



## Trends of Gender Gaps in Nepal: A Statistical Analysis

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### Abstract

*This paper applied two panel data on GII (1996 to 2022), and EFI (1996-2022) to understand the trends of gender gap in Nepal. Recently, UNDP (2023b) has developed GSNI based on data from wave 6 (2010-2014) and wave 7 (2017-2022) of WVS (2023). However, index is not available for Nepal. In this context, this article examined dimensions of WVS by defining gender gap in four thematic areas such as secondary education, representation in parliament, participation in labor force, and life expectancy, suggesting they are associated with ODA and some economic freedom indices.*

**Keywords:** Gender dimension, empowerment, index, regression

### 1. Introduction

Gender and Development (GAD) is the modern term for the study of gender's relationship to development; it started out as Women in Development (WID), moved to Women and Development (WAD), and then underwent significant theoretical changes. With the goal of covering a wider range of subjects and social scientific viewpoints, each of these frameworks evolved from its predecessor (Benería et al., 2016).

Over the past thirty years, proponents of women's health and education have employed diverse notions of women's empowerment concerning sexual and reproductive health. Three or four years prior to the International Conference on Population and Development (ICPD) in Cairo (UN, 1994), these concepts had even started to appear in journal articles. The more widely used word "empowerment" and the definition of autonomy provided in ICPD 1994 para. 4.1 aims to capture comparable aspects of women's situations and are frequently used concurrently (UN, 1994).

Even with several international accords (UN 1994, 1995; among others) recognizing their human rights, women continue to be far more likely than males to be impoverished and illiterate. Compared to males, they typically have fewer access to finance, jobs, training, property rights, and health care. Compared to males, they are much more likely to become victims of domestic abuse and significantly less likely to be politically engaged.

The ICPD Programme of Action emphasized women's empowerment as a means of mitigating gender inequality; nevertheless, adequate scientific understanding of the mechanisms behind gender disparity and other social disparities remains insufficient (Presser, 1997; Sen & Presser, 2000). According to Kabeer (1999, 2005, 2013), women's autonomy, empowerment, and status advancement are significant goals in and of themselves that are necessary to accomplish sustainable development.

## 2. Conceptualization of Women's Empowerment

One of the gender studies theme areas that will be specifically addressed in this paper is empowerment, which is defined in a dictionary as "to enable" or "give power to." Therefore, the definition of "empowerment" depends on our understanding of what power is. The term most social scientists employ is similar to the view of Max Weber (1922). Whatever the basis for this probability may be, power, in his view, is the possibility that one actor in a social connection will be able to carry out his or her own will in the face of opposition.

As the literature has repeatedly pointed out, there is much confusion around the idea of women's "status" or position. Alternative terms that are commonly used interchangeably include "gender inequality," "status of women," "sexual stratification," "female autonomy," "female dependency," and "male dominance" (Mason, 1987).

According to sociological perspectives, women's empowerment is determined by the philosophy of the women's movement, which served as the political platform for these rights advocates. It's a feminist viewpoint. From Butler (1989) to Chodorow (1987) to

Smith (1990), among others, feminism defines the social environment in terms of gendered sentiments, desires, behaviors, social positions, employment, and entire institutions that are deemed acceptable for men or women or masculine or feminine.

### 2.1. National context

Following the fall of the Rana monarchy in 1951, which was autocratic and conservative, Nepal has experienced a significant shift in its social structure. The 'people's movement' (Jana Andolan I) of 1990, 'People's War' of 1996, and the 'people's movement' (Jana Andolan II) of 2006 have further accelerated this pace of change in unprecedented ways resulted in becoming federal republic of Nepal. In addition, global cultural flows are also bringing Nepalese people into increasing contact with the outside world. These recent changes are beginning to transform the conservative Hindu, Buddhist and Muslim traditions that regulated status of women with a corresponding impact on the lives of women. Notwithstanding these changes, Nepalese women still appear to lead traditional lives. They must always be dependent upon a man, be it her father, husband or son. In much of research work in Nepal, the effect of gender is measured at individual level, by adding some parsimonious variables to be indicator of women's status. These measures are rarely culturally specific, which is necessary to understand human behavior, the particular argument that gender is a social construction. Gender discrimination, gender inequality, injustice, and gender based violence are not novel concepts in the history of patriarchal society (Priyanka et al., 2022).

