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Article

Relation between corruption, institutional trust, and subjective well-being: An empirical analysis

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Abstract: This study aims to examine the mediating role of institutional trust (IT) between perceived corruption and subjective well-being (SWB) using data from 1566 households in a developing country. It deploys ordinary least square (OLS) and an ordered logit model within the generalized structural equation model. Results show that individuals who perceived no corruption in a country report more IT and higher levels of SWB. Furthermore, the direct effects of good governance, perceived IT, and the absence of corruption on SWB is also positive. Moreover, satisfaction with hospital services also improves happiness and life satisfaction levels. This study improves and validates how corruption is assessed to support future measures that reduce its harmful effects. Moreover, the masses must have widespread awareness about the critical nature of corruption and IT relative to well-being. This study also highlights the need to develop strong institutions to improve trust and minimize corruption.

Keywords: corruption; government effectiveness; institutional trust; happiness; life satisfaction; life worthwhile; generalized structural equation model (GSEM)
JEL Classification: D3; B15; I31

1. Introduction

Corruption (COR), defined as the abuse of public authority for personal benefit, significantly affects one's perception of it more than their direct experience of it because of its covert nature (Morris and Klesner, 2010). Such perception has profound implications for a country's economic stability and political landscape, undermining public confidence and inducing societal stress. High COR levels deter foreign investments, stifle economic growth, and cause political unrest while exacerbating social inequalities (Pellegata and Memoli, 2016; Spyromitros and Panagiotidis, 2022). Economic prosperity relies on effective public institutions, whose keystone of success is public confidence. Households and businesses that distrust essential services such as the police or the judiciary may resort to informal solutions to resolve disputes or address security concerns, underscoring the importance of trustworthy institutions (Clausen et al., 2011).

Since the 1990s, civil society, policymakers, and international development agencies have engaged in a growing advocacy to improve public trust in institutions where COR has had detrimental effects. Not only does COR perception undermine

institutional trust (IT) by limiting access to public services and reducing wealth, but it also adversely affects individual well-being, leading to illness, discomfort, depression, and shame (Habibov et al., 2021). However, studies have largely overlooked the critical role of IT as a mediator in this relation, particularly in the context of Pakistan.

Accountability, transparency, openness, and equitable treatment are fundamental principles for the effective operation of institutions and the overall health of societies, and deviating from these can trigger widespread dissent and a legitimacy crisis (Gilley, 2009). In addition, allocating public resources based on corrupt practices erodes IT and damages the socioeconomic fabric of society. Sustainable Development Goal 16 of the United Nations emphasizes the importance of promoting peace, justice, and strong institutions to reduce COR, criminal networks, and other harmful entities, fostering an inclusive society (Escap and HIV/AIDS, 2024).

IT varies depending on how it is applied but generally refers to the confidence in public institutions to act in the public interest, follow rules, and conduct themselves responsibly (Putnam, 1994). Higher IT creates a predictable and stable environment that is conducive to social cohesion and citizen cooperation (Levi and Stoker, 2000). Studies have presented extensive evidence pointing to IT as a critical factor that influences individual happiness and life satisfaction (LS) (Rose-Ackerman and Palifka, 2016).

COR has been a major concern in Pakistan, eroding IT among the population. Institutional quality is an important indicator that helps policymakers analyze the effectiveness of the rule of law, efficiency, and extent of COR. Unfortunately, despite efforts to control COR, no significant improvement has taken place in the past few years, which continues to undermine IT. Research has found that a high degree of perceived corruption (PC) leads to reduced happiness and subjective well-being (SWB) in the country (Bjornskov et al., 2008, 2010). Studies have suggested a significant link between IT and people's SWB (Habibov et al., 2021; León et al., 2013; Li and An, 2020). Furthermore, Nizeyumukiza et al. (2020) argued that this relation is valid, albeit weak, even in developing countries. However, only a few studies involving primary data have examined the association between IT and SWB. Recently, Danish and Nawaz's (2022) study in Pakistan shed light on the role of IT and government quality in SWB.

An individual's SWB is significantly influenced by their perception of IT and COR (Lee, 2022; Salameh et al., 2022). Research has indicated that higher PC directly diminishes SWB by fostering feelings of uncertainty, stress, and injustice (Tay et al., 2014). Meanwhile, when individuals perceive institutions as trustworthy, they tend to report higher levels of happiness, life-satisfaction (LS), and a sense that their life is worthwhile (LW) (Gomez-Balcacer et al., 2023). This correlation suggests that IT's mediating role is critical in understanding the full impact of COR on SWB, especially in contexts where public institutions play a central role in daily life (Ma et al., 2022).

The theoretical framework connecting PC, IT, and SWB is grounded in social capital theory and the psychological well-being model. Social capital theory posits that social networks, reciprocity norms, and trust in institutions contribute to societal and individual performance (Putnam, 1994). In this context, IT functions as a form of social capital that enhances community cohesion and collective action, which are essential for promoting SWB (Putnam, 1994). Meanwhile, the psychological well-

being model argues that trust in institutions reduces anxiety and uncertainty about the future, creating a stable, conducive environment for mental health and, consequently, higher SWB (Diener, 2000). This theoretical model illustrates how COR erodes IT, negatively affecting the individuals' psychological state and reducing their overall SWB.

