Determinants of Human Wellbeing and its Prospect Under the Role of Financial Inclusion in South Asian Countries

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Abstract:

This study aims to examine the impact of financial inclusion on human well-being in South Asian countries from 1996 to 2020. Specifically, Pakistan, India, Sri Lanka, and Bangladesh were selected for this investigation. Human well-being is treated as the dependent variable, while financial inclusion, health facilities, voice & accountability, income inequality, corruption, education facilities, and the unemployment rate are considered independent variables. The study's findings indicate that financial inclusion, health facilities, and education facilities have a positive and significant impact on human well-being. The improvement of health and educational facilities not only creates more employment opportunities but also contributes to the enhancement of income, education, and health status within a nation. These results explain that selected South Asian countries should prioritize the promotion of education and health facilities to elevate the overall level of human well-being. Voice & accountability, along with corruption, exhibit an inverse and significant influence on human well-being in selected South Asian countries. Income inequality, on the other hand, shows an inverse but insignificant impact on human well-being, while unemployment has a significant and positive influence. Based on the estimated results, it is recommended that to enhance the level of human well-being in South Asian countries, there is a need to improve financial inclusion, health facilities, and educational facilities.

Keywords: human well-being; financial inclusion; health facilities; voice & accountability.

JEL Classification: D63; I22; I30; P46.

Introduction

Understanding human well-being is a fundamental task for both researchers and policy-makers. Assessing whether human well-being has improved over time is of crucial importance, especially given that more than 1 billion people live on less than $1 a day. This challenge lies at the core of monitoring progress towards the Sustainable Development Goals (SDGs). However, human well-being is an ambiguous concept. It lacks a universally accepted definition and has numerous, and often conflicting, interpretations. Since human well-being cannot be directly observed, it becomes challenging to measure it directly. Furthermore, terms such as quality of life, welfare, well-being, living standards, utility, life satisfaction, prosperity, needs fulfillment, development, empowerment, capability expansion, human development, poverty, human poverty, land, and, more recently, happiness are often used interchangeably with well-being without explicit discussion on their distinctiveness. Conservative and traditional societies often treat humans as a means, with insufficient attention given to human well-being or a higher standard of living. Kant (1949) emphasizes that humans should be treated as an end and not merely as a means, making human well-being the primary goal of advanced societies.

The conceptualization of human well-being has evolved. Its multidimensional nature is now commonplace in discussions. However, only recently was human well-being primarily considered analogous with income and consumption levels. This shift largely reflects Sen's (1985, 1987) work on capabilities and functioning, alongside other contributions such as Nussbaum (2000) central human capabilities, Doyal and Gough's (1991) intermediate human needs, and Narayan (2013) axiological needs, among others. Consequently, approaches to measuring human well-being have expanded to incorporate these non-economic aspects. Issues such as gender and sustainability have also become increasingly integrated within analyses of human well-being. Given this evolution, it seems incongruous that the most common measure of human well-being is still income.

Income enables individuals (and nations at the aggregate level) to increase consumption and consumption, in turn, enhances utility. However, there is little agreement within the literature on how consumption might accurately represent human well-being. Well-being has been defined in various ways, including as a direct function of consumption (McKenzie, 1983; Slesnick, 1998), particularly in areas of great poverty (Hueting, 1980), as a function of consumption and the environment (Islam & Clarke, 2002), as a function of consumer surplus (Johnson, 2003), as a function of consumption weighted by the probability of survival (Nordhaus, 1998), and as the marginal propensity to consume (Islam & Clarke, 2002). However, the limitations of income-based (or consumption-based) measures of human well-being, including issues related to equity, the environment, and their construction.

Conventional economists traditionally employed two measures for assessing human well-being: Gross Domestic Product (GDP) at the macro level and per capita income at the micro level. Tobin & Nordhaus (1972) regarded net economic welfare, based on aggregate consumption, as a criterion for human well-being. Other significant criteria for measuring human well-being include the basic needs approach of the International Labor Organization (ILO) (1976), the Physical Quality of Life Index (PQLI) proposed by Morris (1979), and the Human Development Index (HDI) introduced by the United Nations Development Program (UNDP) in 1990. According to UNDP (1990), Anand and Sen (2000), and Dasgupta (2001), the problem with traditional measures, such as those of Nordhaus and Tobin (1972), lies in their inability to capture real social conditions and income distribution within households. Sen (1992) emphasizes that human well-being, or a better living standard, transcends household consumption; it involves the ability to consume and the capabilities to participate in society. In simpler terms, human well-being encompasses better education, improved healthcare, and a reasonable allocation of resources that enhance the quality of life, contributing to the achievement of desired socioeconomic and financial targets.

