of Pakistan definitions incorporated in the PSLM to ensure consistency and policy relevance. By using this strategy, the system can display houses according to administrative areas that are important for policy formation, eliminating random or contradictory classification systems imposed by researchers. The classification method can be directly applied to government planning and programming through the use of official criteria, allowing research findings to support national

priorities. The study of disability needs both descriptive and inferential approaches to show rural-urban differences because these distinctions help identify which areas require targeted interventions.

3.11 Variable Selection and Data Preparation

3.11.1 Theoretical Relevance

The selected variables through their essential position in established international and national frameworks measure well-being including multidimensional poverty and human development indices. The study uses these quality of life dimensions to create a complete understanding of living standards through metrics that surpass income and consumption measurements.

3.11.2 Data Availability and Quality

The analysis included only variables from the Pakistan Social and Living Standards Measurement (PSLM) 2019-20 dataset which had complete data and low missing value rates. The research adopted this method to achieve better result representation while avoiding data gaps that could affect analysis outcomes.

3.11.3 Policy Relevance

The selected indicators matched essential policy areas of Pakistan which include education, healthcare, telecommunications (ICT), safe housing, clean water and sanitation access. The research outcomes will help public authorities create effective policy solutions which targets essential human development areas in Pakistan.

3.12 Domains and Indicators for SoL Assessment

The SoL assessment uses seven main domains which contain related variables to show different aspects of household welfare.

1. The education domain assesses highest educational level achievements.
2. The Washington Group Short Set methodology enables the measurement of functional limitations which include vision, hearing, mobility, memory and self-care abilities.
3. ICT Usage tracks the ownership and utilization of mobile phones and computers together with internet connection capabilities.
4. The assessment of Housing Quality examines three aspects of household facilities including building structure, material quality, water, heating and lighting systems availability.
5. The Basic Services and Utilities domain includes access to cooking fuel, safe drinking water, sanitation facilities, waste management and drainage systems.
6. The assessment of Distance to Facilities examines how far residents need to travel to reach medical facilities and other vital services through different transportation methods and time measurements.

7. The Food Insecurity Experience Scale (FIES) assesses the degree and occurrence of food shortages that households experience.

The financial information of the household was deliberately left out to focus on multiple aspects of living standards between the two regions which extend past monetary values.

3.13 Domain-specific renamed variables

Transparency, clarity, and analytical rigor are strengthened by organizing recoded variables by their relevant domain:

- ICT Access: ict_device_sol, mobile_sol, internet_sol, internet_use_sol, computer_sol
- Housing Quality: hh_structure_sol, floor_mat_sol, roof_mat_sol, wall_mat_sol, water_cooking_sol
- Utilities and Services: cookingfuel_sol, water_source_sol, water_distance_sol, toilet_sol, drainage_sol, waste_disposal_sol
- Health Access: health_usage_sol, health_distance_sol, health_transport_sol
- Food Security: c08 (FIES-based shortage measure)
- Education: school_distance highest_grade_sol

3.14 Rationale for excluding income

The exclusion of SoL index income enables researchers to determine if disability-related disadvantages result from lower earnings (economic channel) or from ongoing structural and social and environmental barriers (non-economic channel). The disability penalty continues to exist at a significant level after accounting for income differences which demonstrates the necessity for disability support programs to move past cash transfer systems like BISP to create accessible inclusive environments with essential services.

3.15 Recoding of selected variables

The analysis requires basic indicators from PSLM data so I chose these indicators and transformed the necessary variables. The recoding was carried out in accordance with the standard of living framework used for Pakistan, whereby households were ranked on an ordinal scale ranging from 1 to 5, with 1 representing the poorest living conditions and 5 representing the most favorable conditions. The method allowed researchers to establish a systematic household organization system which enhanced their ability to compare data effectively. The methodological approach develops uniform assessment criteria for households which enables researchers to measure their current living conditions and assess modern-day inequality.

Guiding Principles

a) **Positive characteristics** (e.g., durable housing, higher literacy, improved water sources) were coded so that higher values represented improvements.

b) **Negative characteristics** (e.g., disability severity, greater distance to facilities, poor housing materials) were reverse-coded to align with the scale.

Examples of Recoding

- Distance to health facility: *0–0.5 km = 5*; *>5 km = 1*.
- Roofing material: *Concrete = 5*; *Thatch/mud = 1*.
- Disability severity: *No difficulty = 5*; *cannot perform at all = 1*.

This harmonization ensured that all indicators became conceptually comparable, expressing household well-being on a uniform metric.

3.16 Treatment of Missing Data

The PSLM dataset showed low missing data because participants skipped questions based on the survey design and some items were not relevant to their situation. The PSLM dataset required minimal imputation because its structural design and completeness level did not affect the analysis results. The implementation of predictive mean matching and multiple imputation methods for advanced imputation produced errors and unstable results because these methods generated methodological instabilities that resulted in non-converging solutions. The data was mainly influenced by the extensive sample size and multiple categorical variables and minimal relationships between different domains. The imputation process in these situations created artificial correlations which damaged the subsequent analysis results particularly when principal component analysis (PCA) was used.

3.17 Outlier Detection and Trimming

The study removed all income values which fell outside the 1st percentile and 99th percentile range from the dataset before normalization. The removal of these extreme cases were made because they suspected data entry mistakes or unusual situations which did not represent typical household conditions. Only after this outlier treatment were normalization and further index computation was carried out.

3.18 The Need for Normalization

The process of creating an index from various domains faces difficulties related to scale comparison because specific indicators have extreme distribution patterns which could control the index value unless proper adjustments are made. The study used min–max normalization to treat all continuous and ordinal variables including income so each domain would have equal influence on the analysis.

The normalization formula is:

$$X_{norm} = X - X_{min} / X_{max} - X_{min}$$

where Xmin and Xmax indicate the lowest and highest observed incomes, respectively. This rescaling enabled equitable weighting for all index components, eliminating dominance by skewed variables.

3.19 Principal Component Analysis and Index Construction

The Standard of Living (SoL) Index was developed through Principal Component Analysis (PCA) after the dataset received complete case treatment and variable normalization and trimming. PCA was used to analyze the harmonized indicators and the first principal component was selected as the continuous SoL Index because it explained the most variance among the selected domains. The index served as the primary outcome measure for all subsequent regression model analyses. The method created a statistically sound evaluation of residential settings which developed into a dependable tool for policy-based studies.

The systematic approach to missing data management combined with variable normalization and outlier detection and index construction methods resulted in a reliable dataset which allowed regression analysis to study the connection between disability status and other variables and household living standards.

Regression Analysis

3.20.1 Dependent Variable

The dependent variable is the PCA-derived SoL Index (PC1) that summarizes all the above mentioned domains. It is a continuous index. This index serves as the primary outcome of interest in all comparative and regression analyses.

3.20.2 Independent Variable of Interest

Disability status, as determined by the PSLM disability module in accordance with the Washington Group Short Set, is the primary explanatory variable.

a) **Disabled household (1)**: One member atleast reports “a lot of difficulty” or “cannot do at all” in any functional domain.
b) **Non-disabled household (0)**: No members report severe difficulty in any domain.

3.20.3 Control Variables

Regression models account for the following to isolate the effect of disability:

1. **Urban-Rural Location**: Dummy (urban =1, rural = 0), capturing infrastructure and service access disparities.
2. **Age of Household Head**: Continuous (in years), accounting for life-cycle effects.
3. **Gender of Household Head**: Dummy (male =0, female =1), addressing gender-based disparities in access and opportunities.

These controls minimize omitted-variable bias and strengthen the causal interpretation of the "disability penalty" in household living standards.

3.21 Model Specification and Functional Form

The empirical analysis is based on a linear regression framework. This choice is guided by the interpretability, transparency, and suitability of OLS for continuous dependent variables such as the Standard of Living (SoL) Index. The functional form of the model is specified as follows:

$$SoL_i = \beta_0 + \beta_{1,Disability_i} + \beta_{2,Region_i} + \beta_{3,Age_i} + \beta_{4,Gender_i} + \varepsilon_i$$

Where:

- SoL*i* = Standard of Living Index for household *i* (dependent variable).
- Disability*i* = Disability status indicator (1 = household includes a disabled member; 0 = otherwise).
- Region*i* = Urban–rural dummy (1 = urban, 0 = rural).
- Age*i* = Age of the household head (continuous, in years).
- Gender*i* = Gender of the household head (0=Male, 1 = female).
- ϵi = Error term capturing unobservable or omitted factors affecting living standards.

Interpretation of Coefficients

• β1: Disability Effect ("Disability Penalty")

This is the primary coefficient of interest. It measures the difference in living standards between households with and without disabled members, controlling for all other factors.

• If β1<0β1<0: Disability is associated with a penalty in living standards.

• If β1>0β1>0: Disability corresponds to a relative advantage, though this outcome is theoretically less plausible given prevailing socio-economic constraints in Pakistan.

• β2: Urban–Rural Disparities

Captures systematic differences between urban and rural households after accounting for other controls. It reflects access gaps in infrastructure, employment opportunities, and public services.

• β3: Age of Household Head

Reflects life-cycle influences. While older heads may accumulate assets over time, they often face declining labor market participation and higher healthcare expenditures.

• β4: Gender of Household Head

Estimates the effect of gender on household living standards, highlighting structural disadvantages faced by female-headed households in Pakistan, particularly in terms of labor market participation, access to resources, and social protection.

3.22 Methodological Rigor and Validity

The research maintains internal validity by using the internationally validated Washington Group Short Set for disability identification and Standard of Living index based on established international methodologies and consistent variable definitions across all analytical groups and large sample size ensuring adequate statistical power, multiple regression controls for confounding variables and sensitivity analysis to test robustness of findings.

The research maintains external validity through nationally representative sampling which allows population-level generalization to Pakistan and stratified sampling which ensures geographic and demographic representation and international measurement standards that enable comparative analysis. The data reliability is ensured through PSLM being conducted by the official statistical agency with established quality protocols and standardized data collection procedures across all survey locations and an established survey instrument with proven reliability in the Pakistani context.

Chapter Four: Results and Analysis

4.1 Introduction

The fourth chapter of the study presents findings about Pakistani household living conditions between urban and rural areas while focusing on the unique difficulties disabled people encounter. This chapter follows a three-part methodology.

The first part of the analysis presents descriptive statistics about key indicators through group averages which separate disabled and non-disabled households while distinguishing between rural and urban areas. The descriptive statistics reveal the unmet needs in basic domains that include food security, education, housing, sanitation, healthcare access, water and digital connectivity. The thematic analysis reveals that deprivation exists as multiple connected factors which impact the disabled families more in rural areas.

The second part of the chapter reveals results of the multivariate regression models to determine if the descriptive gaps continue to exist after accounting for individual and household characteristics including age, gender and regional location. The research uses Linear Regression models to establish the Standard of Living (SoL) index as the dependent variable while disability status is used as the independent, and regional and socio-demographic factors serve as controls in the models.

The presence of disability increases deprivation or lowers well-being more than what could be explained by the sum of other factors alone, disability acts as a distinct, powerful source of disadvantage for households, independent of the effects of other compositional characteristics. Therefore, the chapter in the third part, uses the descriptive statistics and regression analysis to create a full understanding of disability in relation to geographic location. The research provides numerical evidence about the degree of disability penalty in standard of living while showing how disability affects the existing rural-urban disparities to create greater deprivation. The research design employs multiple methodological approaches to achieve both scientific rigor and practical application of its findings.

4.2 Descriptive Analysis: Manifestations of Disadvantage

The following section presents a descriptive statistical analysis of the impact of disability across rural and urban areas in Pakistan. The evaluation assesses how disability affects household welfare, service access to education and healthcare and digital connectivity. The research reveals major distinctions between households with disabilities and those without disabilities because statistical data indicates that rural areas contain higher rates of disability. The research results demonstrate separate patterns regarding benefit access, service quality and social inclusion between urban and rural areas.