Many Asian countries continue to suffer from institutional problems including COR, poor legal and judicial systems, and limited democratic involvement. These issues can affect how institutions operate effectively and address citizens' needs and concerns. Pakistan has also faced the same problems in the last few decades of its social and political transformation, during which COR has ingrained itself as a significant and rooted problem in its governance system. Transparency International (Index, 2022) reported that Pakistan ranked 140th out of 180 countries in its Corruption Perception Index, falling 23 spots in the same index in the last five years. Moreover, Pakistan ranks 121st out of 146 countries in the Happiness Index, dropping by 56 rank points in the 2018–2019 period (Helliwell et al., 2022).

Despite the significant effect of COR on society, studies on the relation between PC, IT, and SWB have been inadequate. Researchers have observed either the direct impact of COR on institutions and political trust or the effect of IT on well-being (Clausen et al., 2011; Habibov et al., 2017; Morris and Klesner, 2010; Nizeyumukiza et al., 2020; Pellegata and Memoli, 2016). In Pakistan, little effort has been made to examine the association between happiness and institutional quality. In addition, only a few studies have measured the direct effect of COR and IT on SWB. Recently, Danish and Nawaz (2022) investigated the effect of IT on well-being, while other studies, such as Danish and Khan (2020) and Salameh et al. (2022) considered PC and IT as determinants of SWB in Pakistan. In these works, understanding the extent to which SWB is affected by trust in institutions and the role played by PC in this connection is crucial. Several studies have observed that SWB is associated with a higher degree of IT. For instance, Lee (2022) found that trust in government institutions and police positively affects SWB in China. Similarly, Serikbayeva and Abdulla (2022) found that trust in institutions and government is positively linked with SWB in Kazakhstan.

While studies have examined COR, IT, and SWB in the context of developed countries, similar research in the context of developing or underdeveloped countries has been scant. Moreover, scholars have yet to investigate the relation between PC and SWB via the mediating role of IT. Therefore, the mediating role of IT in the relation between PC and SWB must be analyzed, especially in a developing country such as Pakistan. Therefore, this study aims to examine the complex relation between COR, IT, and SWB using primary data from Pakistan. Using ordered logit and ordinary least square (OLS) models within a generalized structural equation model (GSEM) framework, this study explores the degree to which IT mediates the relation between PC and SWB, providing insights into well-being enhancement through institutional reforms. This analysis is critical for informing policy that promotes institutional integrity and well-being in developing countries. Because of self-funding and time limitations, this study is limited to cross-sectional data.

Section 2 highlights recent and relevant literature, while section 3 describes the data and methodology. Section 4 examines and discusses the data. Section 5 explains the results. Finally, section 6 concludes the study as well as clarifies its limitations.

2. Literature review

Varying degrees of happiness and LS across countries are profoundly shaped by their social institutional structures. Those with robust and stable political institutions play a crucial role in redistributing economic and political power, facilitating market access, education, and investment opportunities that enhance social well-being. Studies have indicated that a nation's SWB is significantly linked to its political, economic, and judicial frameworks. For instance, higher trust in the police has been shown to increase national pleasure and satisfaction (Helliwell and Putnam, 2004).

Research has highlighted the negative effect of the detrimental effects of COR due to loss of social trust and IT (Ciziceno and Travaglino, 2019). The highest levels of PC are associated with the lowest levels of SWB (Rothstein, 2010). Data from underdeveloped countries have also demonstrated a positive link between IT and SWB (Nizeyumukiza et al., 2020). Ciziceno and Travaglino (2019) used MENA country data to investigate the relation between PC, IT, and LS and found that higher PC is associated with lower IT and decreased LS.

IT refers to the trust that people have in public institutions, and it is considered an essential factor in modern democracies (Hakhverdian and Mayne, 2012). This includes trust in the government, police, judiciary, media, and other public agencies. IT is critical to a society's smooth functioning and governance. Without it, people may be less likely to comply with laws or participate in public affairs, which may lead to COR, political instability, and social unrest. Meanwhile, reduced perceptions of COR improve trust in institutions (Andriani and Loaiza, 2021; Clausen et al., 2011).

Higher PC levels decrease trust in various societal institutions, including financial entities, political parties, and governments (Habibov et al., 2019). Conversely, Altindag and Xu (2011) found that regardless of a country's income, lower COR levels are linked to greater life happiness. Hakhverdian and Mayne (2012) examined the moderating effects of COR and education on political trust across 21 European democracies and observed that while education reduces political trust in more corrupt nations, it enhances political trust in less corrupt ones. Similarly, Kubbe (2013) reported a positive correlation between lower degrees of COR and IT in Europe.

In developing countries such as Pakistan, COR impedes development and happiness through the reduction of economic opportunities and the diversion of public funds for personal use, which decreases SWB (León et al., 2013). In such contexts, COR prevalence is linked to lower happiness levels and satisfaction (Ciziceno and Travaglino, 2019). Arvin and Lew (2014) provided substantial evidence indicating that in developed nations, PC and happiness are negatively correlated, a trend not observed in developing countries.