Planned development in Nepal commenced in 1956, with a particular emphasis on women in Development (WID), women and development (WAD), and gender and development (GAD) Since the 1970s. It was not until 1980 that the WAD division was established under the Ministry of Local Developments. In 1982, the Plan of Action for Women in Development was formulated, followed by the introduction of the Production Credit for Rural Women (PCRW) program. In 1990, following the restoration of a multiparty political system, the Government of Nepal (Formerly known as

His Majesty's Government of Nepal) ratified the UN Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) in 1991, without any Reservations. Subsequently, after the Beijing Conference in 1995 (UN 1995), the Ministry of Women and Social Welfare (now known as the Ministry of Women, Children, and Senior Citizens) was established, signifying the Government of Nepal's commitment to eradicating discrimination against women.

Women had limited rights during the early Vedic era, but they were also viewed as naturally occurring, relatively unrestrained human beings who did not need to control their feminine desires and passions. Social ties and moral standards developed, altered, and expanded significantly throughout time. The woman's position was originally seen to be at home, and as a result, she was entirely reliant on males for her subsistence. This applies especially to the wealthiest segments of society. The ordinary woman was remained reliant on her husband, even though impoverished and indigenous women learned practical skills and worked alongside their husbands. Women's contribution to productive labor was decreased and their dependence on men increased as a result of the Aryans' conquest of indigenous people, which allowed them to expand their territory and make many of the heavier chores previously performed by women into slaves. Consequently, a boy is often seen as more valuable than a daughter in virtually all situations. His financial value to the family remains unchanging. He does not, like the daughter, move to a new family after marriage; instead, he remains with his elderly parents. In this way, he continues the family name of his father (Bhattacharji, 1998).

With the territorial expansion of the Aryans through their conquest of indigenous people, the conquered people became slaves and took over many of the heavier chores which women had been performing earlier; this reduced women's contribution to productive labour and enhanced their dependence on men even more. These conditions naturally lead to the situation where a son is valued higher than a daughter almost everywhere. He is the family's ongoing financial asset. He stays with his elderly parents rather than moving in with a new family after marriage, unlike the daughter. Son

perpetuates the name of his father's family and so on. These social and cultural practices gave rise to the 2015 Constitution of Nepal (GoN, 2015) and a number of related discriminatory regulations that violate fundamental human rights and equality principles.

Some anthropologists (Bennett 2002; Gray 1990; Stone 2000) paint vivid images of the conflicted attitudes toward women in terms of "a dual status" of high-caste women based on years of anthropological fieldwork in Nepal. According to the patrifocal paradigm, affinal women—wives and sisters-in-law—are viewed as a danger to the unity of agnatic males and are accorded a low position, with men being superior to women in terms of age. The filiafocal paradigm assigns a higher value to daughters and sisters who are consanguineal, favoring youth over age and wife-takers rank over wife-givers. Nancy Levine articulates cultural models, practical considerations, and kinship theory in an intriguing way in her 1988 book "The Dynamics of Polyandry: Kinship, Domesticity, and Population on the Tibetan Border." She contends that although women are viewed as interchangeable, the inhabitants of Nyinba, a remote Tibetan village in western Nepal's Humla District, have entirely different cultural traditions from those of the high-caste Brahman and Chhetris. The birth of a girl is typically greeted with joy in nonconformist communities where the bride-price tradition is prevalent (Caplan 1970; Fricke 1994; Gurung 1985, Macfarlane 1976). However, anthropologists Ahearn (2000) and Hitchcock (1966) contend that women are socially devalued in another ethnic community, Magar. Regarding the position of women in the Magar society, Hitchcock (1966:42) states that "authority, discipline, deference, self-abnegation, and subordination of women are important values."