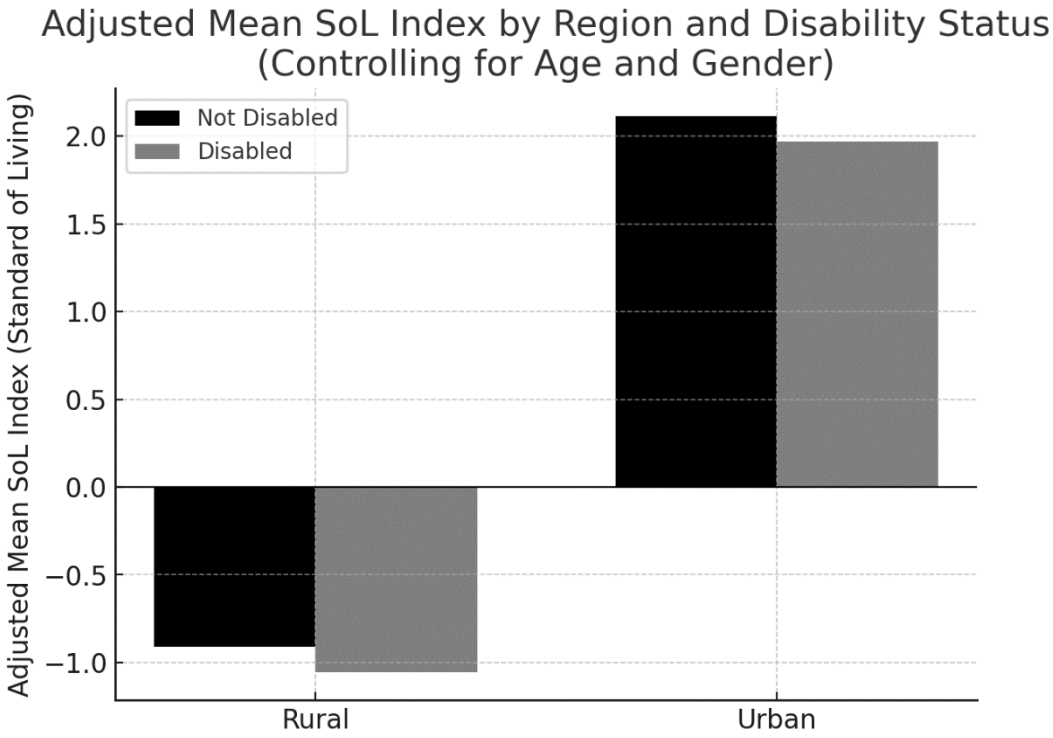


Figure 1: Living Standard Distribution

4.3 Overview

The descriptive clustered bar chart clearly illustrates the underlying structure of living standards inequality between rural and urban areas in Pakistan. The Standard of Living (SoL) scores for disabled and non-disabled rural households show negative values which indicates their welfare levels are lower than the national average. The mean value in standardized indices becomes negative when a group scores lower than the national average which indicates their relative deprivation and lower standard of living compared to the national reference point.

The existing disadvantage in this situation leads to disabled rural households receiving a small extra disadvantage which results in a score of -1.056 compared to -0.908 for non-disabled households. The disabled and non-disabled groups in urban areas show different patterns than their rural counterparts because their sol values exceed the national average at 2.071 and 2.146 respectively. The visual evidence shows that disability produces equal disadvantages across all areas but the rural-urban gap stands as the main factor which determines household living standards.

4.4 Disability, Rurality, and Household Well-being across Key Development Domains

The following is a domain-specific research to study how disability status together with geographic location affect major household well-being indicators. The research findings are presented through

nine categories which demonstrate the various ways different populations encounter discrimination and experience social exclusion.

Table 2: Food Security and Disability

GROUP	FOOD INSECURITY
DISABLED – RURAL	**0.183**
DISABLED – URBAN	**0.149**
NON-DISABLED – RURAL	**0.180**
NON-DISABLED – URBAN	**0.137**

Rural disabled households experience the worst food insecurity because their financial instability, medical expenses and insufficient support systems create worse food deprivation and block their access to nutritious food. The combination of disability and rural location creates the most severe food insecurity risk for rural disabled families who face the worst living conditions because of structural barriers.

Table 3: ICT and Internet Access

GROUP	INTERNET ACCESS	LAPTOP FACILITY	COMPUTER FACILITY	LANDLINE FACILITY	MOBILE FACILITY
DISABLED – RURAL	**0.082**	**0.04**	**0.05**	**0.01**	**0.89**
DISABLED – URBAN	**0.233**	**0.14**	**0.11**	**0.04**	**0.95**
NON-DISABLED– RURAL	**0.145**	**0.04**	**0.04**	**0.01**	**0.92**
NON-DISABLED– URBAN	**0.339**	**0.11**	**0.09**	**0.02**	**0.96**

The digital divide in Pakistan creates different levels of structural disadvantage that affect disabled people and rural residents most severely as disabled rural households facing the worst exclusion. The data from descriptive analysis shows that disabled households possess fewer digital devices, have restricted internet access compared to non-disabled households and these disparities reach their peak in rural areas. The combination of these challenges prevents rural disabled people from accessing digital resources because they cannot afford technology and lack proper infrastructure and digital skills which keeps them from joining the social and economic activities that urban non-disabled households can easily access.

Table 4: Education Outcomes and Access

GROUP	HIGHEST GRADE COMPLETED	SCHOOL DISTANCE
DISABLED – RURAL	**0.231**	**0.001**
DISABLED – URBAN	**0.440**	**0.001**
NON-DISABLED – RURAL	**0.299**	**0.002**
NON-DISABLED – URBAN	**0.502**	**0.003**

The research demonstrates that students with disabilities encounter major educational challenges which intensify when they reside in rural areas. The educational achievement of disabled rural families remains substantially lower than nondisabled rural families since they complete fewer years of education. The distance to school does not affect any of the groups because the real obstacles stem from discrimination, insufficient inclusive teaching practices and ineffective assistive support systems. Urban areas produce superior results but disabled families show lower performance than other households which indicates that social barriers affect them more than physical environment challenges.

Table 5: Housing Stability and Ownership

GROUP	OCCUPANCY STATUS	OWNERSHIP BY GENDER	DWELLING TYPE
DISABLED – RURAL	**0.947**	**0.525**	**0.919**
DISABLED – URBAN	**0.789**	**0.529**	**0.936**
NON-DISABLED– RURAL	**0.928**	**0.524**	**0.900**
NON-DISABLED– URBAN	**0.739**	**0.522**	**0.915**

The housing situation in Pakistan depends more on whether a person lives in a rural area or an urban area than their disability status because disabled and non-disabled families demonstrate equivalent patterns of property ownership and residential stability, yet rural residents with or without disabilities tend to own homes because they inherit land and stay in the same place for extended periods. The main difference between urban and suburban households stems from their different housing stability patterns because urban residents tend to rent their homes while suburban residents own their properties. The process of adapting homes for disability needs does not change the fundamental patterns of property ownership or stability between these two groups because the geographic location remains the dominant factor.

Table 6: Gendered Ownership Patterns

GROUP	OWNERSHIP BY GENDER
DISABLED – RURAL	**0.525**
DISABLED – URBAN	**0.529**
NON-DISABLED – RURAL	**0.524**
NON-DISABLED – URBAN	**0.522**

The patterns of gendered property ownership show no difference between people with disabilities and those without disabilities because both follow traditional patriarchal inheritance systems. The distribution of property remains unaffected by disability since women across all social groups face equal restrictions in property ownership. The majority of disabled women obtain property ownership through widowhood and specific programs instead of broad institutional changes.

Table 7: Basic Utilities

GROUP	COOKING FUEL	LIGHTING	HEATING	COOKING WATER
DISABLED – RURAL	**0.189**	**0.959**	**0.353**	**0.777**
DISABLED – URBAN	**0.607**	**0.993**	**0.525**	**0.953**
NON-DISABLED – RURAL	**0.169**	**0.951**	**0.346**	**0.742**
NON-DISABLED – URBAN	**0.586**	**0.990**	**0.512**	**0.938**

The urban families of Pakistan have better access to modern fuel sources, heating systems and safe water for cooking than rural families do because disabled people in rural areas face challenges in accessing cooking water due to mobility and infrastructure limitations. The entire population has access to lighting yet disabled people in rural areas face increased deprivation because existing service gaps become more severe in these areas which requires immediate action for inclusive infrastructure development.

Table 8: Healthcare Access and Mobility

GROUP	HEALTHCARE DISTANCE	HEALTHCARE TRANSPORT
DISABLED – RURAL	**0.286**	**0.714**
DISABLED – URBAN	**0.562**	**0.637**
NON-DISABLED – RURAL	**0.272**	**0.704**
NON-DISABLED – URBAN	**0.565**	**0.616**

Healthcare access in Pakistan depends on two main factors which are geographic distance and mobility constraints because urban residents have better access to healthcare facilities due to their

proximity but rural residents must use community-based and informal transportation to access care. The main obstacles to receiving treatment exist in disabled rural homes because their remote position together with challenging terrain and restricted mobility stop them from reaching essential medical care. The distance to a health center improves accessibility yet people with disabilities need accessible and affordable transportation to receive healthcare services which makes geographic proximity insufficient for healthcare inclusion.

Table 9: Water Access and Distance

GROUP	WATER DISTANCE	DRINKING WATER ACCESS
DISABLED – RURAL	**0.229**	**0.770**
DISABLED – URBAN	**0.294**	**0.952**
NON-DISABLED – RURAL	**0.249**	**0.740**
NON-DISABLED – URBAN	**0.286**	**0.938**

The research shows that people with disabilities and those without disabilities have the same level of access to water resources yet rural areas face more critical water problems than urban regions even though they are near water sources. The data shows minor growth in disabled household participation because of particular inclusion policies yet disabled people face major obstacles because their restricted mobility stops them from reaching nearby water resources and facilities. The present situation needs infrastructure that unites accessible design elements with service locations which have simple access.

Table 10: Sanitation and Environmental Infrastructure

GROUP	DRAINAGE	TOILET FACILITIES	WASTE DISPOSAL
DISABLED – RURAL	**0.287**	**0.549**	**0.031**
DISABLED – URBAN	**0.781**	**0.831**	**0.520**
NON-DISABLED – RURAL	**0.255**	**0.512**	**0.030**
NON-DISABLED – URBAN	**0.738**	**0.807**	**0.468**

The results of sanitation efforts show a significant gap between rural and urban areas instead of any differences based on disability status. The infrastructure of urban homes provides better support for drainage systems, toilet facilities and waste management systems. The worst conditions exist in rural disabled households because they do not have adequate drainage systems or waste management infrastructure. Planners need to develop inclusive solutions because the combined effect of insufficient sanitation facilities and elevated disease risk requires attention although the disability impact in this area is lower.

The descriptive analysis shows significant differences between households based on disability status and region but these differences might result from unobserved demographic or socio-

economic characteristics. The following section uses multivariate regression analysis to determine if observed differences continue to exist after controlling for these variables. The regression models apply systematic controls for age, gender and rural–urban location to check the stability of descriptive results and assess if disability leads to an independent decrease in household standard of living. The method enables researchers to verify that observed inequalities exist as actual structural patterns which produce statistically significant results.

4.5 Regression Results of Disability Status and Standard of Living

4.5.1 Model Specification and Variables

To assess the link between disability status and the standard of living (SoL) in Pakistan, three regression models were estimated using a PCA-based SoL index as the outcome. The main factor that predicted the outcome was having a disabled person living in the household while age and gender and urban or rural location served as control variables to handle demographic and geographic influences. The three models differ in their data sources with Model 1 using national data and Model 2 and Model 3 using urban and rural household data to enable direct assessment of the "disability penalty" in different locations.