Studies have also observed that COR significantly affects psychological health and well-being. Notably, COR has a profound impact on mental health that is more significant among females in Vietnam (Sharma et al., 2021). The literature indicates a

positive relation between IT, better government quality, and access to public goods as well as a higher motivation to pay more taxes (Habibov et al., 2019). These factors contribute to individuals' and countries' economic prosperity, which can ultimately enhance SWB at both individual and societal levels. Serikbayeva and Abdulla (2022) found that high government performance improves access to public goods and services, which then increases IT as well as citizens' satisfaction with their lives in Kazakhstan (Serikbayeva and Abdulla, 2022). Current studies lack substantial empirical evidence regarding the relation between well-being and COR through the mediating factor of IT, specifically within the Pakistani context. Hence, building upon relevant research, this study establishes the following framework (**Figure 1**):

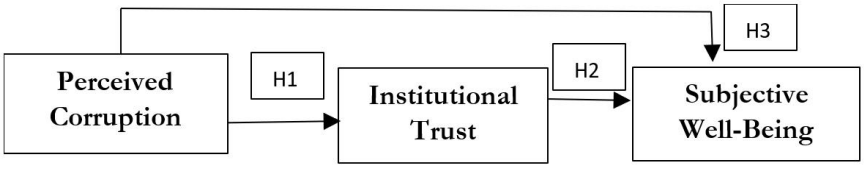

Figure 1. Conceptual framework for the link between perceived corruption, institutional trust, and subjective well-being.

Research on the direct relation between PC and IT is extensive, with significant contributions (Andriani and Loaiza, 2021; Beesley and Hawkins, 2022; Clausen et al., 2011). Similarly, Helliwell and Putnam (2004), Tay et al. (2014), and Nizeyumukiza et al. (2020) have documented the effects of COR on SWB. Moreover, the direct link between IT and SWB has been explored by Jovanovic (2016), Ciziceno and Travaglino (2019), and Danish and Nawaz (2022). However, empirical research on the relations among COR, IT, and SWB remains insufficient. Studies have consistently found that COR undermines trust in public institutions and diminishes individual happiness and LS. Therefore, this study aims to address both theoretical and empirical gaps by applying a GSEM to explore the mediating role of IT between PC and SWB. It will test the following hypotheses to build the models in the following sections:

- H1: PC has a negative and significant influence on IT.
- H2: Institutional quality mediates the relation between PC and SWB.
- H3: Perceived institutional quality positively and significantly improves SWB.
- H4: PC erodes SWB.

3. Methods and materials

A total of 1566 households from Pakistan's largest (population-wise) province, Punjab, were randomly interviewed using a structured questionnaire. Four major districts from Southern, Northern, and Central Punjab were selected according to the 2017–2018 census. These districts were further divided into tehsils, and data from each tehsil were collected according to population proportion. One member from each household was chosen as a representative. Out of the total sample, 74% were male, and 26% were female. Questions included personal and demographic information, income, education, perceived and evaluative measures of IT, government effectiveness, COR, and self-reported health.

A standardized IT index was used as a mediator, while SWB was an ordinal outcome. A GSEM was also employed to determine the direct and indirect effects of PC on IT and SWB. The GSEM can include latent and observed variables as it can deal with ordinal data and the level of observed variables, which the SEM usually cannot (Rabe-Hesketh et al., 2004).

$$IT_i^* = \beta_0 + \beta_1 Corruption_i^* + \beta_2 GEI._i^* + \mu_i \ldots \quad (1)$$

$$SWB_i^* = \beta_0 + \beta_1 Corruption_i^* + \beta_2 GEI._i^* + \beta_3 i.IT_i^* + \beta_4 SRH_i^* + \beta_5 i.SWH_i^* + \beta_7 i.Education_i^* + \beta_7 i.Income_i^* + \omega_i \ldots \quad (2)$$

where SWB_i* indicates the measure of three SWB indicators (i.e., happiness, LS, and life worthiness, LW), IT_i* is an outcome of the standardized institutional quality index involving three factors (i.e., police, judiciary, and public institutions), GEI refers to the government effectiveness index, SRH pertains to self-reported health, and SWH indicates satisfaction with hospital services (Equation (1)). The full model is also illustrated in **Figure 2**. The mediating variable (IT) consists of limited continuous values in the outcome, and SWB contains an ordinal outcome; therefore, the GSEM framework is used to address the variables (Muthén, 1984). The GSEM has multiple features that the SEM cannot capture. For example, it allows outcome variables with multiple responses including binary, continuous, and ordinal data. The GSEM also allows both latent and observed variables (Cameron and Trivedi, 2005). This study used STATA 15 for the descriptive and GSEM analyses.

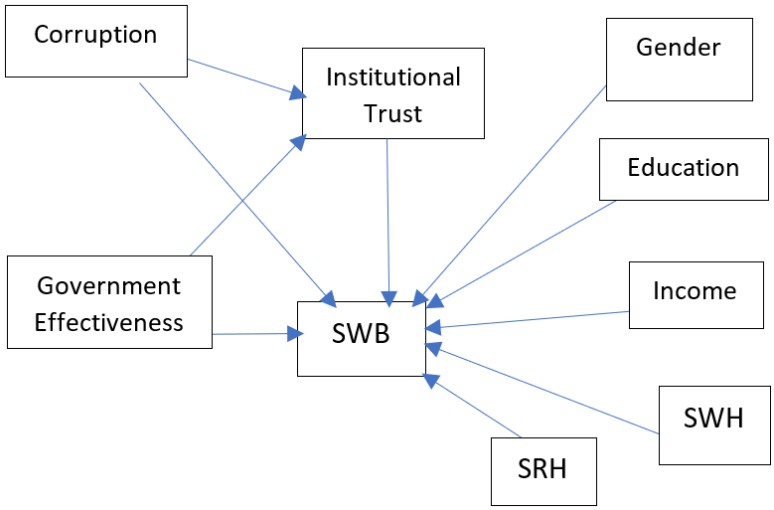

Figure 2. Model framework.