Following these research works, researchers in Nepal have looked at the connections between women's education and reproduction (Axinn 1993, Axinn & Barber, 2001, Barber & Axinn 2004, Beutel & Axinn 2002, Stash and Hannum 2001, Subedi, 2006). The focus of these studies was on social transformation within the family as the crucial mediator between macro-level social change and

the impact of gender on educational attainment. The findings suggested that rising levels of education among women should be anticipated to affect fertility patterns, as educated mothers will raise educated families and only giving birth to children that they are certain they can raise to the fullest extent possible.

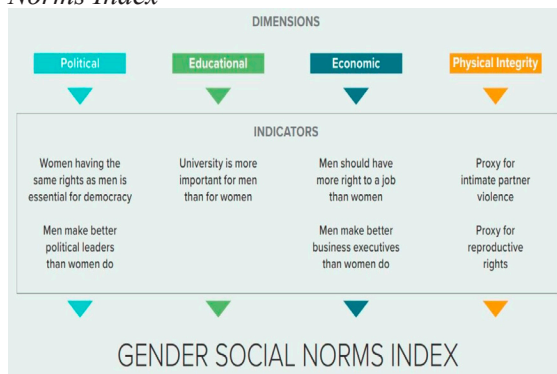
## 2.2. Application of GSNI model

The Gender Inequality Index (GII) has served as a comprehensive measure of gender disparity in empowerment for the UNDP since 1990. The prevailing opposition to women's rights and the enduring consequences of the multifaceted human development challenges triggered by the Covid-19 pandemic have further aggravated the situation. The progress of women's rights has been setback in various regions across the globe, as the forces opposing gender equality have gained momentum. These failures have contributed to a crisis in human development, evident in the decline of the worldwide Human Development Index (HDI) value in 2020, which was followed by another decline the subsequent year (UNDP, 2023a).

World Values Survey (WVS) data (WVS, 2023) is used to generate the GSNI. It focuses on four main areas—political, educational, economic, and physical integrity—to draw attention to instances in which discrimination and systemic disadvantages are faced by women and girls. One or two indicators of women describe each dimension. WVS data are not available for Nepal. Thus, four dimensions (political, educational, economic and physical integrity) will be tested statistically using secondary sources of data. For this purpose, gender gap will be calculated based on GII, fertility rate, gender gap in secondary education (% ages 25 and older), shares of seats in parliament (% held by men and women), labor force participation (% ages 15 years and older), and control variables (economic freedom indices and Official development assistance (ODA) (% of GNI).

**Figure 1**

*Dimensions and Indicators of Gender Social Norms Index*



Source: UNDP (2023:5)

## 3. Data and Method

The study is based on the application of secondary data and past studies (Khatri, 2022). Data on dimensions are from Human Development Report (1996-2022). Economic Freedom Index (EEI), GDI and ODA (% of GNI) (ODA\_GNI) are considered as independent and control variables respectively. Data on EEI (HF, 2023), GDI (FI, 2023) from the Fraser Institute and ODA\_GNI (WB, 2023b) from World Bank (<https://data.worldbank.org/indicator/DT.ODA.ODAT.GN.ZS>)

### 3.1 Kaiser-Meyer-Olkin (KMO) criterion

Kaiser (1970) developed KMO index, originally termed as measure of sampling adequacy (MSA), that indicates how near the inverted correlation matrix  $R^{-1}$  is to a diagonal matrix  $S$  to determine a given correlation matrix's ( $R$ ) suitability for factor analysis. The index is

$$KMO = \frac{\sum_{j \neq k} r_{jk}^2}{\sum_{j \neq k} r_{jk}^2 + \sum_{j \neq k} p_{jk}^2}$$

Where  $r_{jk}$  is the correlation between the variable in the equation and  $p_{jk}$  is the partial correlation. Thus, KMO varies between 0 and 1, with larger values indicating higher suitability for factor analysis. Kaiser and Rice (1974) suggest that if a  $KMO > 0.9$  is marvelous, in the 0.80s, meritorious, in the 0.70s, middling, in the 0.60s, mediocre, in the 0.50s, miserable, and less than 0.5 would be unacceptable (Kaiser & Rice, 1974).