A substantial body of literature explores various determinants of human well-being (Konyukhova et al., 2017; Hathroubi, 2019). Among these, financial inclusion has gained significant attention from policymakers and financial experts. Financial inclusion encompasses factors such as the number of accounts in banks, bank branches, ATMs, credit and debit cards, SWIFT, IBAN, Master Cards, etc. (Chilukuri et al., 2016; Audi et al., 2019; Shah & Ali, 2022; Shah & Ali, 2023). An inclusive financial system brings both micro and macro benefits to businesses and households. On a macro scale, it promotes a formal financial system, aiding governments in tracking illegal money and increasing tax collection. It can also contribute to reducing organized crimes like corruption, illegal arms trade, terrorism financing, and trafficking. On a micro scale, benefits include access to credit and microfinance, which elevate individuals' income levels, assist in covering education expenses, and reduce future opportunity costs (Hathroubi, 2019). This underscores the idea that the micro or macro-level access and availability of financial resources can impact human health, education, and income.

The relationship between the access and availability of financial resources and the level of human well-being, whether direct or indirect, has been overlooked in existing literature. Thus, this study is novel in examining the impact of financial inclusion on human well-being in selected South Asian countries.

1. Literature Review

The issue of human well-being has garnered significant attention in the literature of social and management sciences over the past few decades. The improvement of human well-being is not only essential for socio-economic goals but also for individuals themselves. Better human well-being is associated with the achievement of both individual and aggregate targets (Clark, 2003; Gürlük, 2009). The UNDP's 'Sustainable Development Goals 2030,' addressing objectives like no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, decent work and economic growth, a clean climate, inclusive financial systems, and peace, justice, and strong institutions, are directly and indirectly related to human well-being (UNDP, 2015). Consequently, human well-being cannot be overlooked in the pursuit of targeted socioeconomic development (Frey & Stutzer, 2002). Various studies have connected human well-being with numerous indicators (De Soysa and Jutting, 2006; Parlevliet, 2007; Casson et al., 2010; Ali, 2018).

Throughout human history, human well-being has remained a central objective in socioeconomic, political, legal, and financial policies (Smith, 1776). Various studies have explored different determinants of human well-being (Binder and Georgiadis, 2011; Ali, 2015; Hathroubi, 2019), yet the debate persists. In contemporary times, the concept of financial inclusion has gained significant importance among policymakers and financial experts. Financial inclusion comprises factors such as the number of accounts in banks, bank branches, ATMs, credit cards, debit cards, SWIFT, IBAN, Master Cards, etc. (Chilukuri et al., 2016). Both empirical and theoretical studies emphasize that financial access fosters an entrepreneurial spirit among a nation's people. An inclusive financial system yields both micro and macro benefits for businesses and households. On a macro scale, it promotes a formal financial system, aiding governments in tracking illegal money and increasing tax collection. Moreover, an inclusive financial system can contribute to reducing organized crimes such as corruption, illegal arms trade, financing for terrorism, and trafficking. On a micro scale, benefits include access to credits and microfinance, which elevate individuals' income levels, cover education expenses, and reduce future opportunity costs. This underscores the idea that micro or macro-level access and availability of financial resources can impact human health, education, and income, highlighting a direct or indirect relationship with the level of human well-being (Ali & Ahmad, 2014; Ali & Rehman, 2015; Ali & Bibi, 2017).

Literature often provides different definitions of human development, but a common agreement is that it entails the expansion of people's choices, increasing abilities, and overall functioning (UNDP, 1990; Pranab, 2005; Coase, 1960; North, 1990). Inequality of income is correlated with higher dropout rates from schools, reduced government spending on education, and lower literacy rates. Additionally, income inequality contributes to the influence of the elite in society. The ruling elite may resist widespread education, fearing that an educated populace might demand income redistribution and political rights (Sajid & Ali, 2018). Consequently, budgets for mass education could remain lower (Acemoglu & Robinson, 2005; Ali & Senturk, 2019). It is evident that the human capital development of societies and regions is adversely affected by the unequal distribution of economic resources (Easterly, 2001). More egalitarian societies with less ethnic diversity, defined as a 'middle-class consensus,' exhibit better education, health, infrastructure, economic policies, political stability, fewer instances of civil war, increased safety for ethnic minorities, more social modernization, and greater democracy. Inequality of income demonstrates a negative association with human capital. Not only do rich individuals have a higher standard of living than their less affluent counterparts, but they also tend to enjoy longer and healthier lives. The poor are often 'liquidity-constrained from accumulating human capital,' and high levels of inequality mean a larger portion of the population will face liquidity constraints, resulting in less accumulation of human capital (Pedersen and Rendtorff, 2010; Olson et al., 2000; Tamilina and Tamilina, 2014; Audi & Ali, 2017; Ashraf & Ali, 2017).