Note: SWB: Subjective Wellbeing; SWH: Satisfaction with Hospital Services; SRH: Self-reported Health.

3.1. Variables and measures

3.1.1. Institutional quality and subjective well-being (dependent variables)

The outcome variables were institutional quality and SWB (happiness, LS, and LW). This study employed three SWB measures using one question for each: (i) "How happy are you with your life?" (0—not at all happy, 10—completely happy); (ii) "How satisfied are you with your life?" (0—not at all satisfied, 10—completely satisfied);

and (iii) "How worthwhile do you feel your life is?" (0—not at all worthwhile, 10—completely worthwhile). Research has shown that SWB is typically measured through an individual's cognitive assessment of LS and emotional evaluation, which economists and psychologists often refer to as "happiness" (Helliwell, 2006; Lenzen and Cummins, 2013). However, this study also includes the less commonly used measurement of SWB through worthwhile life in addition to LS and happiness. This approach is based on Deeming (2013), who suggested separate SWB measures: "evaluation measure" (LS), "evaluative measure" (happiness), and "eudemonic measure" (LW).

PC and government effectiveness strongly influence institutional quality and SWB (Altindag and Xu, 2011; Andriani and Loaiza, 2021; Ciziceno and Travaglino, 2019). The participants evaluated the government's performance over the past 12 months in eight areas of perceived government effectiveness: education, health services, environment protection, job creation, wealth gap reduction, anticorruption efforts, infrastructure and road development, and electricity and gas supply. These items were graded on a five-point Likert scale (1—"extremely poor", 5—"very good"). Through principal component analysis (PCA) and factor loadings, an index of perceived government effectiveness was created to examine the impact of government effectiveness on perceived IT and SWB.

The World Values Survey employs a four-point Likert scale to measure trust in institutions (1—not at all, 4—very much) to measure perceived trust in the police, judiciary, and public institutions. After factor loading in SPSS, standardized z-score values for each observation were generated, and an institutional quality (IT) index was established using PCA.

COR perception affects SWB as it erodes trust in political and public institutions (Kubbe, 2013; Pellegata and Memoli, 2016). PC was measured by asking respondents if the government has been involved in COR during the past 12 months (no—0, yes—1).

3.1.2. Independent variables

To evaluate the respondents' SRH, they reported their health status on a Likert scale from 1 (very good) to 5 (very poor). This measurement of SRH aligns with studies and has been widely used (Blanchflower and Oswald, 2008; Brown and Gray, 2016). Similarly, a five-point Likert scale was used to assess the satisfaction of respondents or their family members with hospitals, considering personnel skills and courtesy, cleanliness, and treatment. The scale ranged from "not at all satisfied" to "completely satisfied". Afterward, z-score values were calculated for each observation using PCA.

3.1.3. Income and demographics

Income was computed by dividing the total family income from all sources and dividing it by the square root of family members following Aristei and Bracalente (2011) and Decancq and Lugo's (2013) method. Age was grouped into five and will be explained in the results section. Additionally, males were coded as 1 and females 0. Education was found to have a significant effect on SWB across countries (Ngoo et al., 2015). This study considered nine education levels, consistent with the global

education system and cultural differences. Employment status was classified into five, with full-time employment serving as the reference category.

4. Results and discussion

4.1. Descriptive analysis

Table 1 shows the descriptive analysis of the sample. More than 48% of the respondents were dissatisfied with the judicial system, and almost 50% showed a lack of trust and dissatisfaction with public institutions. Moreover, 75% were dissatisfied with the police department, while only 3% showed satisfaction with the police, which was the institution with the least trust. In addition, 84.2% of respondents reported PC by public and government departments. Approximately 56% belonged to the lower-income group, 19% to the middle-income group, and the remaining 25% to the upper-income group. Also, 47% of the respondents were between 18–35 years old, and 31% were 45 years or older. Moreover, 31% had education up to matriculation, 11% had a college education, and 58% had a university education. Data showed that almost 52% of the respondents are employed full time, 20% were self-employed, and 14.3% were either unemployed or housewives. The mean values of happiness, LS, and LW were between 6.5 and 6.85.

Table 1. Descriptive analysis.

Variables	Freq.	% of Sample	Variables	Freq.	% of Sample
Gender			***Perceived Health (SRH)***		
Male	1162	74.20	Very Good	384	24.50
Female	404	25.80	Good	681	43.50
Age (years)			Fair	382	24.40
Up to 25	221	14.10	Poor	90	5.70
26 to 35	527	33.70	Very Poor	29	1.90
36 to 45	331	21.10	***Employment***		
46 to 55	341	21.80	Full-Time	821	52.40
55 or more	146	9.30	Part-Time	135	8.60
Education			Self-Employed	313	20.00
No Formal Education	71	4.50	Retired	73	4.70
Primary or below	82	5.20	Unemployed/Housewife	224	14.30
Secondary	115	7.30	***Income level (PKR)***		
Matric	219	14.00	up to 15000	334	21.30
Intermediate	174	11.10	15001–30000	540	34.50
Bachelor	311	19.90	30001–45000	302	19.30
Masters	403	25.70	45001–60000	138	8.80
MPhil or above	160	10.20	> 60000	252	16.1
Others (Certifications)	31	2.00	***PC***		
			Yes	1318	84.20
			No	248	15.80

Table 1. (*Continued*).