4.5.2 National Sample

Table 11: Model 1

Variable	Coefficient	Std. Error	t	p-value	95% CI
Disability	–0.1467***	0.0138	–10.62	0.000	[–0.1737, –0.1196]
Urban Region	3.0218***	0.0107	282.05	0.000	[3.0008, 3.0428]
Age (years)	0.0149***	0.0004	36.69	0.000	[0.0141, 0.0157]
Gender	0.3512***	0.0180	19.47	0.000	[0.3159, 0.3866]
Constant	–1.9482***	0.0267	–73.08	0.000	[–2.0004, –1.8959]

Key Results:

a) Households with a disabled member have a significantly lower standard of living (–0.147, $p < 0.001$), even after accounting for other variables.

b) Urban residence is the strongest predictor of higher SoL, with a coefficient exceeding +3.0.

c) SoL increases slightly but steadily with the age of the household head.

d) Nationally, female-headed households have a modest but statistically significant advantage in living standards over male-headed households.

e) The overall baseline (constant) is negative, reflecting below-average living standards net of predictors.

4.5.3 Urban Sample

Table 12: Model 2

Variable	Coefficient	Std. Error	t	p-value	95% CI
Disability	–0.140***	0.0244	–5.72	0.000	[–0.1874, –0.0918]
Age (years)	0.0158***	0.0008	20.63	0.000	[0.0143, 0.0173]
Gender	–0.063*	0.0357	–1.76	0.079	[–0.1327, 0.0073]
Constant	1.473***	0.0493	29.91	0.000	[1.3765, 1.5696]

Key Results:

a) The disability penalty persists in urban households (–0.140, $p < 0.001$), meaning urban amenities and services do not erase this disadvantage.

b) The age effect is similar to the national model, suggesting cumulative resource advantages for older urban household heads.

c) In contrast to the national pattern, urban female-headed households show a slight, marginally significant disadvantage in SoL.

d) The urban constant is positive, reflecting generally higher living standards in urban Pakistan.

4.5.4 Rural Sample

Table 13: Model 3

Variable	Coefficient	Std. Error	t	p-value	95% CI
Disability	–0.146***	0.0168	–8.69	0.000	[–0.1785, –0.1128]
Age (years)	0.0148***	0.0005	31.00	0.000	[0.0139, 0.0158]
Gender	0.497***	0.0209	23.81	0.000	[0.4565, 0.5384]
Constant	–2.105***	0.0313	–67.30	0.000	[–2.1659, –2.0433]

Key Results:

a) Rural households with a disabled member face a penalty to SoL effectively identical in magnitude to the national average (–0.146, $p < 0.001$).

b) Older age correlates with improved living standards, indicating asset accumulation in rural environments.

c) Female-headed rural households report much higher SoL, suggesting advantages in resource management or social support.

d) The negative constant in rural Pakistan highlights the deep-rooted disadvantage of these settings.

4.5.5 Comparative Table

Table 14: Cross-Model Results

Variable	National Sample (Coef.)	Urban Sample (Coef.)	Rural Sample (Coef.)
Disability	–0.147***	–0.140***	–0.146***
Age (years)	0.015***	0.016***	0.015***
Gender	0.351***	–0.063*	0.497***
Constant	–1.948***	1.473***	–2.105***

All coefficients significant at p < 0.001 unless otherwise indicate

4.6 The Evidence Interpretation

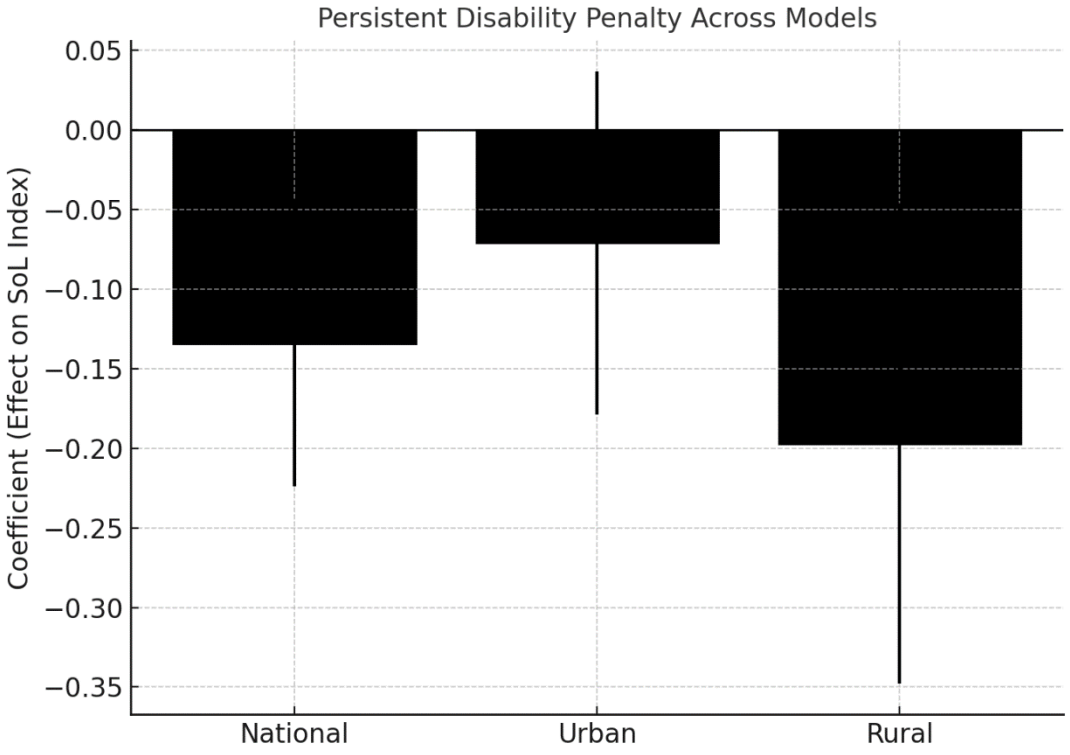


Figure 2: Disability across three models

4.6.1 The Universal Disability Penalty: National-Level Regression Evidence

The national regression model presented in Table 1 demonstrates that the presence of a household member with a disability is significantly associated with lower living standards across Pakistan. The disability coefficient of −0.147 ($p < 0.001$) shows that disabled household members lead to a 15% standard deviation reduction in well-being compared to non-disabled households according to previous studies on the disability penalty (Mitra et al. 2013; Banks & Polack, 2014).The ongoing penalty against disabled people results from multiple elements which include higher healthcare expenses, assistive equipment costs, home modification expenses, lost employment possibilities for disabled people, their caregivers and their experience of discrimination, insufficient infrastructure and weak social protection systems (Mont, 2007; Braithwaite & Mont, 2009).

4.6.2 Spatial Inequalities and the Urban Advantage

The most striking result from the national model (Table 1) is the pronounced advantage linked to urban residence. The coefficient for urban location is +3.022 ($p < 0.001$) which shows that the location of households has a much greater impact on living standards than the individual characteristics of disability status. The "urban advantage" demonstrates how cities provide better access to infrastructure, diverse economic possibilities, advanced educational and healthcare resources which aligns with traditional spatial inequality theory (Davis, 2006). Across models, the variation in welfare between urban and rural households surpasses the difference attributable to being disabled or non-disabled.

4.7 Urban Disability and Socioeconomic Exclusion

The analysis in the second regression model from Table 2 shows that urban areas do not eliminate the disability penalty because disabled urban households receive a substantial decrease in welfare benefits (coefficient: −0.140, $p < 0.001$). The research results contradict the belief that cities automatically provide equal access to all residents because it demonstrates how built environments and labor markets in cities continue to create lasting disadvantages for people with disabilities (Imrie, 1996; Yeo, 2005). The research shows that older household heads in urban areas have better access to human and social capital resources because they maintain stronger connections to formal employment (Henderson, 2002). Female-headed households show a weak negative relationship with welfare benefits in urban areas (coefficient: −0.063, $p = 0.079$) because women encounter discrimination in high-paying jobs which reduces their total national benefits (Chant, 2013).

4.8 Disability and Demographic Effects in Rural Settings

The third model which is the rural model (Table 3), demonstrates that the disability penalty keeps its magnitude (coefficient: −0.146, $p < 0.001$) which indicates this disadvantage impacts all groups at the same level. People with disabilities experience different poverty factors between urban and rural areas because rural areas do not have enough healthcare services, specialized care facilities and restricted economic possibilities (Hanass-Hancock & Alli, 2015). The gender effect shows a positive relationship with rural female-headed households (coefficient: +0.497, $p < 0.001$) because

of strong community backing and established family systems that help rural women (Quisumbing & Maluccio, 2003).

4.9 Comparative Insights and Contextual Variation

The evaluation of regression coefficients between models shows multiple recurring patterns. The disability penalty shows no change in its strength (−0.140 to −0.147) across different locations. Household living standards receive small protection benefits from age in all model variations (coefficient: 0.015–0.016). Household gender dynamics produce different effects on the economy because they create positive national outcomes but generate weak negative effects in cities and strong positive effects in rural settings. The patterns show how various spatial economic and social elements generate distinct welfare results for Pakistani families throughout the nation.

4.10 Demographic Moderators: Age and Gender

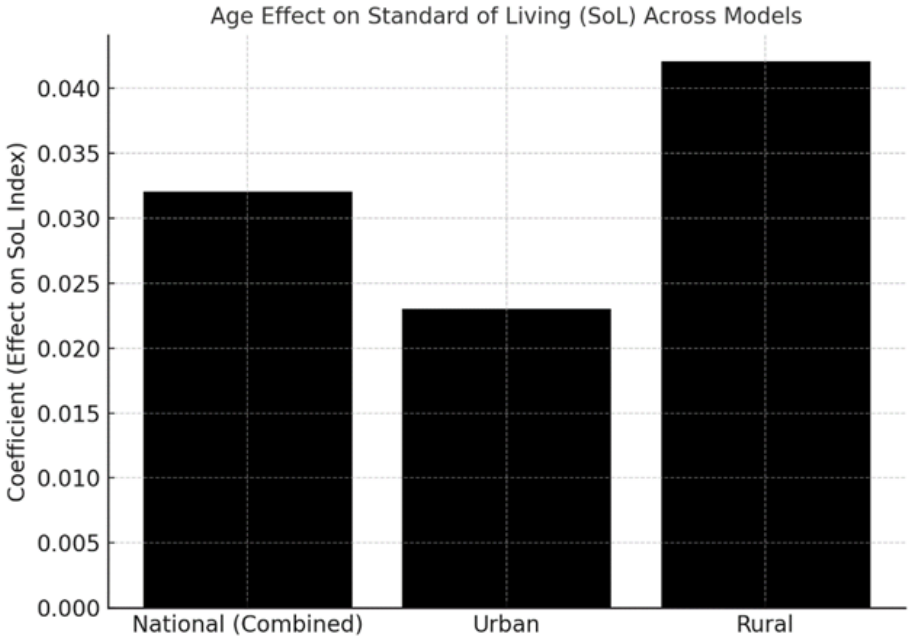


Figure 3: Age Effects

The data in Table 1 shows that age functions as a protective factor for household well-being because it has a positive coefficient of +0.015 ($p < 0.001$) which indicates that older household heads enhance their living standards through their accumulated assets and social connections and life experience (Deaton, 1997). The positive age effect benefits all people regardless of their background because their life experience and social connections in both cities and towns produce advantages.