## 4. Results and Discussions

### 4.1 Dimensions of Dependent Variables

Low status limits women's independence and opportunity, preventing them from interacting with others and engaging in independent behavior, preventing the spread of new information, and harming their self-expression and self-esteem.

It is a particularly significant factor in determining two care resources: women's

autonomy and control over household resources, as well as their physical and emotional well-being. Women with low status find it more difficult to behave in their own and their children's best interests. An association exists between the nutritional status of children and the status of mothers (MoHP et al., 2022).

In this article, gender gap is defined by the following indicators, which are regarded as dependent variables (see Table 1).

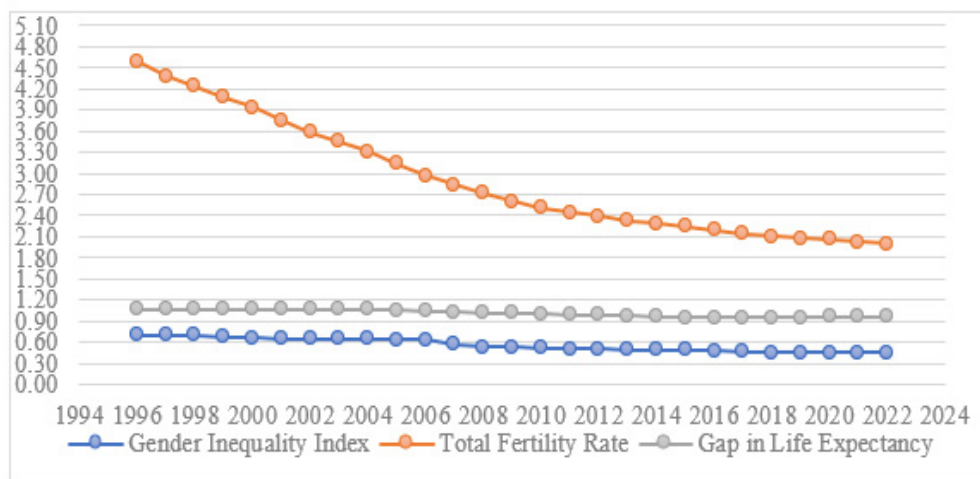
**Table 1**

*Dimensions of Dependent Variables*

Dimension	Indicator	Gender Gap definition
Political	Equal share of seats in parliaments	Ratio of female to male representation in parliament multiplied by sex ratio (PD)
Education	Adult population (aged 25 and older) with at least secondary education	Ratio of female to male multiply by sex ratio (ED)
Economic	Labour force participation (aged 15 and older)	Ratio of female to male multiplied by sex ratio (LD)
Physical Integrity	Reproduction and Health	Higher the fertility rate (TFR) lowers the women's empowerment that reflects in reducing life expectancy at birth (LET)