Variables	Freq.	% of Sample	Variables	Freq.	% of Sample
	Mean	***SD***	***Min.***	***Max.***	
Happiness	6.58	2.54	0	10	
LS	6.84	2.33	0	10	
LW	6.70	2.45	0	10	
Corruption	1.158	0.365	1	2	
IT	0	1	−1.678	2.298	
GEI	0	1	−1.749	1.783	
Income Level	2.639	1.342	1	5	
Education	5.474	1.968	1	9	
Health status	2.169	0.926	1	5	
SWH	0	1	−2.226	1.365	

Note: SRH: Self-reported health; PC: Perceived Corruption; LS: Life-satisfaction; LW: Life-worthwhile; IT: Institutional Trust; GEI: Government Effectiveness Index; SWH: Satisfaction with hospital services.
Source: Authors' calculations using STATA 15.

4.2. Multivariate analysis

4.2.1. Corruption, governance, institutional trust, and subjective well-being

This study examined how IT mediates the relation between PC and SWB. Regarding the first analysis stage, **Figures 3**–**5** show the results without control variables, in which PC and government effectiveness were independent variables. IT was also a mediator, while happiness, LS, and LW were dependent variables.

Results showed that individuals who perceived no COR increased their trust in institutions by 0.43 standard deviation ($\beta = 0.43$, $p < 0.01$), which supports H1 and rejects the null hypothesis of the negative relation between PC and IT. Also, an improvement of one standard deviation in the effectiveness of the government resulted in a 0.20-point increase in the level of trust in institutions.

GSEM results showed that higher IT leads to an increase in the level of happiness by odds of 0.26 (**Figure 3**), LS by odds of 0.23 (**Figure 4**), and LW by odds of 0.21 (**Figure 5**), and all results were statistically significant at the 1% level ($p < 0.01$), confirming H3. Moreover, IT played a significant role as a mediator between COR and SWB. Our results demonstrate that IT increases happiness by odds of 1.18 (**Figure 3**) as well as LS and LW by odds of 1.17 (**Figures 4** and **5**), which confirms H2. **Figures 6**–**8** show the results regarding the direct paths from COR to SWB and government effectiveness to SWB.

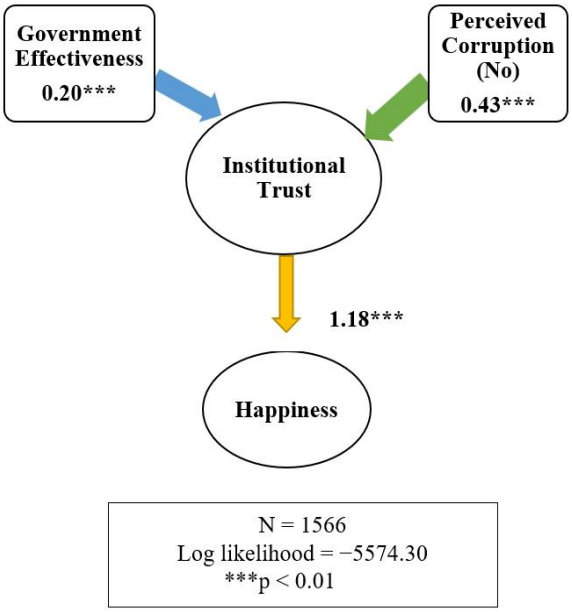

Figure 3. Results for corruption, governance, institutional trust, and happiness.

Source: Author's own calculations.

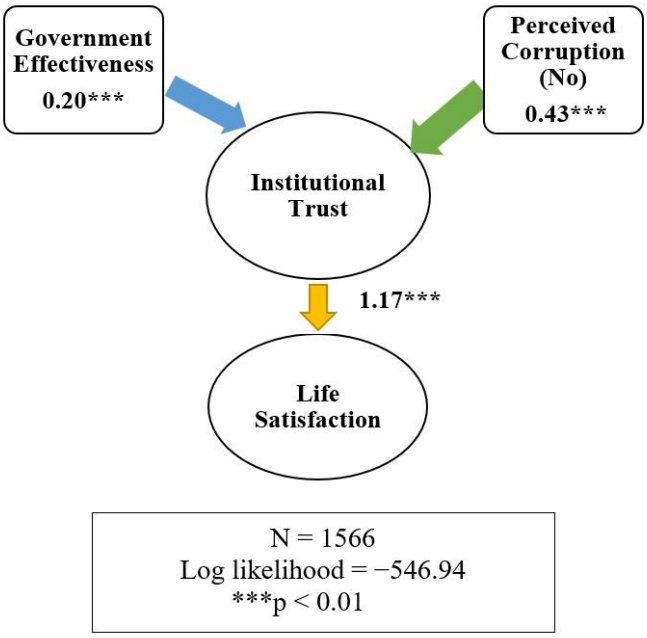

Figure 4. Results for corruption, governance, institutional trust, and life satisfaction.

Source: Author's own calculations.