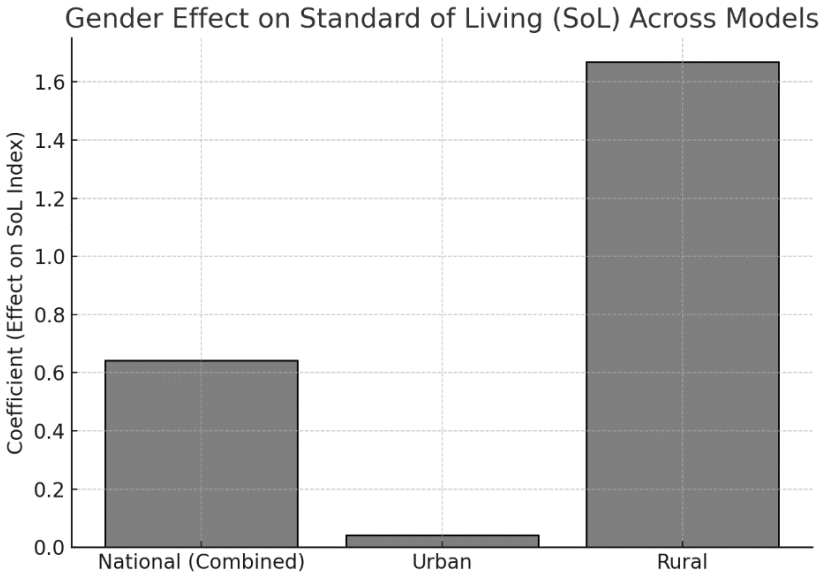


Figure 4: Gender effects

Household welfare faces different gender-related effects which change according to where people live. The national welfare advantage for female-headed households amounts to +0.351 ($p < 0.001$) because women leaders in well-being-enhancing households receive superior resource distribution or selection methods according to Duflo (2003). However, as shown in Tables 2 and 3, this gender effect diverges by context: it remains positive in rural areas but turns slightly negative in urban settings.Female heads in rural Pakistan achieve improved well-being results through their ability to handle household problems because they maintain close family bonds and work together to manage resources and receive dependable social backing (Quisumbing & Maluccio, 2003). The national-level advantages demonstrate the rural advantages which lead to women becoming household leaders (Duflo, 2003).

Urban areas create unique environmental conditions which differ from those found in rural areas. Urban women face two main obstacles that prevent them from getting stable high-paying jobs because of labor market restrictions and societal gender expectations and they lack sufficient social support to protect their families from risks (Chant, 2013). The shift of rural women to urban areas results in the breakdown of their community networks which used to protect them so their overall well-being decreases.

The research shows that gendered household results depend on general economic and social conditions which prevent researchers from assuming equal gender advantages in different areas. The model constants demonstrate substantial spatial inequality because rural households with advantageous characteristics maintain lower living standards than urban households with unfavorable traits because of ongoing disability penalties and geographic disadvantages.

The following section investigates the particular systems which sustain disability-based discrimination throughout various environments based on the existing evidence of broad disadvantage.

Chapter Five: Discussion

5.1 Rationale for moving Beyond Income-Based Welfare Measurement

The study made a crucial methodological choice to leave out income information from the PSLM when developing the household Standard of Living (SoL) index. The research indicates that income levels fail to represent the complete welfare situation for people with disabilities and other vulnerable groups. Income measures contain reporting inaccuracies and unstable data which do not consider the extra expenses disabled people must pay for healthcare services, assistive equipment and home modifications that reduce their actual purchasing capacity (Sen, 1992; Mitra et al., 2013).The research implements principal components analysis (PCA) to generate an SoL index which combines data from asset ownership, utility, housing quality and education for creating a stable measure of material conditions and social inclusion while preventing the known income-poverty measurement flaws that underestimate disability disadvantage.

The research design implements international best practice through its assessment of deprivation levels by using multiple non-monetary indicators. The research by Alkire and Santos (2010) shows that asset-based and service-access measures reveal particular poverty patterns which income-based methods fail to detect. Sen (1999) states that wellbeing assessment should concentrate on actual capabilities known as functionings instead of resources alone. Research on disability shows that people with disabilities need to pay additional expenses which are frequently not visible to others according to Zaidi and Burchardt (2005) and Cullinan et al. (2011) show, even comparable incomes do not equate to comparable living standards for disabled and non-disabled people.

5.2 The Universal Disability Penalty

The national model created a solid and uniform disability penalty system which matches the findings from international research. The regression analysis produced disability coefficients between −0.140 and −0.147 for all models which indicate that disabled family members reduce household welfare by 14–15% through their impact on standard deviation. This striking penalty holds even after controlling for geographic location, age, and gender, providing strong support for the presence of structural and systemic inequalities for PWDs in Pakistan. These findings echo results from Mitra et al. (2023) and the research by Banks & Polack (2014).

The results from domain-specific descriptive analyses show that disabled households achieve lower results in all areas including food security, digital inclusion, education, healthcare and basic service access. The descriptive analysis shows that disabled households face higher food insecurity rates in both rural (0.183) and urban (0.149) settings. Studies have shown that disabled people face two main obstacles which prevent them from accessing healthy food: higher expenses for living and job discrimination (Loopstra & Tarasuk, 2015; De Vogli et al. 2010).

Similarly, the digital divide shows a major gap between disabled rural families who have no internet access at 0.082 and urban non-disabled households who do have internet access at 0.339 which demonstrates that disability and rural residence make it harder for people to be included. As established by Goggin & Newell (2003) and Jaeger (2012), digital exclusion in turn reinforces both social and economic marginality.

5.3 The Dominance of Geographic Inequality

Consistent with findings in the regression analysis, geographic differences represent the most prominent axis of household welfare variation in Pakistan. The urban/rural gap is not only statistically significant but substantively larger than other demographic or compositional variables in the model. The urban residence coefficient (+3.022, $p < 0.001$) emerged as the strongest positive factor for welfare which exceeded the effects of disability status and age and gender. The "urban advantage" results from dense infrastructure and high economic and educational opportunity concentrations in Pakistani cities which builds on Davis (2006) and shows unique urban development patterns in the country.

The Descriptive domain analysis demonstrates the wide extent of the urban–rural gap through its findings that urban disabled households access modern cooking fuel at 0.607 while rural disabled households reach only 0.189 and experience similar advantages in internet connectivity and healthcare and sanitation. The research patterns demonstrate that spatial location remains the main factor which affects household wellbeing in contemporary Pakistan even after accounting for disability and other compositional elements.

5.4 Intersectional Disadvantage: The Double Burden

Households located in rural areas who also experience disability face the greatest disadvantage in welfare attainment because they experience a compound effect of their rural status and disability status. The models shows that the combined effect of disability and rural status creates an intersectional penalty through distinct exclusionary processes which combine disability barriers with insufficient rural infrastructure and missing essential services. The research follows Crenshaw's (1989) intersectionality framework by showing how Pakistani society experiences increased exclusion because of the combination of geographical and disability-related factors.

The Domain-level results show the strongest evidence of these patterns in areas that need both physical movement, digital tools and expert knowledge. For example, the analysis shows that rural disabled households have the lowest rates of internet access at 0.082 and computer ownership at 0.05 which creates extra challenges for their education, work opportunities and social interactions. The research results confirm the social exclusion patterns which Hanass-Hancock and Alli (2015) discovered in rural Southern Africa where multiple forms of disadvantage led to extreme social isolation.

The study further demonstrates that healthcare access creates multiple obstacles because rural disabled families must overcome both transportation difficulties and extended distances to reach medical services (healthcare transport access score: 0.286). The study confirms previous research which demonstrates that disabled patients need particular medical care but face barriers because of distant locations and insufficient service options (Iezzoni et al., 2004; McConachie & Black, 2003).

5.5 Gender Dynamics and Contextual Variation

The research findings show that gender influences on household well-being depend on specific circumstances which challenges the common development theory assumption that female-led households face universal disadvantages (Chant, 2013; Bradshaw, 2013). The national model demonstrates that female-headed households receive a substantial welfare benefit amounting to +0.351 but this benefit shows large differences between different geographic areas.

The welfare outcomes of rural female-headed households reach +0.497 which researchers attribute to their strong social connections, domestic competence and resource management abilities. The urban model shows that urban female-headed households face a small disadvantage of -0.063 because city women experience restricted job opportunities, insufficient social backing and ongoing prejudice (Chant, 2013).

The research also depicts how gender influences welfare delivery systems differently between rural and urban Pakistan. Rural female heads in Pakistan use their family ties and community-based methods to deal with difficult situations yet urban women experience decreasing support because they lack market access and employment options. The process of urbanization breaks down established social networks while creating fresh limitations which result in rural women becoming cut off from their previous support systems after moving to the city.

The way a household operates and the resources it has along with the exposure to discrimination patterns depends on gender. The demographic trait functions as a social indicator which also represents power dynamics, work distribution and social position systems. The analysis controls for gender to distinguish between the impact of being male or female and the effects of disability. The analysis of gender helps researchers determine if disability-related disadvantages exist across all cases or if they change based on who leads the household and its structure. The study demonstrates how women in certain situations face increased vulnerability because of their gender and social position yet women with robust social connections experience enhanced protection.

5.6 Age as a Key Dimension in Disability and Welfare

The regression analysis results show age functions as an independent protective factor which appears in both national and stratified models. The positive coefficient value of +0.015 ($p < 0.001$) in this study shows that older Pakistani household heads achieve better living standards regardless of their disability status and residential location. The combination of acquired assets,

social connections and life experience that older people acquire leads to better household outcomes which reduce their exposure to multiple forms of disadvantage.

The age is used as a control variable because theoretical frameworks and empirical evidence support its use. The relationship between age, disability occurrence and type is direct because disability rates increase with age according to both Pakistani demographic data and worldwide research findings. The analysis uses age as a control factor to distinguish between disability effects and age-related welfare changes which enables researchers to determine disability's distinct negative impact. The analysis needs this distinction because Pakistani households contain both early and late disability cases which need different life-stage resources and support systems.

The way disability affects people changes with age because older disabled individuals can use their social connections and life experience but younger disabled heads of households lack these protective factors. The failure to consider age differences between disabled household heads would produce misleading results that suggest disability creates equal disadvantages at every stage of life.

The study maintains its analytical integrity through the inclusion of age as a control variable which follows international research standards. The analysis benefits from age inclusion because it reveals how demographic characteristics interact with social resources to produce disability outcomes that differ between age groups.

5.7 Direct Cost Mechanisms and Resource Constraints

The regression and domain analyses confirm that disability functions as an exclusionary barrier which produces negative effects on various welfare domains according to previous controlled research. The financial condition of disabled families deteriorates because they must allocate additional funds to healthcare services and assistive equipment and home modifications and accessibility needs which diminishes their capacity to meet other welfare needs (Mont, 2007). The financial burden becomes most severe in rural areas because families must pay elevated market prices for energy while also dealing with disability-related costs when they try to obtain contemporary heating systems and fuel sources. The patterns show that direct costs act as major obstacles to obtain essential needs while continuing to block people from achieving better life conditions (Braithwaite & Mont, 2009).

The ownership rates of ICT and digital devices stay low for disabled households because they cannot afford the devices and the accessible technology costs too much money. The additional expenses for assistive technologies which Ripat and Woodgate (2011) found create digital exclusion problems that extend beyond typical price barriers.

5.8 Opportunity Cost Pathways and Intergenerational Effects

The total cost of disability-related disadvantage consists of direct costs and substantial lost possibilities. The loss of family income occurs because disabled people and their caregivers need to stop working which leads to employment in unstable or minimum-wage positions. The education performance gap between disabled rural families and non-disabled families reaches 0.231 which is lower than the 0.299 score of non-disabled families because disabled families face welfare competition that limits their ability to invest in education despite having accessible schools.

The research results confirm Becker's (1993) prediction about human capital constraints because disability expenses in the present decrease the amount of money available for education investments in the future. Currie and Moretti (2007) and Emerson (2007) further support that disadvantage is passed from one generation to the next through constrained educational opportunities and limited upward mobility.The study shows that caregivers need to stop working because of their family responsibilities which results in decreased household earnings and lower life contentment (Jones et al., 2006; Parish et al. 2004).

5.9 Systemic and Structural Exclusion

The data shows that disability exclusion occurs at every level of institutional and infrastructural systems which operate above household activities. The disability penalties in both urban and rural regression models show equal strength which shows that service delivery systems and infrastructure design create long-lasting barriers that go beyond personal characteristics. The disabled population in urban areas faces inadequate access to ICT and healthcare and social services because of ongoing physical barriers and discriminatory treatment which Imrie (1996) and Yeo (2005) describe as creating "disabling cities."