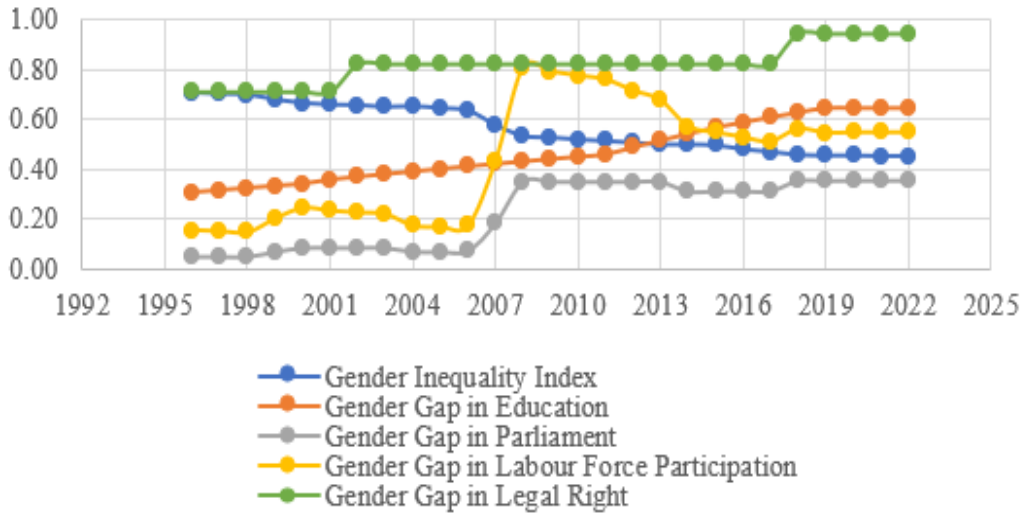
**Figure 2**

*GII, TFR and Gap in Life Expectancy at Birth (1996-2022)*



The GII has decreased slightly during the period of 1996-2022. The TFR has also decreased from 4.60 per woman in 1996 to 2.0 in 2022 per woman (below replacement level). Gap in life expectancy shows that there is a minimum

gap. Those demographic dynamics show that gender gap has been narrowing progressively since 1996.

**Figure 3***Gender Gap (1996-2022)*

Gender inequality has started declining gradually since 1996. In order to understand gender gap four indicators such as education, representation in parliament, labour force participation, legal right and life expectancy are examined statistically. There is no gap between men and women in terms of legal rights. Men's positions are better in three areas such as education, representation in parliament and labour force participation whereas life expectancy is identified better among women. Share of seats in parliament has increased steeply during two constituent assembly elections in 2008 and 2012, and slightly decreased in two federal elections held in 2017 and 2022.

#### 4.2 Control variable: ODA (% of GNI)

The amount of net official development assistance (ODA) per person is determined by dividing the total amount of ODA received by the midyear population estimate. ODA is distributed on a concessional basis (net of principal repayments) and as grants by official agencies of development assistance committee (DAC) members, by multilateral institutions, and by non-DAC nations to support economic development and welfare in nations and territories on the DAC list of ODA recipients. Loans with a minimum grant factor of 25 percent are included (calculated at a 10 percent discount rate). The receiving country's reliance on aid is estimated by the ratio of ODA (% of Gross National Income: GNI) (WB, 2023).

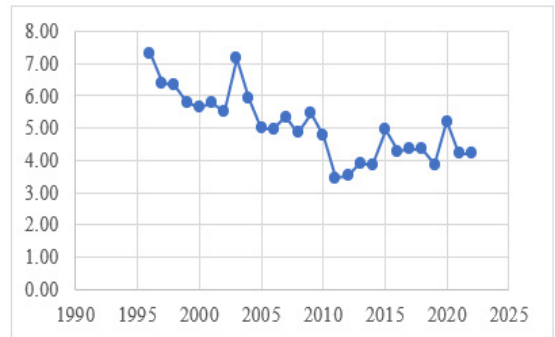
**Figure 4***Contribution of ODA to Gross National Income (GNI) (%)*

Figure 3 represents the percent of ODA which contributes to the GNI, which started declined gradually from 1996 to 2022 with fluctuation.

*Hypothesis 1:* ODA contributes to minimize gender gaps.

#### 4.3 Independent Variable: Economic Freedom

A philosophy of governance that welcomes a wide range of tactics for economic growth while rejecting orthodoxy is the greatest way to understand economic freedom. Excellence and innovation are fostered by the competitive demands of a market that welcomes novel concepts and procedures. According to Heritage Foundation (HF, 2003:10), economic freedom is about individual autonomy, concerned chiefly with the freedom of choice

that individuals enjoy in acquiring and using economic goods and resources.

The article adopted economic freedom measures calculated by the Heritage Foundation (HF, 2023) based on 12 quantitative and qualitative factors, grouped into four broad categories, or pillars, of economic freedom:

- i. Rule of Law (effective judicial system, integrity of government, and property rights)
- ii. Government Size (spending, taxation, and financial stability)
- iii. Regulatory Efficiency (financial, labor, and business freedoms)
- iv. Open Markets (freedom of commerce, finance, and investment)