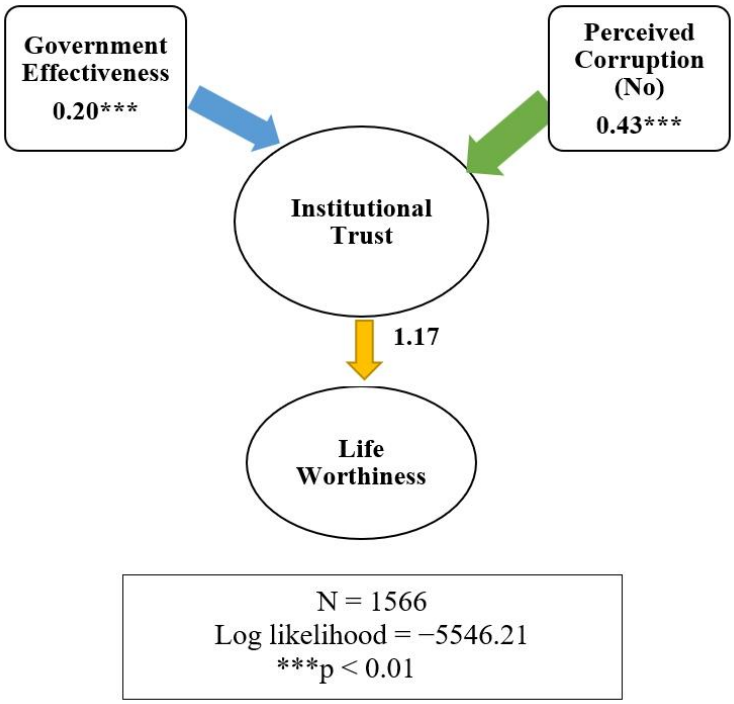

Figure 5. Results for corruption, governance, institutional trust, and life worthiness.
Source: Author's own calculations.

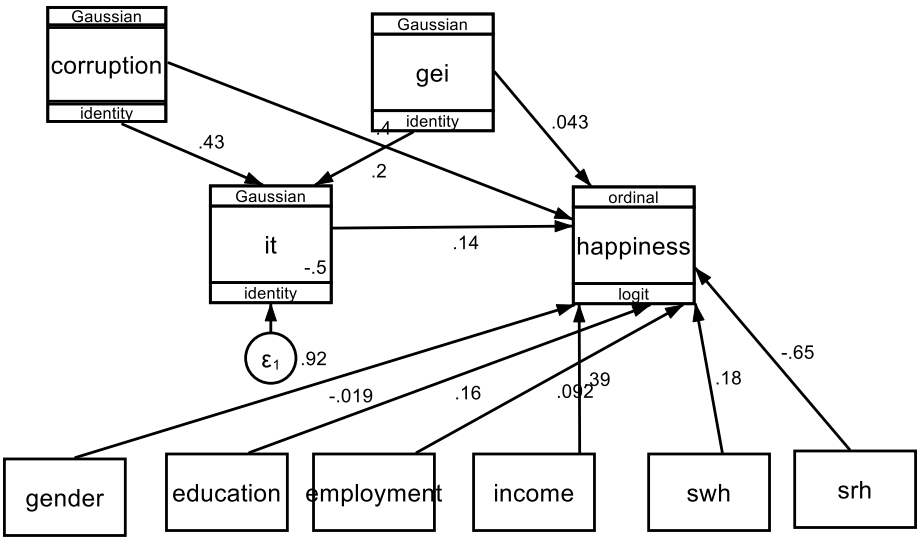

Figure 6. Path analysis for the happiness model.

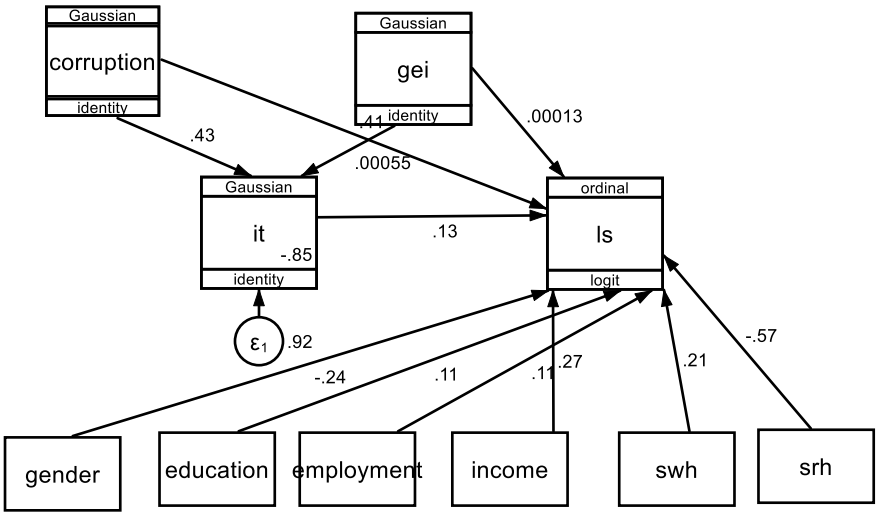

Figure 7. Path analysis for the life satisfaction model.

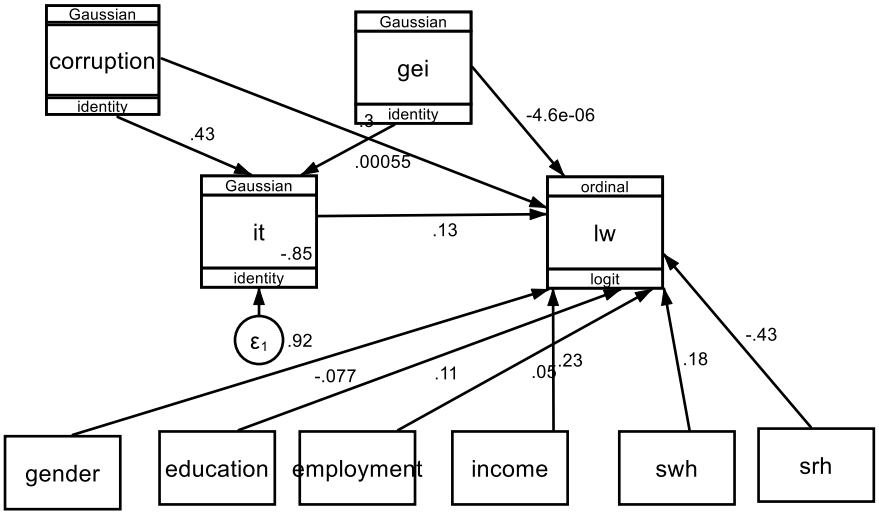

Figure 8. Path analysis for the life worthiness model.