The existing structural barriers in rural areas become more severe because these areas lack proper infrastructure and essential services while being far from urban centers and having restricted transportation options which block disabled people from accessing basic services. The research of Hanass-Hancock and Alli (2015) shows that rural isolation creates multiple challenges which increase disability-related obstacles that result in social exclusion for disabled families living in rural areas.

5.10 The Rural Infrastructure Deficit

The research shows that rural disabled families face various disadvantages because of their disability status and because of current structural and organizational problems. The analysis reveals that these households face persistent deprivation of accessible roads and utility networks and reliable telecommunications and sufficient healthcare facilities because of urban development priorities that have existed for decades (“urban bias” as described by Lipton in 1977 and Burki et al. Jamal). The data patterns confirm earlier research and my personal observations which demonstrate that rural disabled people experience greater social isolation

because of insufficient physical infrastructure, restricted transportation options, reduced social ties and restricted digital resource availability.

5.11 Healthcare Access and Mobility Constraints

The healthcare domain shows that being close to a facility does not guarantee actual access to healthcare services. The lack of affordable accessible transportation along with inaccessible facilities and limited service options makes it harder for disabled families who live in rural areas. Previous studies, such as those by Penchansky and Thomas (1981) and Levesque et al. (The authors of the 2013 study contend that healthcare accessibility for vulnerable groups needs all three elements of physical access and financial support and service availability to be properly aligned but Pakistan's rural areas fail to achieve this standard.

5.12 Digital Divide and Technological Exclusion

The research data along with outside reports show that rural disabled families face a digital divide because they cannot access internet services or devices. The restricted access to technology creates two major problems for rural disabled households by blocking their information access and social connections. The “digital disability” (Goggin & Newell, 2003) makes basic ICT and educational resources unavailable to everyone unless specific investments and inclusive design approaches become the main focus. Contemporary analyses (Dobransky & Hargittai, 2006; Vicente & López, 2010; Borg et al.,Hargittai (2011) shows how technological difficulties create fresh social hurdles that generate social isolation according to his research.

5.13 Educational Barriers beyond Geography

The research shows that educational barriers result from institutional discrimination and insufficient facilities rather than physical distance to educational institutions. The exclusion of disabled children in rural Pakistan follows the patterns identified by UNESCO (2010) and Peters (2003) and Barton (1997) because of social discrimination and inaccessible facilities and insufficient teacher support which prevents them from achieving full educational participation. The current exclusions create long-lasting patterns of disadvantage which Emerson (2007) and Fujiura et al. have proven through their studies. The study by (2009) shows that educational disadvantages in the home environment continue to affect families through multiple generations.

5.14 Research Implications

5.14.1 Poverty beyond Income: A Multidimensional Lens

The research shows that using income-based poverty measures to evaluate welfare does not reveal the complete extent of disadvantage which affects disabled households. The analysis reveals patterns of inequality and exclusion through the development of an asset-based Standard of Living (SoL) index which monetary measures fail to detect. The exclusion of income from the

welfare measure achieves two goals; it reduces measurement errors and volatility while showing real structural disadvantages which would stay concealed otherwise.

The research on disability benefits from this innovation because standard income measurements fail to capture the added financial requirements disabled households need to cover their living expenses and social interaction barriers. The research design uses established methods for multidimensional poverty assessment which follow the recommendations of Alkire and Foster (2011) and Santos (2013) about using non-income indicators for poverty identification. Alkire & Santos (2014) further demonstrate that properly designed indices allow policymakers to target interventions more precisely and monitor developmental progress effectively.

Future research needs to improve welfare measurement by combining disability-specific indicators which include accessibility, assistive technology and social inclusion with traditional socioeconomic metrics. The new technologies will enable better policy evaluation to identify all obstacles that prevent disabled families from receiving support.

5.14.2 Domain-Specific Policy Analysis

The organization of findings through welfare domains enables researchers to determine which domains experience the most significant disadvantages and which require urgent intervention. The domain-based method in descriptive statistics and regression models helps policymakers identify which exclusion types (lighting, ICT, sanitation) persist at high levels so they can make the best use of their resources.

Research into development requires intersectional methods to understand how various social categories produce and make social disadvantages more severe. The research demonstrates that only intersectional analysis between disability, geographical location, gender and other factors can identify the specific mechanisms which produce complex welfare results in particular contexts. Analyzing categories in isolation misses the unique and combined effects at play.

This study supports calls by Crenshaw (1991), McCall (2005), Kapilashrami et al. (2015), and Hankivsky (2012) for intersectional research design, generating findings that guide more targeted and effective policy responses compared to traditional single-category analyses.

5.15 Study Design Limitations and Data Challenges

The research delivers vital information regarding disability and welfare disadvantage but readers must understand specific boundaries that affect their interpretation of the results.

1. The cross-sectional study design provides researchers with a single moment in time to study disability and welfare outcome connections and thus it fails to establish cause-effect relationships and track changes over time. Longitudinal and panel data analysis are necessary to establish causality and track the development of disadvantage over time.

2. The asset-based measure provides more detailed analysis than income-only measures but it includes the factors leading to disability and the effects of disability which makes interpretation more challenging. Assets may decline due to disability, but pre-existing asset deprivation may also increase vulnerability to disability.

3. The binary disability variable enables broad research but it conceals essential distinctions between different disability categories and their intensity levels.

4. The underrepresentation of rural disabled persons in Pakistan's large-scale household surveys stems from their limited social interaction, mobility problems and restricted access to surveys. The actual degree of disadvantage surpasses what this number shows. Improved sampling methods targeting high-risk, marginalized groups are needed.

5. The reliance on self-reported disability introduces potential bias, with variations in personal, cultural perceptions of disability and inconsistencies across regions. The Washington Group questions improve measurement accuracy yet researchers encounter difficulties when they attempt to achieve uniform results between different language settings and local contexts.

6. Asset-based indices help to avoid reporting errors in monetary income but they do not show the complete picture of household well-being because they do not include informal support networks and community resources which are essential in Pakistani society.

7. The exclusion of income from the main measure follows methodological principles but it makes it difficult to measure monetary poverty and the effectiveness of income-based interventions.

8. Advancing the field requires combining survey-based quantitative data with qualitative and participatory techniques, such as in-depth interviews and fieldwork with high-risk groups. The research method provides deeper understanding of how marginalized groups including rural disabled women and family caregivers experience life and handle obstacles and develop coping mechanisms.

The research maintains its worth despite these study restrictions. The authors have established vital research paths that need distinct data assessment and longer observation times and integrated research techniques and community participation in evaluation activities.

5.16 Future Research and Policy Priorities

5.16.1 Advancing Methodological Precision

Future research needs to implement longitudinal studies which track households throughout time to understand how disability affects welfare programs. Collecting panel data will allow for the analysis of both the onset of disability and its effects, making it possible to distinguish cause and effect and track changes across both monetary and non-monetary indicators.

5.16.2 Integrating Mixed and Participatory Methods

The combination of quantitative and qualitative research methods produces more complete and valuable research findings. The combination of survey analysis with fieldwork and interview methods in mixed-methods studies enables researchers to discover the obstacles which disabled people and their families encounter. Research design and interpretation processes become more valuable through participatory methods which enable people with disabilities to contribute their expertise for creating better data collection approaches and policy solutions.

5.16.3 Evaluating Policy and Innovation

Systematic assessment of major policy interventions such as social protection and infrastructure and rights enforcement is necessary. Multiple strategies to reduce disability-related disadvantage need evaluation through natural experiments and rigorous evaluation methods to identify their most effective approaches.

5.16.4 Rural Infrastructure and Disability Inclusion

There is an urgent need to analyze and evaluate rural infrastructure models for better inclusion of people with disabilities. The evaluation process requires complete assessment of mobile health units and digital platforms to identify which services provide the best support to marginalized rural communities.

5.16.5 Developing Comprehensive Measurement Tools

Future research needs to create new methods which unite income and asset information with composite assessment tools to enhance disability-related disadvantage measurement. Special care needs to be taken when merging financial and non-financial welfare elements because it prevents the duplication of identical elements.

5.17 Implications for Pakistan's Development Trajectory

5.17.1 SDG Implementation and Inclusive Development

The research findings demonstrate that Pakistan needs to speed up its inclusive development strategy because the Sustainable Development Goals (SDGs) demand complete social inclusion. The systematic exclusion of disabled households violates human rights while causing national development to stagnate because it results in lost human capital and economic stagnation. The ongoing disadvantages that affect different groups of people in various welfare areas directly impact the achievement of SDG targets 1, 4, 9 and 10 which focus on poverty reduction, quality education, infrastructure development and inequality reduction.

The research results indicate that SDG achievement needs disability inclusion to become an essential strategic component which must be embedded throughout all policy areas from urban planning to rural infrastructure development and educational institutions and digital connectivity programs. SDG 11 needs accessibility and inclusion integration throughout all development phases to prevent urbanization from establishing lasting social inequalities for present and future city inhabitants according to research findings.

5.17.2 Economic Development and Social Cohesion

The exclusion of disabled people who live in rural areas along with other excluded groups results in significant economic and social expenses. The research shows that insufficient human capital development funding for people with disabilities and their economic potential results in major national losses of productivity and creativity and resilience. Studies conducted by international organizations and local statistical data show that removing disability barriers leads to major advantages which decrease dependency levels and boost the national workforce availability (Buckup, 2009; Mitra & Sambamoorthi, 2014).

The research shows that ongoing educational and ICT access and basic service inequalities between different regions lead to social fragmentation which harms both Pakistan's federal structure and democratic values. All sectors need to make disability inclusion their core policy objective because this will create social stability and political legitimacy and sustainable growth.

5.17.3 Blueprint for Inclusive Structural Transformation

The research results show that Pakistan needs to shift from implementing isolated individual-level solutions to implementing core structural changes which will tackle the interconnected challenges of infrastructure and service delivery and economic opportunities. The inclusion of people with disabilities needs a complete system which unites rural development programs with urban planning initiatives and gender equality projects. The research data about ongoing disability penalties and major differences between rural and urban areas confirms the requirement for complete policy changes across the entire system. The research findings confirm the social model of disability (Oliver 1990; Shakespeare 2006) which demonstrates that social and institutional barriers produce more disability than physical or mental impairments.

5.17.4 The Promise of Inclusive Development

The study reveals major potential for revolutionary change although it demonstrates substantial existing disparities. Rural female-headed households achieve success through policy support which enables them to show remarkable resistance against various obstacles. Modern technology-based accessible services use design and policy approaches to eliminate traditional barriers through the ongoing digital divide in contemporary society.

Multiple poverty measurement methods help reveal hidden social inequalities which enables Pakistan to create targeted solutions that advance social inclusion past basic income-based poverty reduction. The research supports worldwide agreement that achieving the SDGs' "leave no one behind" goal requires direct attention to multiple forms of disadvantage which affect different population groups.

5.17.5 Pathways to a 21st Century Development Model

Research shows that disability-related exclusion stems from social decisions and policy systems instead of personal disabilities which requires fundamental changes to the system. The path to inclusive 21st-century development in Pakistan requires eliminating multiple obstacles which will enable every citizen including disabled people and women and residents from different areas to join fully in social and economic activities. Sustainable development becomes achievable for all population groups through the implementation of intersectional methods in measurement systems and policy design and monitoring frameworks.

Chapter Six: Policy Analysis and Recommendations

6.1 Introduction and Roadmap

The chapter performs a two-part assessment of Pakistan's disability frameworks through an evaluation of its legal framework, institutional structure and service delivery mechanisms. The current policies in Section 6.1 demonstrate how implementation failures and structural obstacles lead to standard of living differences between rural and urban areas. Section 6.2 provides evidence-based policy recommendations which focus on five thematic priorities including institutional strengthening, service delivery equity, infrastructure and accessibility, social protection, financial inclusion and intersectional approaches for women and children with disabilities. The recommendations directly result from the research findings which appear in Chapters 4 and 5. The monitoring and evaluation framework in Section 6.3 serves to track progress and maintain accountability. The chapter presents essential policy flaws before it describes multiple current and upcoming initiatives which aim to enhance disability inclusion throughout Pakistani development.