An extensive review of the literature reveals that human well-being remains a prominent topic of discussion among researchers and policymakers. Different studies (Anand and Sen, 2000; Tridico, 2007; Fukuda-Parr and Kumar, 2009; Rode, 2013; Wicher, 2014; Eggoh et al., 2015; Teixeira and Queirós, 2016; Audi & Ali, 2016) have presented diverse measures of human well-being, and for this study, we have chosen the Human Development Index of the UNDP as a measure.

Several studies (Asteriou and Agiomirgianakis, 2001; Sow, 2014; Spruk and Kešeljević, 2016) have established links between various socioeconomic factors and human well-being. A substantial body of knowledge (Ahsan and Oberoi, 2003; Kumssa and Mbeche, 2004; Pranab, 2005; Vollmer and Ziegler, 2009; Casson et al., 2010; Acemoglu and Johnson, 2015; Balcerzak and Pietrzak, 2016; Senturk & Ali, 2021; Mehmood et al., 2022; Ali et al., 2023) underscores the importance of institutions and financial inclusion in the process of economic development. However, there still exists a gap in connecting financial inclusion with human well-being, particularly in the case of South Asian nations.

2. The Model

Traditionally, per capita GDP and aggregate GDP have been commonly used as proxies for the economic development and well-being of a nation. However, various researchers (Hicks and Streeten, 1979) have criticized GDP and GDP per capita due to their limitations as development criteria. While income plays a significant role in determining the quality of life for the masses, it is not a straightforward measurement of development. Human beings are the ultimate focus of all development activities and policies. Development should be linked to the enhancement of people's capabilities, but GDP has a narrow scope as a measure of development and human well-being, often neglecting crucial socio-economic conditions within a society (Anand and Sen, 2000). According to Nussbaum (2000) and Sen (1985), development goes beyond mere economic growth. Development represents the end goal of policies and activities, whereas economic growth is solely concerned with improving per capita GDP and fails to explain the distribution pattern of GDP among the members of a nation. A country might experience significant growth in GDP per capita and overall GDP but still have less development due to unequal income distribution. Consequently, the benefits of GDP per capita and GDP growth may disproportionately reach the wealthier sections of the country, leaving the poor with limited advantages. These studies highlight that GDP is not the sole source of well-being; it does not serve as the ultimate end for humans in all development activities. Development is a broad concept that focuses on 'what people can do and be.' The literature underscores the crucial difference between ends for humans and means for humans. Development seeks to improve the lives of individuals and is associated with the eradication of societal ills such as child mortality, under-nutrition, and hunger in general.

Subsequently, numerous alternative methods and measurements have been proposed by various authors and institutions. The International Labor Organization (ILO, 1977) was among the first to introduce the basic needs approach, recommending factors primarily linked to essential needs such as food, shelter, clothing, water, and sanitation as measurements of economic development. Morris (1979) introduced the concept of the Physical Quality of Life Index as a development measurement. This index gauges the degree of development for a nation by incorporating literacy, life expectancy, and infant mortality. It is based on two vital dimensions of human life: health and education. However, this measure neglects another crucial dimension of human life, namely income, which plays a pivotal role in determining the standard of living. The United Nations Development Program (UNDP, 1990) proposed the Human Development Index (HDI) as a measure of economic development in its inaugural Human Development Report. HDI is developed by considering all three vital dimensions of human life: decent living, health, and knowledge.

The concept of human well-being in economic and social sciences is not new. Numerous empirical and theoretical studies discuss the measurement and determinants of human well-being. Smith (1776) emphasized the importance of an efficient labor force in determining a nation's economic growth. He advocated for government intervention to provide better education and health to enhance the efficiency of the labor force. Following Smith, many classical economists underscored the significance of human well-being (Grampp, 1948; Black, 1953; Tu, 1969; Robbins, 1978). While classical economists began examining the role of health facilities, public policy, and institutions in economic progress, they often overlooked their impact on human well-being. In the 20th century, with the emergence of neoclassical economics and the development of economic growth models, the focus shifted to the roles of human and physical capital in the process of economic growth (Mincer, 1984; Pablo-Romero and Gómez-Calero, 2013; Ogujiuba and Adeniyi, 2005; Gong and Wang, 2012; Li et al., 2015). Neoclassical economists highlighted the complex relationship between cultural and political values in advancing human well-being (Konstantinov, 1982).