Table 2 shows the results of the control variables with the structural model of COR, IT, and SWB. A slight change was observed in the odds ratio of the mediating variable (IT) in the relation among dependent variables (happiness, LS, LW), but the results remained consistent with the hypothesis and the literature. IT was a vital mediator between COR and SWB, and government effectiveness and SWB. Strong IT also increased happiness and LW by odds of 1.14 and LS by odds of 1.12. People who perceived no COR in their countries have reported higher levels of IT, which also increases SWB in our model. The absence of PC increases happiness by odds of 1.56, LS by odds of 1.53, and LW by odds of 1.40 at the 1% significance level ($p < 0.01$), supporting H4. Finally, the direct impact of government effectiveness was also positive on all SWB measures, but this relation was not significant.

Table 2. Structural model of corruption, institutional trust, and subjective well-being.

VARIABLES	(1)	(2)	(3)	(4)
	IT	**Happiness**	**LS**	**LW**
Corruption: No	0.4288***	1.5551***	1.5269***	1.3956***
	(0.0676)	(0.1966)	(0.1939)	(0.1771)
IT	-	1.1357***	1.1233**	1.1390***
		(0.0536)	(0.0530)	(0.0535)
Government Effectiveness	0.2021***	1.0269	1.0466	0.9960
	(0.0247)	(0.0480)	(0.0484)	(0.0461)
Income (PKR)				
15001–30000		2.4496***	1.7340***	1.8374***
		(0.3363)	(0.2359)	(0.2496)
30001–45000		3.0823***	2.0812***	2.1085***
		(0.4940)	(0.3282)	(0.3289)
45001–60000		5.1682***	3.2406***	2.7642***
		(1.0189)	(0.6313)	(0.5313)
> 60000		5.3385***	3.1491***	2.7765***
		(0.9352)	(0.5430)	(0.4743)
Education				
Primary or below		0.9680	1.4090	1.2226
		(0.2790)	(0.4127)	(0.3603)
Up to Secondary		0.9577	1.7924**	1.0311
		(0.2614)	(0.4967)	(0.2860)
Up to Matric		1.6380**	1.9265***	1.7388**
		(0.4093)	(0.4859)	(0.4397)
Up to Intermediate		2.0987***	2.6972***	1.7339**
		(0.5483)	(0.7118)	(0.4567)
Up to Bachelor		1.9399***	2.3607***	1.5850*
		(0.4828)	(0.5947)	(0.3973)
Up to Masters		2.1662***	2.3783***	1.9048**
		(0.5480)	(0.6091)	(0.4860)
Above Masters		2.0957***	2.1166***	1.8199**
		(0.5771)	(0.5913)	(0.5091)
Certification/ Engineer/Medical		3.6719***	5.3910***	4.9978***
		(1.4158)	(2.1104)	(1.9971)
Perceived Health				
Good		0.4908***	0.4459***	0.5158***
		(0.0579)	(0.0529)	(0.0606)
Fair		0.2400***	0.2698***	0.3598***
		(0.0326)	(0.0367)	(0.0479)
Poor		0.1565***	0.1955***	0.2538***
		(0.0352)	(0.0446)	(0.0564)
Very Poor		0.0694***	0.1059***	0.2386***
		(0.0254)	(0.0392)	(0.0885)

Table 2. (*Continued*).

VARIABLES	(1)	(2)	(3)	(4)
	IT	**Happiness**	**LS**	**LW**
Satisfaction from Hospital Services		1.1930***	1.2261***	1.1863***
		(0.0550)	(0.0558)	(0.0544)
Gender: Female		1.1548	0.9085	1.0652
		(0.1348)	(0.1064)	(0.1230)
Employment				
Part-Time		0.5372***	0.7017**	0.7387*
		(0.0884)	(0.1174)	(0.1269)
Self-Employed		1.3253**	1.1987	1.2863**
		(0.1678)	(0.1498)	(0.1604)
Retired		1.1442	1.5543*	1.0316
		(0.2682)	(0.3670)	(0.2414)
Unemployed		1.1978	1.3391*	1.0541
		(0.1795)	(0.2024)	(0.1592)
Constant	−0.0679***			
	(0.0265)			
Observations	1566	1566	1566	1566
Log-Likelihood		−5341.366	−5308.675	−5431.957
Wald Chi-Square		156.29***	154.46***	148.61***

Note: The GSEM method was applied. OLS was applied to the mediating variable, while the order logit model was applied to happiness, LS, and LW. Coefficient values are reported in column 2, and odds ratios are presented in the results from C3 to C5, while S.E. is reported in parentheses. *** denotes significance at 1% ($p < 0.01$), ** denotes significance at 5% ($p < 0.05$), * denotes significance at 10% ($p < 0.1$).
Source: Author's own calculations.