6.2 Policy Landscape and Gaps: Critical Analysis

6.2.1 Legal and Institutional Framework

Current Status

Pakistan has established a formal legislative foundation for disability rights across federal and provincial levels. Table 14 summarizes key legislation and policies enacted over two decades.

Table 15:Legal and Institutional Framework

Level	*Key Legislation/Policy*	*Year*	*Key Provisions*	*Implementation Status*
Federal	ICT Rights of PWDs Act	2020	Digital accessibility standards, web compliance	Weak enforcement, limited rural coverage
	UNCRPD Ratification	2011	International rights framework	Poor inter-ministerial coordination
	National Policy for PWDs	2002	Cross-sectoral inclusion approach	Outdated (20+ years), minimal revision
Provincial	Punjab Empowerment Act	2022	2% workforce quota, 5% higher education quota	Limited monitoring, low private sector compliance

Sindh Empowerment Act	2018	5% employment quota, neurodiversity coverage	Urban-biased implementation
Balochistan PWDs Act	2017	3% quota, health insurance provisions	Resource constraints, capacity gaps
KP PWDs Act	2020	Employment quotas, accessibility mandates	Rural service delivery gaps
GB PWDs Act	2019	Housing quota, disaster provisions	Geographic isolation barriers

Policy Gaps Identified by This Study

The official support for disability inclusion exists through written laws but these documents contain essential weaknesses.

First, enforcement mechanisms remain weak across all jurisdictions. The National Policy for Persons with Disabilities (2002) has not received a complete update since 2002 which restricts its ability to address modern issues including digital access and discrimination based on multiple factors and unequal opportunities between urban and rural areas. The different provincial quota systems lack proper monitoring systems and compliance enforcement which mainly affects rural districts because these areas have limited resources and weak accountability systems.

Second, rural areas experience greater levels of exclusion than other geographic regions. Research data shows rural Pakistan residents who have disabilities encounter more difficulties when trying to obtain their legally recognized benefits and services than people living in cities. The lack of rural implementation plans with restricted decentralization of disability authority to local government levels hinders the successful execution of existing policies.

Targeted Recommendation

The government needs to update federal and provincial disability laws which should match present inclusion goals and follow worldwide disability regulations. The system requires established accountability systems which will impose penalties on organizations when they do not fulfill their responsibilities. The government needs to create disability service delivery guidelines suitable for rural areas while building rural administrative strength for disability services and performing yearly compliance checks throughout provincial and district regions.

6.2.2 Service Delivery and Geographic Coverage Gaps

Current Status

Service provision across critical domains—healthcare, education, employment, and accessibility is heavily concentrated in urban areas. Table 15 presents the current distribution of disability services by domain and location.

Table 16:Service Delivery by Domain and Location

Domain	*Urban Areas*	*Rural Areas*	*Coverage Gap*	*Implication for Standard of Living*
Healthcare	Specialized hospitals, rehabilitation centers, therapy services	Basic health units (BHUs), limited specialists, minimal rehabilitation	70% of services in cities	Rural PWDs lack access to diagnostics, treatment, mental health support
Education	Special schools, inclusive education units, resource rooms, support staff	Mainstream schools, minimal assistive support, no special units	80% of special education urban	Rural disabled children face educational exclusion, limiting skills and employment
Employment	Skills training centers, job placement services, formal sector orientation	Agriculture-based work, home-based informal economy	Formal sector urban-concentrated	Rural PWDs trapped in informal, low-wage, unprotected work
ICT Access	Internet cafes, digital centers, mobile tech hubs	Limited mobile networks, minimal broadband, no digital infrastructure	60% digital divide	Rural PWDs excluded from digital economy, remote services, e-learning
Transportation	Public transit (limited accessibility), mobility aids	Informal transport, family reliance, no accessible infrastructure	No accessible rural transport	Rural isolation perpetuates multidimensional poverty
Social Protection	BISP centers, disability allowances, social services	Cash transfers via informal networks, family support only	40% rural coverage gap	Rural PWDs lack formal safety nets, dependent on unreliable family systems

Policy Gaps Identified by This Study

The standard of living between rural and urban areas shows evidence of service concentration through the findings presented in Chapters 4 and 5. People with disabilities who live in rural areas experience reduced quality of life because they lack access to essential services which affect their housing conditions and their ability to receive education and healthcare and build assets. The 70–80% urban concentration of healthcare and education services does not align with population distribution patterns which creates a major inequality.

Rural communities exist through family-based informal support systems and community resources which fail to meet their needs and force people to stay dependent while restricting personal freedom. The lack of accessible transportation leads to social isolation because rural PWDs cannot access available services located in district centers.

Targeted Recommendation

Implement rural-specific service delivery models combining fixed facilities with mobile and e-service options. Expand community-based rehabilitation, telemedicine, distance education, and decentralized assistive device distribution. Set minimum rural service density targets for each domain and monitor quarterly coverage via administrative data and community surveys.

6.2.3 Budget Allocation and Financial Constraints

Current Status

Government spending on disability remains critically low and unevenly distributed. Table 16 details annual budget allocations across federal and provincial governments.

Table 17 : Current Budget Allocation and Funding

Source	*Annual Allocation (PKR)*	*% of Total Budget*	*Primary Focus Areas*	*Rural vs. Urban Split*
Federal	2.1 billion	0.02%	Policy coordination, limited direct services	Unspecified, minimal rural targeting
Punjab	1.8 billion	0.15%	Education, employment programs	70% urban, 30% rural
Sindh	1.2 billion	0.12%	Healthcare, rehabilitation centers	80% urban, 20% rural
Balochistan	0.8 billion	0.20%	Basic services, quota enforcement	50% rural, 50% urban

KP	0.9 billion	0.10%	Skills training, accessibility projects	60% urban, 40% rural
NGOs/Donors	3.5 billion	Varies	Community programs, advocacy, direct support	40% rural, 60% urban
Total	~10.3 billion	~0.12%		

Policy Gaps Identified by This Study

The public funds allocated for disability services amount to less than 0.2% of total government spending which falls short for achieving actual inclusion. The provincial government distributes 70-80% of its budget to urban centers in Punjab and Sindh but rural areas continue to receive insufficient funding. The only province which uses equal distribution (Balochistan at 50:50) faces major problems with resource availability and execution of its system.

The funding from NGOs and donors (PKR 3.5 billion) exceeds government spending which creates problems regarding long-term financial stability, program coordination and national control. The stability of rural disability programs depends on external funding which donors can change at any time thus making it difficult to plan for the future.

Targeted Recommendation

The government needs to boost disability funding through federal and provincial budgets until they allocate 0.5% of their total annual spending while ensuring rural areas receive at least 50% of the allocated funds. The government should create separate rural disability funds which would undergo independent audit oversight. The government should use national disability policy frameworks to steer donor and NGO funding toward sustainable objectives which align with disability requirements. The budget needs to use outcome-based budgeting to monitor resource performance and measure how well it improves living standards.

6.2.4 Implementation Challenges: Structural and Contextual Barriers

Current Status

Despite formal policies and allocations, implementation remains fragmented and context-specific. Table 17 identifies major barriers by geographic and domain context.

Table 18:Implementation Challenges by Context

Challenge Category	*Rural Areas*	*Urban Areas*	*Cross-Cutting Issues*	*Link to Study Findings*
Infrastructure	Poor roads, no accessible transport, weak utilities	Retrofitting needs, overcrowding, congestion	Universal design standards absent	Rural PWDs face isolation; urban PWDs face physical barriers

Human Resources	No specialized disability staff, minimal training, capacity gaps	Service concentration, long waits, burnout	Professional development systems absent	Rural PWDs lack trained service providers; urban services overwhelmed
Financial	Extreme poverty, informal economy, user fees prohibitive	High service costs, insurance gaps, affordability barriers	Disability-specific expenses uncovered	Rural PWDs trapped in poverty; urban PWDs face cost barriers
Social/Cultural	High stigma, traditional attitudes, family shame	Discrimination, social isolation, prejudice	Systemic awareness deficits	Both contexts perpetuate exclusion; rural stigma more pronounced
Governance & Coordination	Weak local government capacity, minimal disability focus	Fragmented urban services, inter-agency silos	No national coordination mechanism	Rural governance weakest; urban services uncoordinated
Data & Monitoring	Poor coverage, severe underreporting, no baseline data	Better reporting but gaps remain, limited disaggregation	No standardized measurement tools	Study identifies monitoring as critical gap affecting both contexts

Policy Gaps Identified by This Study

Multiple complex obstacles exist during implementation because of basic social inequalities. The core issues affecting rural areas result from inadequate infrastructure, insufficient specialized staff, weak local leadership and extreme poverty which hinders service delivery and patient access. Urban areas face service delivery challenges because their better service density does not resolve problems with service fragmentation and high operational expenses and inadequate updates to current infrastructure. Organizations lack standardized independent monitoring systems which prevents them from tracking results and enforcing accountability for their inclusion targets.

The study's findings in Chapters 4 and 5 link these implementation gaps directly to disparities in standard of living. People with disabilities who live in rural areas face multiple forms of disadvantage because they lack policy protection and have limited access to services while facing poverty and inadequate governance systems which result in lower quality of life across housing and education and healthcare and asset ownership.

Targeted Recommendation

Rural disability coordination units need to establish their operations at district and union council levels with trained staff who have expertise in this field. Enforce universal design principles in all new infrastructure and retrofit plans. The project will establish autonomous surveillance systems which use PSLM-style surveys and community DPO involvement to create standardized measurement protocols. Fund capacity-building for local government disability coordinators. The establishment of inter-agency coordination forums at provincial and national levels should be done to decrease service fragmentation.

6.3 Evidence-Based Policy Recommendations

The following section presents actionable recommendations organized by thematic priority and directly linked to the rural-urban disparities and implementation gaps identified above. Each recommendation includes specific rural and urban implementation strategies.

6.3.1 Institutional Strengthening and Coordination

Recommendation 1: Establish a National Disability Commission

What is needed: Create an autonomous, statutory National Disability Commission with legislative, executive, and quasi-judicial powers to coordinate disability policy, monitor compliance, and adjudicate disputes.

Rural and urban strategies:

- Ensure 50% representation from PWDs and proportional representation from rural provinces.
- Establish provincial sub-commissions in all provinces with dedicated rural focal points.
- Mandate coordination authority over all federal ministries and provincial governments.
- Allocate minimum 1% of federal development budget annually to disability inclusion.

Timeline: 18 months

Recommendation 2: Strengthen Inter-Ministerial Coordination

What is needed: Create binding coordination mechanisms and mainstream disability across all sectors.

Implementation strategies:

- Establish Disability Inclusion Units in all federal ministries with dedicated staff, budgets, and accountability.
- Mandate joint planning and budgeting mechanisms; require disability impact assessments for all new policies.

- Conduct bi-annual inter-provincial coordination forums to share best practices, resolve rural-urban coordination issues, and align provincial approaches.
- Create feedback mechanisms linking national, provincial, and community levels.

Timeline: 1 year

Recommendation 3: Decentralize Service Delivery to District and Local Levels

What is needed: Shift authority and resources to district and union council levels to enable context-responsive, accessible service provision.

Rural and urban strategies:

- Establish district-level Disability Resource Centers providing integrated services (assessment, counseling, assistive devices, referral).
- Appoint dedicated Disability Focal Points at each union council with training and budget.
- Implement participatory local planning processes with DPO involvement in all service design and budget allocation.
- Fund local government capacity-building for inclusive planning, procurement, and monitoring.