With the emergence of SDGs, human well-being has become the central focus of all socioeconomic and financial policies. Human well-being, in this context, encompasses better education, improved health, and access to essential resources. The significance of these resources lies not only in their quantity but also in the ability to consume and the capability to participate, as highlighted by Sen (1992). The ability to consume and participate plays a crucial role in determining the level of human well-being, as they enable societies to invest in education and healthcare. Furthermore, the ability to participate in social activities is significantly influenced by the available financial resources of a country. The standard of living, a key aspect of well-being, shows a positive correlation with education, healthcare, preschool daycares, and housing subsidies, while demonstrating a negative relation with poverty. Traditional policymakers tend to focus on income as a measure of well-being, often neglecting factors such as health and education (McGillivray and Clarke 2006). To provide a more comprehensive representation of human well-being, this study will utilize the Human Development Index (HDI) of the United Nations Development Program (UNDP) as a proxy for human well-being in South Asian nations. The methodology employed in this study will follow that of Ali & Rehman (2015), Ali (2015), Audi et al., (2022), Ali & Audi (2023) and Audi & Ali (2023). The functional form of the model is as follows:

$$HWB_{it}=f(FINI_{it}, VA_{it}, HF_{it}, GINI_{it}, EDF_{it}, CC_{it}, UN_{it}) \tag{1}$$

where: HWB= Human wellbeing (measured with the help of HDI); FINI= Financial inclusion (measured by Principle Component Analysis with ATM, Credit cards, Debit cards, etc.); VA= Voice & accountability; HF= Health facilities (number of hospitals, nurses, beds, doctors, etc., An index will be constructed with the help of Principle Component Analysis); GINI= income inequality; EDF= Education facilities (number of schools, teachers, colleges, universities, etc. An index will be constructed with the help of Principle Component Analysis); CC= level of corruption; UN= unemployment rate; I = selected "South Asian countries (Pakistan, India, Sri Lanaka, Bangladesh)"; t = selected time period (1996 to 2020)

For estimating the coefficients, econometric model can be written as:

$$HWB_{it}= \alpha +\beta_1 FINI_{it} + \beta_2 VA_{it} + \beta_3 HF_{it} + \beta_4 GINI_{it} + \beta_5 EDF_{it} + \beta_6 CC_{it} + \beta_7 UN_{it}+\varepsilon_{it} \tag{2}$$

where notations in equation 3.2 have been explained except following: α= intercept coefficient; $\beta_{i's}$= slope coefficient; ε= error term (supposed to be white noise)

This study is based on secondary data for 1996 to 2020, and the data of selected variables have been collected from "World Development Indicators" databases maintained by World Bank, International Labor Organization databases, Heritage Foundation databases, United Nation Development Program (UNDP) databases, and Freedom house databases.

3. Empirical Results and Discussion

This section of the study presents the results and discussion. The results are organized into descriptive statistics, a correlation matrix, unit root tests, long-run results of ARDL, short-run results of ARDL, and diagnostic tests. The intertemporal properties of the selected variables' data have been examined using descriptive statistics. Mean, median, maximum, minimum, standard deviation, skewness, kurtosis, and Jarque-Bera tests were employed to analyze all variables in the model. Descriptive statistics are also useful for testing the normality of the data. The overall findings of Table 1 reveal that human well-being, financial inclusion, income inequality, corruption, and the unemployment rate exhibit positive skewness, whereas voice & accountability, health facilities, and education facilities show negative skewness. All selected variables display positive kurtosis. The values of skewness and kurtosis explain that all variables follow a normal distribution. The estimated Jarque-Bera values indicate that all variables have a zero mean and finite covariance, confirming their normal distribution.