**Figure 5**

*Economic Freedom*

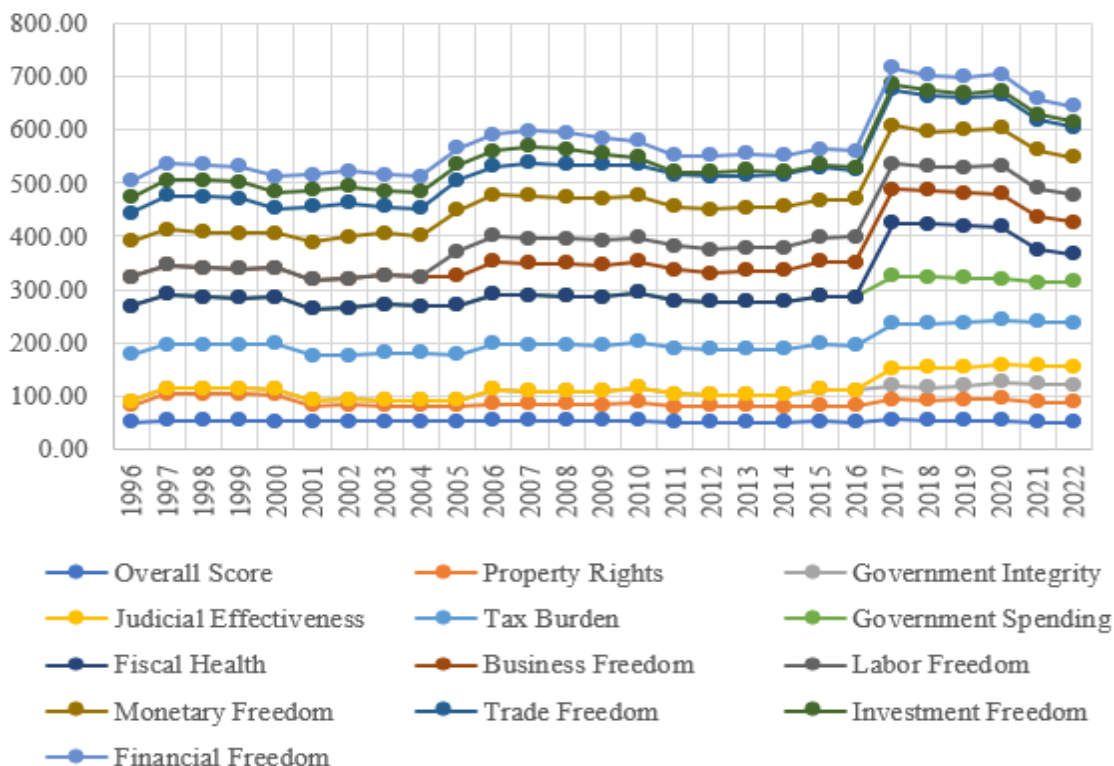


Figure 5 shows 12 dimensions of economic freedom. From 1996 to 2016, most of the dimension have same trend. A scale from 0 to 100 is used to score each of the twelve economic freedom that fall under these categories. All twelve of these economic freedoms are averaged, with equal weight assigned to each, to get a nation's final score. After applying KMO criterion, seven variables (property rights, judicial effectiveness, tax burden, monetary freedom, trade freedom, investment freedom, and financial freedom) are eliminated as these variables have less than 0.5 KMO value.

Another index- The Gender Disparity Index (GDI) is a metric that assesses the extent to which women worldwide possess the same legal rights as men. It serves as a tool to gauge

any disparities in access to economic rights (refer to Figure 3). The GDI incorporates selected measures from the Women, Business, and the Law report (WB, 2023b) by the World Bank, which monitors gender inequality in the legal and regulatory frameworks of 189 countries. However, the GDI focuses solely on laws and regulations directly pertaining to economic rights, encompassing a subset of the comprehensive WB report. In 2018, the Gender Disparity Index encompassed 42 variables derived from the Women Business and the Law report, offering a snapshot of the legal landscape for 2017/2018.