Timeline: 2 years (phased implementation)

6.3.2 Domain-Specific Interventions: Service Delivery and Equity

Healthcare and Rehabilitation

Table 19: Healthcare and Rehabilitation Interventions

Intervention Type	*Rural Implementation*	*Urban Implementation*	*Target Population*	*Timeline*
Accessible Healthcare Infrastructure	Mobile clinics visiting quarterly; telemedicine linkages to district hospitals	Hospital retrofitting for universal access; specialized rehabilitation centers	All PWDs, priority: severe disabilities	3 years
Community-Based Rehabilitation	Train and support community health workers (CHWs) as disability facilitators	Expand specialized rehabilitation centers; train therapists	Working-age PWDs, chronic conditions	2 years

Assistive Technology Access	Establish district lending libraries for wheelchairs, hearing aids, mobility aids	Production and distribution hubs for assistive devices; subsidized access programs	All PWDs needing devices	2 years
Health Worker Training	Integrate disability modules in Lady Health Worker (LHW) training; ongoing skills support	Specialist capacity-building for rehabilitation therapists, psychologists	Healthcare workforce	1 year

Education and Skills Development

Table 20: Education and Skills Development Interventions

Intervention Type	*Rural Strategy*	*Urban Strategy*	*Key Performance Indicator*	*Timeline*
Inclusive Education	Teacher training in inclusive pedagogy; accessibility improvements in primary schools (ramps, toilets, learning materials)	Establish resource rooms in secondary and higher secondary schools; support teacher deployment	90% of schools practicing inclusive education by 2030	4 years
Early Identification & Intervention	Community-based screening programs linked to BHUs; family awareness and support groups	Specialized early childhood assessment centers; parental counseling services	All children with disabilities identified by age 3	2 years
Vocational Training	Agriculture, handicrafts, animal husbandry, small business skills relevant to rural economy	Market-oriented skills (hospitality, IT, finance); entrepreneurship incubation	50% of working-age PWDs in skills training	3 years

Higher Education Access	Distance learning options; scholarships and assistive technology support; local college accessibility	Campus accessibility audits; academic support services; inclusive admissions policies	10% quota achievement in all universities; 95% retention	3 years

Employment and Economic Inclusion

Table 21: Employment and Economic Inclusion Interventions

Strategy	*Rural Focus*	*Urban Focus*	*Expected Outcome*	*Responsibility*
Quota Enforcement	Monitor local government (union councils, district administration) and agriculture sector compliance; incentivize rural employers	Audit private sector compliance; establish specialized job centers; enforce public sector accessibility	Achieve 5% employment quota across both sectors	Labor Department, Provincial authorities
Entrepreneurship Support	Promote disability-focused cooperatives; expand microfinance with disability-friendly terms; provide business training	Business incubators for PWD entrepreneurs; market linkage programs; investment grants	25% increase in disabled entrepreneurs; 40% increase in PWD-led microenterprises	SMEDA, Provincial governments
Workplace Accessibility	Support home-based work arrangements; subsidize assistive technology; flexible	Office retrofitting standards; accessible transport subsidies; personal assistant support	100% of public sector workplaces meet accessibility standards	All employers, regulatory bodies

	scheduling options			
Employer Incentives	Tax breaks and subsidies for rural employers hiring PWDs	Accessibility grants, training reimbursement, tax deductions for urban employers	50% increase in private sector hiring of PWDs	Ministry of Finance, Provincial authorities

Digital Inclusion and ICT Access

Table 22: Digital Inclusion and ICT Interventions

Component	*Rural Delivery Model*	*Urban Delivery Model*	*Coverage Target*
Connectivity	Community internet centers (solar-powered); satellite internet for remote areas; mobile network expansion	Fiber-optic expansion; public WiFi in government buildings; redundant systems	90% coverage in rural areas; 100% in urban areas
Devices	Subsidized accessible tablets and smartphones; device lending programs; repair services	Assistive technology support centers; device procurement programs; training	70% of PWDs with access to adaptive devices
Skills Training	Mobile digital literacy units; peer-to-peer training; local language content	Digital literacy centers with certification; advanced skills (coding, data analysis)	60% of PWDs with basic digital skills
Content Development	Local language audio resources, simple graphics, Urdu/regional scripts	Accessible websites meeting WCAG standards; mobile apps with sign language, captions	100% of government services digitally accessible

6.3.3 Infrastructure and Universal Design

Transportation and Mobility

Table 23: Transportation and Mobility Interventions

Intervention Type	*Rural Solutions*	*Urban Solutions*	*Implementation Timeline*	*Accessibility Standard*
Public Transport	Subsidized accessible buses on major rural routes; accessible shared transport systems	Retrofitted city buses with ramps/lifts; accessible metro systems; real-time information	5 years	Pakistan Accessibility Code compliance
Road Infrastructure	Accessible footpaths, pedestrian crossings, rest stops; village connectivity improvements	Complete streets with curb cuts, tactile indicators, audio signals	3 years	Universal design standards
Personal Mobility Support	Subsidized wheelchair and mobility aid programs; repairs and maintenance services	Accessible parking; ramp installation in public buildings; device distribution	2 years	Free or subsidized provision
Information Systems	Audio announcements, braille signage, simple maps; SMS-based service information	Real-time apps, mobile alerts, accessible ticketing	1 year	Multimodal, accessible formats

Housing and Built Environment

Table 24: Housing and Built Environment Interventions

Area	*Rural Approach*	*Urban Approach*	*Accessibility Standard*	*Timeline*
Public Buildings	Universal design in all new construction (schools, health centers, administrative offices)	Systematic retrofitting of existing government buildings; new construction compliance audits	Pakistan Accessibility Code (2009) compliance mandatory	Ongoing for new; 3 years for retrofitting

Housing	Accessible rural housing schemes for PWDs; mortgage support for accessible home modifications	Inclusive urban development; 5% accessible units in all new residential projects	Universal design principles; visitability standards	2 years for targets
Commercial Spaces	Market and bazaar accessibility improvements; informal sector shop accessibility	Shopping center compliance monitoring; restaurant, bank accessibility audits	Mandatory accessibility audits annually	Ongoing, phased enforcement
Recreational Facilities	Community center modifications; sports and cultural facility accessibility	Park accessibility, adapted sports facilities, public plaza inclusive design	Universal access to all public spaces	3 years

6.3.4 Social Protection and Financial Inclusion

Comprehensive Social Protection Framework

Table 25: Comprehensive Social Protection Framework

Component	*Target Group*	*Rural Delivery Mechanism*	*Urban Delivery Mechanism*	*Coverage Goal*	*Timeline*
Disability Allowance	All PWDs below poverty line (BISP-eligible)	Mobile payment systems; local agents; cash disbursement points	Bank transfers; ATM access; digital wallets	100% coverage; PKR 5,000–10,000/month	2 years
Healthcare Coverage	PWDs and family members	Insurance vouchers; mobile health clinics; subsidized treatment	Health insurance integration; cashless treatment facilities	Universal coverage	3 years

Education Support	All disabled children/students (primary to higher education)	Transport vouchers; boarding allowances; assistive tech support	Scholarships; academic support services; assistive technology	All disabled children in school	2 years
Employment Support	Working-age PWDs (18–60 years)	Skills training stipends; microenterprise start-up grants; agricultural support	Job placement services; wage subsidies; employer training	60% employment rate	3–5 years

Financial Inclusion Strategies

Table 26: Financial Inclusion Strategies

Service Type	*Rural Model*	*Urban Model*	*Expected Impact*	*Monitoring Metric*
Banking Access	Mobile banking agents; accessible rural branches; simplified account opening	Accessible ATMs with sign language; braille; digital banking interfaces	80% of PWDs with formal bank accounts	Annual banking survey
Credit Access	Disability-friendly microfinance (no collateral requirement); group lending schemes	Business loans with collateral alternatives; crowdfunding platforms	40% increase in PWD entrepreneurs; 60% loan uptake	Loan volume and default rates
Insurance Coverage	Community-based insurance schemes; subsidized premiums	Inclusive life and health insurance; disability-specific products	70% of PWDs with insurance coverage	Premium penetration rate
Digital Payments	Mobile money with accessible interfaces; USSD-based services	Online banking; accessible payment apps; QR code systems	90% digital payment adoption; reduced cash dependency	Transaction volume and inclusion

6.3.5 Gender-Responsive and Intersectional Approaches

Women with Disabilities

Table 27: Gender-Responsive Interventions for Women with Disabilities

Intervention Area	*Rural Strategy*	*Urban Strategy*	*Success Metric*	*Timeline*
Economic Empowerment	Women's disability-focused cooperatives; home-based work support; microfinance linkage	Skills training for market-oriented trades; entrepreneurship incubation; market access	50% increase in women's employment; average income growth	3 years
Healthcare	Women-only mobile health services; reproductive and maternal health focus	Gender-sensitive rehabilitation; mental health counseling; violence support	Reduced maternal mortality; improved reproductive health outcomes	Ongoing
Education	Girls' education campaigns; family engagement; secondary education support	Women's literacy and higher education programs; scholarship support	Gender parity in education enrollment; 70% completion rates	3 years
Protection	Community awareness on rights and violence; legal aid access; safe reporting mechanisms	Safe spaces; counseling services; specialized law enforcement training	Zero tolerance enforcement; victim support services active	Ongoing

Children with Disabilities

Table 28:Child-Centered Interventions

Priority Area	*Rural Interventions*	*Urban Interventions*	*Target Timeline*	*Outcome Indicators*

Early Identification	Community screening programs through health workers; awareness campaigns	Pediatric assessment centers; newborn screening programs; follow-up systems	2 years for full coverage	95% of children identified by age 3
Family Support	Parent training and support groups; peer mentoring; resource distribution	Respite care services; counseling; social integration support	Ongoing	80% of families accessing support services
Inclusive Education	School accessibility improvements; teacher disability training; peer support	Resource allocation; support teacher deployment; inclusive curriculum	3 years	90% inclusive school enrollment
Child Protection	Community protection committees; awareness on child rights; local reporting	Specialized services; legal aid; safe spaces; counseling	Immediate establishment	Zero tolerance; 100% case response rate

6.4 Monitoring and Evaluation Framework

Effective implementation requires systematic, independent monitoring at multiple levels. Table 28 presents a comprehensive monitoring framework linked to outcomes and accountability.

Table 29: Monitoring and Evaluation Framework

Level	*Key Indicators*	*Data Source*	*Measurement Frequency*	*Responsibility*	*Accountability Mechanism*
National	SDG disability indicators (4.5.1, 5.1.1, 8.5.2, 10.2.1, 17.18.1); poverty rates; employment rates; service coverage	National surveys (PSLM); census; administrative data; donor reports	Annual	Federal Statistics Division; National Disability Commission	Cabinet briefing; Parliamentary committee; public reporting

Provincial	Service coverage by domain; budget execution; equity ratios (rural:urban); compliance rates	Administrative data; audits; provincial surveys	Quarterly	Provincial disability departments; Planning & Development	Provincial assembly; media; DPO advocacy
District	Individual outcomes (income, asset ownership, education, health); accessibility compliance; local service functionality	Community surveys (PSLM-style); accessibility audits; beneficiary feedback	Monthly	District administration; DPOs	District coordination committees; public dashboards
Community	Service utilization rates; beneficiary satisfaction; DPO participation; grievance response	Community monitoring; focus group discussions; grievance logs	Ongoing	Disabled Persons' Organizations (DPOs); civil society	Community forums; media engagement; ombudsman reporting

6.5 Conclusion: Bridging the Disability Gap through Evidence-Based Policy

The current chapter conducts an analytical assessment of Pakistan's disability policy framework to identify major implementation challenges and unequal resource distribution and significant differences between rural and urban areas. The research results in Chapters 4 and 5 show that people with disabilities in rural settings have significantly reduced living standards because of insufficient policies and missing services which affect their access to housing and education and healthcare and asset ownership.