Table 1. Descriptive statistics

Variables	HWB	FINI	VA	HF	GINI	EDF	CC	UN
Mean	0.576920	54.95100	0.545183	0.521233	33.92132	0.545464	0.397083	4.400800
Median	0.551000	54.95000	0.500000	0.500000	33.97000	0.568182	0.416667	4.335000
Maximum	0.782000	66.00000	0.833333	0.750000	49.10000	0.772727	0.666667	11.35000
Minimum	0.426000	44.20000	0.000000	0.166667	23.80000	0.181818	0.166667	0.400000
Std. Dev.	0.104848	4.262368	0.211113	0.130251	4.038145	0.122912	0.102483	2.316318
Skewness	0.551925	0.310736	-0.347435	-0.224744	0.152949	-0.742399	0.457017	0.189707
Kurtosis	2.118578	3.317747	2.797162	2.540116	4.044682	3.163154	3.710590	3.383696

Variables	HWB	FINI	VA	HF	GINI	EDF	CC	UN
Jarque-Bera	8.314125	2.029956	2.183285	1.723052	4.937227	9.296853	5.584984	1.213242
Sum	57.69200	5495.100	54.51833	52.12333	3392.132	54.54636	39.70833	440.0800
Sum Sq. Dev.	1.088319	1798.610	4.412294	1.679570	1614.355	1.495621	1.039774	531.1675
Observations	100	100	100	100	100	100	100	100

The results of the correlation between the variables are presented in Table 2. The pairwise correlation results indicate that human well-being, as a dependent variable, has a positive and significant correlation with most of the explanatory variables, except for voice & accountability and health facilities. The correlation matrix results reveal that most of the selected explanatory variables exhibit a significant correlation with each other. However, this correlational relationship is not excessively high, mitigating concerns of multicollinearity. Therefore, there is no issue of multicollinearity among the selected explanatory variables.

Table 2. Correlation matrix

Variables	HWB	FINI	VA	HF	GINI	EDF	CC	UN
HWB	1							
FINI	0.6265***	1						
VA	0.14905	-0.1792*	1					
HF	0.0218	0.08145	0.5443***	1				
GINI	0.2847***	-0.1568	0.3271***	-0.0494	1			
EDF	0.4842***	0.2917***	0.4723***	0.2879***	0.2644***	1		
CC	0.3735***	0.3764***	0.2789***	0.142030	0.1187	0.1654*	1	
UN	0.5426***	0.3462***	0.5920***	0.22144**	0.2107**	0.4624***	0.6424***	1

Note: The asterisks ***, ** and * denote the significant at 1%, 5% and 10% levels, respectively.

As a panel data study, this research employed unit root tests, including Levin, Lin & Chu t*, ADF - Fisher Chi-square, Im, Pesaran and Shin W-stat, and PP Fisher Chi-square, to investigate the issue of stationarity in the data. The results are presented in Table 3. The findings reveal a mixed order of integration among the selected variables of the model, which is a suitable condition for applying the panel ARDL co-integration approach.

Table 3. Unit Root outcomes

Variables/ Methods	Levin-Lin-Chu t*	Im-Pesaran-Shin-W-stat	ADF–Fisher-Chi-square	PP-Fisher-Chi-square
At I(0)				
HD	-1.75602**	1.13036	7.56204	11.1733
EF	-1.08522	-1.14040	14.6459*	17.6568**
VA	-1.28054	-1.54424	14.8591	9.08995
RL	-0.38243	-1.43872	15.8816	18.3178
GINI	-1.36072*	-3.56053***	28.0889***	46.9800***
RQ	-1.00864	-2.02760**	17.6813**	15.6805*
CC	-1.97921**	-1.90780**	17.7344**	9.19808
UN	-0.07841	0.04877	10.5110	10.2786
At I(1)				
dHD	-2.99578***	-2.67378***	21.8173***	40.0983***
dEF	-5.13752***	-6.14896***	48.5801***	135.058***
dVA	-6.57905***	-5.10376***	40.1006***	46.1403***
dRL	-4.84634***	-4.20564***	28.2866***	31.4171***
dGINI	-7.14181***	-9.41343***	76.1956***	197.993***
dRQ	-6.22748***	-7.03425***	56.2396***	60.9429***
dCC	-2.59415***	-3.07706***	17.0773***	19.4262***
dUN	-6.33437***	-6.03005***	49.8117***	51.8199***

Note: The asterisks ***, ** and * denote the significant at 1%, 5% and 10% levels, respectively.