*Hypothesis 2: Economic Freedom Indices reduce the gender gaps.*

### Ordinary Least Squares (OLS) Regression

Ordinary least squares (OLS) linear regression is a statistical technique for examining and simulating linear relationships between a response variable and one or more predictor variables. If the data appears to have a linear relationship between two variables, a straight line can be fitted to the data to model that relationship. For a bivariate regression, the linear equation (or equation for a straight line) has the following form:

$y = \alpha + \beta x + \epsilon$  Where  $x$  is the predictor (independent) variable,  $\alpha$  is the intercept,  $\beta$  is the slope,  $y$  is the response (dependent) variable, and  $\epsilon$  is error. Given the slope and intercept coefficients of the line of best fit, one may use the modeling application of OLS linear regression to forecast the value of the response variable for changing

inputs of the predictor variable (Berry, 1993). R package (Revelle, 2003) is used to analyze the data.

From the examination of Table 2, government integrity is found as a strong variable, which is associated all dependent variables. GDI is associated with GII, TFR, LET, and PD suggesting legal system plays vital role in reducing gender gap. For all variables, the  $p$ -value of 0.000 indicates a statistically significant relationship at the  $p < 0.001$  cut-off level. All coefficients of determination ( $R^2$ ) are above the 80 percent, suggesting independent variables are explained considerably on dependent variables. A similar trend of Nepal is identified after examining the six dimensions of worldwide governance produced by World Bank (2023a).

**Table 2**  
*Outputs of OLS Regression*

Economic Freedom	GII		TFR		LET	
	GII*	ODA	TFR*	ODA	LET*	ODA
Government Integrity	0.0020***	0.0069**	0.0170*	0.0559	0.0308*	0.0371*
Government Spending	0.1076	0.2276	0.0070*	0.0195*	0.0057**	0.0077**
Fiscal Health	0.3163	0.2742	0.4146	0.4201	0.0726	0.5660
Business Freedom	0.0245	0.0989	0.0319*	0.1605	0.3620	0.0822
Labor Freedom	0.4446	0.5263	0.6682	0.8139	0.6234	0.6138
IF	0.1113	0.2129	0.8505	0.4365	.0000***	0.0000***
GDI	0.0023**	0.0077**	0.0002***	0.0005***	.0003***	0.0006***
ODA	-	0.1485	--	0.0303*	-	0.7807
Constant	0.0000***	0.0000***	0.0000***	0.000***	0.000***	0.0004***
RSE	0.0846	0.0819	0.0941	0.0845	0.0562	0.0576
R <sup>2</sup>	0.9593	0.9638	0.9356	0.9507	0.9848	0.9848
F-test: p-value	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***
Economic Freedom	ED		PD		LD	
	ED*	ODA	PD*	ODA	LD*	ODA
Government Integrity	0.0026**	0.0070*	0.0104*	0.0287*	0.1514	0.0010***
Government Spending	0.3964	0.5338	0.0011**	0.0031**	0.7044	0.0073*
Fiscal Health	0.2695	0.2661	0.7566	0.7193	0.8289	0.2008
Business Freedom	0.0314*	0.0803	0.0223*	0.0774	0.0827	0.1941
Labor Freedom	0.3288	0.3728	0.8188	0.7313	0.4683	0.7616
IF	0.1479	0.2193	0.8382	0.2358	0.0140*	0.0199*
GDI	0.6024	0.7714	0.1257	0.2490	0.0006***	0.0014**
ODA	-	0.5181	-	0.2757	-	0.9847
Constant	0.5323	0.4047	0.0000***	0.0028**	0.1274	0.1874
RSE	0.1927	0.1926	0.1484	0.1474	0.1464	0.1504
R <sup>2</sup>	0.8499	0.8534	0.8618	0.8709	0.8509	0.8509
F-test: p-value	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***	0.0000***

\* Excludes ODA, LET= Life Expectancy



The degree of government involvement in the policies and the level of gender discrimination are directly correlated. Effectively functioning government integrity minimizes a discrimination form of gender inequality. This is probably going to have a significant effect on the economy as a whole. The systemic discrimination of government institutions through nepotism, cronyism, favoritism,

## 5. Conclusion

This paper brought into discussion on the trends of women's status using panel data (1996-2022) and applied the latest model developed by UNDP. Government integrity is connected to economic development of individual primarily that shapes the level of women's empowerment. There is a gradual improvement towards women's empowerment that is consistent with the findings of Nepal demographic and health periodic surveys.

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