Key Evidence-Based Policy Gaps

- Legislative framework exists but lacks enforcement, rural targeting, and contemporary relevance.
- Service concentration in urban areas (70–80% of critical services) perpetuates rural exclusion and compounds multidimensional poverty.
- Budget inadequacy (0.2% of government expenditure) and urban bias (70–80% to cities) leave rural disability inclusion severely underfunded.
- Implementation barriers infrastructure deficits, human resource scarcity, weak governance, stigma interact to exclude the most marginalized.
- Gender and child-specific gaps leave women and children with disabilities, particularly in rural areas, least reached by programs.

Prioritized, Actionable Recommendations

Near-Term Actions (within 1–2 years):

1. Establish National Disability Commission with enforcement authority and rural representation.
2. Update federal and provincial disability policies to align with current needs and international standards.
3. Realign budgets to guarantee minimum 50% rural allocation; increase disability spending to 0.5% of government budget.
4. Recruit and train rural disability coordinators at district and union council levels.
5. Establish independent monitoring systems using PSLM data and community DPO participation.

Medium-Term Actions (3–5 years):

6. Enforce universal design in all new infrastructure and phase retrofitting of existing public spaces and services.
7. Expand hybrid service models combining fixed facilities with mobile and e-services to reach rural populations.
8. Mainstream disability inclusion units across all government ministries and provincial departments.
9. Scale gender- and child-responsive interventions to ensure intersectional inclusion and protection.
10. Establish inter-agency coordination forums to reduce fragmentation and align rural-urban service strategies.

By systematically implementing these evidence-driven recommendations and targeting the most critical gaps identified in this study, Pakistan can transition toward a rights-based, inclusive policy environment that recognizes disability as a fundamental cross-cutting priority and ensures equitable access to opportunities, services, and participation for all PWDs, particularly those in underserved rural communities.

Chapter Seven: Conclusion

7.1 Introduction

This thesis addressed three core research objectives to advance understanding of disability-related disadvantage in Pakistan:

Research Objective 1: Construct a multidimensional Standard of Living (SoL) index using Principal Component Analysis (PCA) based on the PSLM 2019-20 dataset.

Research Objective 2: Evaluate the disability penalty in household living standards through regression models, controlling for age, gender, and region to distinguish the independent effect of disability.

Research Objective 3: Analyze variations in disability penalties across rural and urban contexts, with further exploration of age and gender intersections.

The research employed post-positivist quantitative methods which applied the Social Model of Disability in sync with Capability Approach and Intersectional frameworks to study how disability impacts household welfare in Pakistan while analyzing how location and population characteristics affect this relationship. This conclusion systematically addresses how each objective was achieved, what gaps were thereby closed, and what implications emerge for policy and practice.

7.2 Achievement of Research Objectives and Closure of Literature Gaps

7.2.1 Research Objective 1: Multidimensional Standard of Living Index

The first objective was to construct a multidimensional SoL index using PCA applied to PSLM 2019-20 microdata. The index used multiple household welfare indicators which included housing quality, asset ownership, educational attainment, basic service access and health status instead of depending on income or consumption data.

Gap addressed:

The disability research and policy framework of Pakistan depends on limited measurement tools which do not show the complete extent of disadvantage faced by people with disabilities. The PSLM 2019-20 survey contains rich data but lacks a published, validated, multidimensional welfare index disaggregated by disability status. The existing gap prevented policymakers from understanding the complete level of disability-related disadvantage.

Advancement to literature:

The research develops a complete SoL index for Pakistan which proves that disability scholarship benefits from multidimensional welfare frameworks that show greater and more complex disadvantage patterns than single-dimensional assessments. The index serves as a reliable

benchmark which enables disability-inclusive development tracking and sectoral analysis to identify essential intervention areas.

Key finding:

The SoL index shows that disability penalties create equal negative impacts throughout all regions of the country which decrease household welfare by 14-15% in all areas for all social groups thus proving disability disadvantage exists as a complete system-wide issue.

7.2.2 Research Objective 2: Evaluating the Disability Penalty via Regression Analysis

The second objective employed controlled regression models to determine how disability affects household economic conditions. The research used regression to study SoL index outcomes through disability status as the primary predictor and age and gender and regional variables as control variables to establish disability's standalone effect.

Gap addressed:

Research about disability penalties has been conducted across the world but Pakistan requires quantitative studies to determine how disability affects household welfare throughout the entire country. The lack of evidence created difficulties when trying to prove policy changes needed support and when creating specific intervention plans.

Advancement to literature:

The research establishes a vital knowledge gap through its development of the first precise multidimensional disability penalty measurement for Pakistan. The research shows that disability causes a 14-15% decrease in household living standards which applies to all studied areas and population segments. The study establishes disability as a major welfare factor which matches the impact of established development risks. The penalty system demonstrates that disadvantage exists throughout all populations because it shows no variation in its application.

Key finding:

The disability coefficient maintains its strength at 14-15% welfare reduction in all model variations which proves that disability creates a real welfare impact that does not depend on demographic or geographic variables.

7.2.3 Research Objective 3: Rural-Urban Variations and Intersectional Patterns

The third objective was to analyze how disability penalties vary by geographic location (rural vs. urban) and to explore intersectional effects of disability with gender and age. The research used regression analyses with spatial disaggregation to show that different geographic areas faced different risk levels because of their specific characteristics.

Gap addressed:

The disability policy of Pakistan has maintained a single approach to disability without considering how rural and urban areas differ or how different social groups intersect. The current gap between policy creation and execution resulted in non-effective policies which failed to protect vulnerable groups through inappropriate standardized approaches that did not suit Pakistan's various geographical areas.

Advancement to literature:

The research confirms through empirical evidence that disability disadvantage exists in direct relation to geographic location. The research shows that disability penalties exist in both rural and urban settings through separate systems which use urban service centers in rural areas and community-based support networks in rural communities yet both systems create equal barriers for disabled people and their families to receive services. The study shows that disability creates equal service consistency between rural and urban areas through different service delivery approaches which proves that structural disadvantage exists independently of service models and stems from systemic exclusion.

The research reveals multiple ways disability status intersects with geographic location and gender which results in varying welfare outcomes. The worst disadvantages affect rural homes that have disabled members because these households face both digital exclusion and restricted healthcare services which create additional disadvantage because of their disabled and rural status. The research shows that female-led rural families outperform male-led families in terms of welfare despite facing distinct challenges because they use their strong support networks and flexible resource management skills to overcome obstacles.

Key findings:

- The disability penalty reduces all areas by 14-15% throughout every geographic and social environment.
- Better services in urban areas do not automatically lead to disability inclusion because disabled families in cities encounter multiple barriers when trying to access these services.
- The location of a household determines its welfare status more than any other factor because urban areas provide better advantages than any combination of disability status and personal characteristics.
- The adaptive resilience of female-headed rural disabled households emerges through their ability to manage resources and receive community support yet their adaptive capacity does not eliminate existing welfare disparities.
- The combination of different forms of disadvantage leads to increased welfare deficits because each disadvantage multiplies the effects of the others.

7.3 Theoretical Contributions and Framework Advancement

The research develops disability theory through its South Asian-based implementation of intersectionality which proves that disability-related disadvantages emerge when personal factors meet institutional breakdowns and societal discriminatory systems. The research applies Social Model of Disability together with capability approaches and intersectional frameworks to demonstrate that disability impacts vary significantly based on residential location and gender and family background. The discovery of equal penalty consistency between urban centralized and rural community-based service delivery models proves that disability-related disadvantage stems from institutional barriers rather than insufficient service availability which supports disability research about structural determinants.

7.4 Methodological Innovation and Replicability

The SoL index construction through PCA and sector-wide validation and stratified regression methods delivers new analytical methods which researchers can use for upcoming PSLM surveys and other national statistical collections. The framework allows for controlled disability-inclusive development tracking while producing strong evidence needed for policy creation and assessment.

7.5 Critical Implications for Policy and Practice

The research results require Pakistan to establish new essential methods for disability inclusion.

The disability penalty exists universally and consistently in all situations which makes it necessary to integrate into standard practices. The 14–15% penalty which affects all regions and social groups proves that disability affects all government agencies as a development priority that requires their attention.

Second, the finding that disability disadvantage persists despite different service delivery models indicates that infrastructure alone is insufficient. The two settings of rural communities that use community networks and urban areas with centralized services experience similar challenges that prevent inclusion. The research indicates that exclusion persists because of multiple barriers which include institutional and attitudinal obstacles in addition to service availability limitations. The solution to exclusion requires both anti-discrimination enforcement and rights-based protection and universal design principles.

Third, gender- and intersectional-responsive strategies must be integrated into all disability policy. The research shows that female-led rural families demonstrate strong resistance yet male-led disabled rural families need specific assistance because they face increased risk. The labor market and support system challenges that urban female-headed households encounter need interventions which understand their unique situation.

The social protection system needs to evolve from its current state of separate programs into a unified system which provides complete support to people. The 14–15% welfare penalty that affects housing and education and healthcare and asset ownership requires more than income

transfers to solve. A social protection framework needs to combine Universal design with assistive technology access and education support and employment assistance.

Fifth, rural areas require specific, substantial investment despite their different service delivery models. The results show that penalty rates remain consistent at the same level regardless of service delivery approach which indicates rural areas experience different types of system-wide obstacles rather than increased disadvantages. The implementation of digital infrastructure and healthcare services and assistive technology in rural areas requires dedicated funding for their development.

7.6 Advancing Pakistan's Development Agenda and SDG Achievement

The research shows that disability inclusion serves as a fundamental requirement to reach various Sustainable Development Goals. The research establishes that disability creates a 14-15% decrease in household standard of living across all areas including housing and education and healthcare and asset ownership. The study establishes disability as a critical factor for SDG 1 poverty reduction and SDG 4 quality education and SDG 9 infrastructure development and SDG 10 inequality reduction in Pakistan's SDG implementation strategy.

7.7 Limitations and Directions for Future Research

The research uses strong national data but the single-round PSLM design prevents researchers from determining cause-and-effect relationships. Longitudinal studies tracking households over time would strengthen understanding of disability's welfare impacts.

Intersectional complexity: The research shows how gender affects people in different locations but future studies need to analyze various disability types and their severity levels and when disabilities start and other demographic factors including caste and ethnicity and religious affiliation when applicable.

Qualitative understanding: Future research requires uniting quantitative data analysis with qualitative interview methods to identify disability-related welfare penalty mechanisms and develop community-based and policy solutions.

Future research directions:

- Longitudinal studies tracking household welfare trajectories before and after disability onset.
- Research using a mixed-methods design to analyze quantitative data together with qualitative studies about household survival methods and community member viewpoints.
- The assessment of interventions requires identification of optimal policy interventions which minimize disability penalties.
- The research findings should be presented through distinct sections which analyze different disabilities at various severity levels to create evidence for particular population needs.

7.8 Contributions to International Literature and South Asian Context

The research adds value to worldwide disability-development studies through its detailed analysis of a big South Asian nation which faces development obstacles and has a developing youth population. The Pakistani experience with fast urban growth and digital market development and policy changes provides valuable insights for developing nations which need to integrate disability inclusion into their development strategies.

7.9 A Final Word: Toward Inclusive Transformation

The evidence from this thesis demonstrates that disability-related disadvantage affects a vast number of people in Pakistan who experience ongoing disadvantage across all systems. The 14-15% welfare penalty affects all regions and social groups by creating a major development challenge that impacts housing and education and healthcare and asset ownership. The system contains an essential defect which should not be present. The results emerge from policy choices and institutional decisions which can be changed through effective reform efforts.

The development of a welfare index with multiple dimensions along with precise disability penalty measurement and disadvantage pattern analysis across various settings creates the empirical base for radical transformation. The discovery of equal penalty consistency between different service delivery models indicates that actual inclusion needs more than service delivery because it requires institutional changes and rights protection and universal design throughout project development.

The government needs to shift from recognition to actual implementation through financial support and policy adjustments and system changes that embed disability inclusion across all operations with development partners and civil society organizations and disabled persons' organizations. The country stands at a critical point in its development during this current time. The evidence is clear. The time has arrived to make changes.

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