The estimated long-run and short-run results, as presented in Table 4, provide valuable insights into the relationship between financial inclusion and human well-being. Financial inclusion, which empowers individuals to make informed choices regarding their interests and benefits (Miller et al., 2006), has been a subject of examination in various studies investigating its impact on the well-being of the masses (Nandru et al., 2021; Audi et al., 2019; Sharan and Dale, 2019). Our estimated coefficient for financial inclusion reveals a positive and significant relationship with human well-being. Specifically, the results indicate that a 1% increase in financial inclusion corresponds to a (0.4256) percent increase in human well-being, and this relationship is statistically significant at a 5% level. This finding underscores the pivotal role of financial inclusion in allowing individuals to exercise control over their property and financial matters, ultimately contributing to the overall well-being of the economy. In developed nations, where individuals often have ample resources to maintain their living standards and access better education and healthcare facilities, the positive impact of financial inclusion on human well-being is particularly pronounced (Ul Haq, 1995; Anand and Sen, 2000; Welzel et al., 2003). These results align with the broader literature highlighting the crucial role of financial inclusion in fostering societal progress and individual well-being.

Institutions play a crucial role in determining the level of the cost of exchange in the production process, as outlined by Williamson (1975). The quality of institutions ensures smooth and efficient human relations, reducing costs associated with uncertainty during the exchange and production processes. The estimated coefficient indicates that a 1% increase in voice & accountability leads to a significant (-19.4602) percent decrease in human well-being at the 1% significance level. This result explains that an increase in voices or dissent negatively impacts income, health, and education (Oliff et al., 2012; Karanikolos et al., 2013; Orza et al., 2015). Therefore, to enhance the level of human well-being, it is imperative to promote fewer voices and greater accountability (Zhou and George, 2001). This underscores the importance of fostering a conducive environment where institutions encourage transparency, accountability, and a reduction in uncertainties, ultimately contributing to the overall well-being of society.

Institutions, as constraints devised by humans to shape interactions among people, wield executive powers to impose these constraints with proper limitations (Orza et al., 2015). The estimated outcomes indicate that health facilities exert a positive and significant impact on human well-being. The results explain that a 1% increase in health facilities corresponds to a (24.8986) percent increase in human well-being, and this relationship is statistically significant at the 1% level. Health facilities play a crucial role in providing life safety and health equality to each individual, forming the foundation for access to sufficient resources, improved education, and enhanced health conditions (Peerenboom, 2003; Tamanaha, 2004; Grindle, 2007). Income inequality is closely linked to various social and political indicators. In societies where income or wealth is highly concentrated at high levels, a large proportion of the population resides at or near abject poverty, facing limited access to education, food, and medical facilities (Kawachi and Kennedy, 1999). Inequality has adverse effects on education levels and economic growth in developing economies (Deininger & Squire, 1998; Killewald et al., 2017). Inequality can reduce overall human well-being and exacerbate well-being inequalities among different regions and segments of the population (Killewald et al., 2017). However, the estimates in this study show that income inequality has a negative and insignificant impact on human well-being. It is a theoretically accepted notion that less inequality is associated with higher income, improved education, and better health conditions (Kawachi and Kennedy, 1999; Wilkinson and Pickett, 2009; Pickett and Wilkinson, 2015). Yet, in the case of the selected South Asian countries, this relationship is found to be insignificant, explaining that income inequality does not significantly contribute to raising human well-being in these contexts.

The estimated outcomes underscore the positive and significant impact of education facilities on human well-being. The results reveal that a 1% increase in education facilities corresponds to a substantial (29.8010) percent increase in human well-being in the selected South Asian countries. Education facilities play a crucial role in providing information on how governments formulate and promote various levels of education (De Francesco et al., 2012; Castro, 2014). Government policies, influenced by these education facilities, shape employment patterns and determine the availability of health and education resources, ultimately contributing to the enhancement of human well-being (Bronfenbrenner, 1986; Klugman, 1994).

The estimated results highlight that the level of corruption has a negative and significant impact on human well-being in South Asian countries. Specifically, a 1% increase in corruption is associated with a substantial (-32.4929) percent decrease in human well-being. This finding resonates with the challenges faced by developing countries, which are often entangled in the detrimental effects of corruption (Bourguignon, 2001; Bernstein, 2005; Wraith and Simpkins, 2010; Pustu et al., 2019). The pervasive nature of corruption in these countries diminishes the resources allocated by both governments and individuals for creating new employment opportunities and limits

developmental expenditures, particularly in crucial areas like health and education (Mauro, 1996; Gupta et al., 2001; Lewis, 2006). Consequently, this reduction in resources further lowers the overall level of human well-being in developing countries, including those in South Asia. The detrimental impact of corruption on human well-being underscores the importance of anti-corruption measures in fostering sustainable development and improving the quality of life in these regions.

The estimated results reveal that unemployment has a positive and significant impact on human well-being in the selected countries. Specifically, a 1% increase in the unemployment rate is associated with a (2.3055) percent increase in human well-being. Theoretically, one might expect an inverse relationship between the unemployment rate and income, health, and education levels (Brenner and Mooney, 1983; Ettner, 1996; Altindag, 2012). However, in the context of selected South Asian countries, this assumption may not hold due to the unique dynamics in these nations. These countries experience both the highest population growth and a simultaneous increase in income, education, and health conditions. Therefore, the conventional inverse relationship between unemployment and human well-being may not be applicable in the case of selected South Asian countries, given their specific demographic and developmental challenges.

The comprehensive long-run results underscore the significant role of financial inclusion in shaping the level of human well-being in the selected panel of countries. The findings reveal that financial inclusion, along with health facilities and education facilities, exerts a positive and statistically significant impact on human well-being in the context of selected South Asian countries. In contrast, voice & accountability and corruption are identified as factors depressing human well-being in these countries. Financial inclusion's positive influence on human well-being aligns with existing studies that emphasize the role of access to financial resources in fostering socio-economic development and individual well-being (Ul Haq, 1995; Blunt, 1995; Anand and Sen, 2000; Welzel et al., 2003). The provision of financial services, such as banking, credit, and other related resources, can empower individuals and communities, leading to improvements in income levels, education, and health outcomes (Goetz and Jenkins, 2005; Ndikumana, 2006). Moreover, the positive impact of health and education facilities on human well-being resonates with well-established principles. Access to quality healthcare and educational opportunities are foundational elements in enhancing the overall quality of life (Lewis, 2006; Oliff et al., 2012; Karanikolos et al., 2013; Orza et al., 2015). These findings reinforce the notion that investing in health and education infrastructure is crucial for promoting human well-being. On the flip side, the negative impact of voice & accountability and corruption on human well-being is consistent with the understanding that governance and transparency play pivotal roles in shaping the socio-economic landscape (Goetz and Jenkins, 2005; Orza et al., 2015). Countries facing challenges in terms of corruption and inadequate accountability mechanisms may witness adverse effects on their citizens' well-being, as resources are misallocated and trust in public institutions diminishes

The examination of the short-run relationships in this study reveals that, in contrast to the long-run perspective, most of the selected explanatory variables exhibit an insignificant and inverse relationship with the dependent variable. This explains that in the short run, the impact of these variables on human well-being is not as pronounced as in the long run. The short-run dynamics of the relationship between financial inclusion, health facilities, education facilities, voice & accountability, corruption, and human well-being appear to be more muted or exhibit temporary fluctuations. The theoretically correct and negative values of the Error Correction Term (ECT) indicate the presence of cointegration among the variables, underscoring the notion that short-term deviations in human well-being of the selected countries will gradually converge in the long run. The negative and significant values of ECT imply that, on average, it takes approximately twenty-three years and five months for short-term deviations in human well-being to be corrected in the long run. In practical terms, a 4% short-run deviation in human well-being is expected to be rectified in the very next year in the case of selected South Asian countries. This insight into the short-run dynamics adds depth to our understanding of the intricate relationships between the variables under consideration. It explains that while certain factors may not exert an immediate impact on human well-being, their effects become more pronounced and sustained over an extended period, highlighting the importance of considering both short-term and long-term perspectives in policy formulation and decision-making processes.

Table 4. Estimated outcomes

Variables	Long Run Coefficients		Short Run Coefficients	
Dependent Variable: HWB				
	Coefficients	Std. Error	Coefficient	Std. Error
FINI	0.004256***	0.001587	-0.000339	0.000248
VA	-0.194602***	0.053791	0.009640	0.007079
HF	0.248986***	0.058376	-0.016894	0.013984
GINI	-0.000380	0.001116	-0.000396	0.000294
EDF	0.298010***	0.033953	-0.015098**	0.006488
CC	-0.324929***	0.025668	0.025971**	0.009779
UN	0.023055***	0.003127	-0.000219	0.001101
C	-	-	0.014674***	0.002743
ECT	-	-	-0.042409**	0.019037

The diagnostic tests conducted in this study serve to assess the reliability and robustness of the selected variables within the model. The results, as presented in Table 5 and Table 6, offer insights into the validity of the model. In the context of VAR residual heteroskedasticity, the null hypothesis is accepted, indicating homoscedasticity, while the alternative hypothesis, explaining heteroscedasticity, is rejected. This implies that there is no evidence of heteroscedasticity in the model. Homoscedasticity is a desirable property, as it ensures that the variance of the residuals remains constant across all levels of the independent variables, enhancing the reliability of the model's estimates. The LM test for serial correlation indicates that there is no presence of serial correlation in the model. This is a positive outcome, as serial correlation can introduce biases in the coefficient estimates, leading to unreliable results. The absence of serial correlation enhances the credibility of the model's findings, explaining that the residuals are not systematically related over time. Overall, the results of the diagnostic tests provide support for the authenticity of the selected variables in the model. The absence of heteroscedasticity and serial correlation contributes to the reliability and validity of the estimated relationships, strengthening the confidence in the study's findings and their applicability to the selected South Asian countries.

Table 5. Var-Residual-Heteroskedasticity

Sample: 1996-2020 - Null Hypothesis: "there is heteroskedasticity"		
Chi-sq	Df	Prob.
867.3116	784	0.1202

Table 6. Var-Residual-Serial-Correlation-LM-Tests

Sample: 1996-2020 - Null Hypothesis: "no serial correlation at lag order h"		
Lags	LM-Stat	Prob
1	49.48742	0.4537
2	39.48482	0.8322
3	50.21887	0.4249

Note: Probs from chi-square with 49 df.

Conclusions and Policy Suggestions

The main objective of this study is to examine the impact of financial inclusion on human well-being in the case of South Asian countries from 1996 to 2020. Pakistan, India, Sri Lanka, and Bangladesh have been selected for this purpose. Following the objectives of this thesis, the study employs human well-being as a dependent variable, while financial inclusion, voice & accountability, health facilities, income inequality, education facilities, corruption, and unemployment rate are chosen as independent variables. Based on the estimated results and discussion, there are some major conclusions drawn from this study. The results of unit root tests indicate that some variables in the model are stationary at the level, while others are stationary at the first difference. Thus, the unit root tests show a mixed order of integration among the variables of the model. This condition supports the application of the panel autoregressive distributed lag model. The study's results demonstrate that financial inclusion, health facilities, and education facilities have a positive and significant impact on human well-being. The

increase in health and education facilities creates more employment opportunities, contributing to the improvement of income, education, and health status in a nation. This explains that selected South Asian countries should promote health and educational facilities to elevate the level of human well-being. Voice & accountability and corruption exhibit a negative and significant impact on human well-being in the case of selected South Asian countries. Income inequality has a negative but insignificant impact on human well-being, while unemployment has a positive and significant influence on human well-being. The short-run results indicate that convergence is taking place from the short run towards the long run over the specified period in the case of selected South Asian countries.

Based on the estimated results, several policy suggestions are drawn for improving the level of human development in the case of South Asian countries:

- The positive and significant impact of financial inclusion on human well-being in South Asian countries suggests that these nations should actively promote financial inclusion. A higher level of financial inclusion encourages increased business and economic activities, contributing to elevated levels of income, education, and health. Therefore, policies that foster financial inclusion can be instrumental in promoting human well-being in South Asian economies.
- The negative and significant impact of voice & accountability on human well-being implies that efforts should be made to reduce unnecessary noise and enhance accountability. A rise in voices and a lack of accountability can have a depressing effect on human well-being. Therefore, policies aimed at minimizing voice-related disruptions and increasing accountability can contribute to higher levels of human well-being.
- The positive impact of health facilities on human well-being highlights the importance of promoting healthcare infrastructure. Access to quality health facilities enables individuals to achieve higher income levels, attain better education, and maintain good health. To enhance human well-being, it is crucial to invest in and improve health facilities in South Asian countries.
- Improving education facilities is important for achieving a higher level of human well-being in South Asian countries. Education plays a key role in determining income levels, employment opportunities, and overall societal well-being. Policies aimed at enhancing education facilities can contribute to the overall improvement of human well-being.
- The negative and significant impact of corruption on human well-being underscores the need for anti-corruption measures. Corruption in developing countries often diverts crucial developmental expenditures, leading to a decline in aggregate and household spending on education and health. Improving institutional frameworks and reducing corruption can be effective strategies for enhancing human well-being in South Asian countries.

Credit Authorship Contribution Statement:

Amjad Ali was responsible for the conceptualization, methodology and writing of the original draft, while Marc Audi and Marc Poulin was responsible for data collection, writing review and editing. The research and technical analysis were carried out collaboratively, with Marc Audi, Marc Poulin and Amjad Ali contributing equally.

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Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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