Income, education, and satisfaction with hospital services were also positively associated with every SWB measure. The results showed that happiness increases by odds of 5.34 at the upper income level (> 60,000 PKR) than at the lower level (< 15,000 PKR). LS also increased by odds of 3.15 at the upper level than the reference category (< 15,000 PKR), while LW increased by odds of 2.78 in the upper-income group than the base category.

Education was positively and significantly associated with happiness, LS, and LW from matriculation to higher education. Individuals with at least 18 years of education reported more happiness and LS by odds of 2 and LW by odds of 1.82 than those with no education. Moreover, individuals with certification (chartered accountancy/engineers/medical doctors) reported more happiness, LS, and LW by odds of 1.57, 3.27, and 3.18, respectively, than those with 18 years of qualification or more.

People who reported having extremely poor health were likely to show low levels of happiness, LS, and LW by odds of 0.93, 0.89, and 0.76, respectively, than those who reported being in considerably good health. In addition, people who also visited hospitals during their illness and showed satisfaction with hospital services were likely to exhibit more happiness, LS, and LW at a 1% significance level. Finally, self-employed respondents showed more happiness and LW than full-time employed

respondents at the 5% significance level ($p < 0.05$). Finally, while females reported more happiness and LW, this relation was not statistically significant. Based on the results of the Wald chi-square, the null hypothesis was not rejected, and variables significantly contributed to model goodness of fit.

4.2.2. Robustness check

Robustness analysis using the order logit (ologit) model is presented in **Table 3**, in which the SWB measures were directly regressed over independent variables without using any mediation. The direct effects of PC and IT were significantly associated with happiness, LS, and LW.

Table 3. Ologit regression for the relation between perceived corruption, institutional trust, and subjective well-being.

	(1)	**(2)**	**(3)**
Variables	**Happiness**	**LS**	**LW**
Corruption: No	1.5551***	1.5269***	1.3956***
	(0.1966)	(0.1939)	(0.1771)
Government Effectiveness	1.0269	1.0466	0.9960
	(0.0480)	(0.0484)	(0.0461)
IT	1.1357***	1.1233**	1.1390***
	(0.0536)	(0.0530)	(0.0535)
Income (PKR)			
15001–30000	2.4496***	1.7340***	1.8374***
	(0.3363)	(0.2359)	(0.2496)
30001–45000	3.0823***	2.0812***	2.1085***
	(0.4940)	(0.3282)	(0.3289)
45001–60000	5.1682***	3.2406***	2.7642***
	(1.0189)	(0.6313)	(0.5313)
> 60000	5.3385***	3.1491***	2.7765***
	(0.9352)	(0.5430)	(0.4743)
Education			
Primary or below	0.9680	1.4090	1.2226
	(0.2790)	(0.4127)	(0.3603)
Up to secondary	0.9577	1.7924**	1.0311
	(0.2614)	(0.4967)	(0.2860)
Up to matric	1.6380**	1.9265***	1.7388**
	(0.4093)	(0.4859)	(0.4397)
Up to intermediate	2.0987***	2.6972***	1.7339**
	(0.5483)	(0.7118)	(0.4567)
Up to bachelor	1.9399***	2.3607***	1.5850*
	(0.4828)	(0.5947)	(0.3973)
Up to master's	2.1662***	2.3783***	1.9048**
	(0.5480)	(0.6091)	(0.4860)
Above master's	2.0957***	2.1166***	1.8199**
	(0.5771)	(0.5913)	(0.5091)
Certification/ engineer/medical	3.6719***	5.3910***	4.9978***
	(1.4158)	(2.1104)	(1.9971)

Table 3. (*Continued*).

	(1)	(2)	(3)
Variables	**Happiness**	**LS**	**LW**
Perceived Health			
Good	0.4908***	0.4459***	0.5158***
	(0.0579)	(0.0529)	(0.0606)
Fair	0.2400***	0.2698***	0.3598***
	(0.0326)	(0.0367)	(0.0479)
Poor	0.1565***	0.1955***	0.2538***
	(0.0352)	(0.0446)	(0.0564)
Very poor	0.0694***	0.1059***	0.2386***
	(0.0254)	(0.0392)	(0.0885)
Satisfaction with Hospital Services	1.1930***	1.2261***	1.1863***
	(0.0550)	(0.0558)	(0.0544)
Gender: Female	1.1548	0.9085	1.0652
	(0.1348)	(0.1064)	(0.1230)
Employment			
Part-time	0.5372***	0.7017**	0.7387*
	(0.0884)	(0.1174)	(0.1269)
Self-employed	1.3253**	1.1987	1.2863**
	(0.1678)	(0.1498)	(0.1604)
Retired	1.1442	1.5543*	1.0316
	(0.2682)	(0.3670)	(0.2414)
Unemployed	1.1978	1.3391*	1.0541
	(0.1795)	(0.2024)	(0.1592)
Observations	1566	1566	1566
Log likelihood	−3168.49	−3141.83	−3268.51
LR chi^2	544.87***	372.54***	268.04***
Pseudo R^2	0.0792	0.0560	0.0394

Note: Coefficient values are reported in column 2, and odds ratios are presented in the results from C3 to C5, while S.E. is reported in parentheses. *** denotes significance at 1% ($p < 0.01$), ** denotes significance at 5% ($p < 0.05$), * denotes significance at 10% ($p < 0.1$).
Source: Author's own calculations.

5. Discussion

This study examined the intricate relation between PC, IT, and SWB in a developing country context, focusing on household data from Pakistan. The results highlighted that PC significantly erodes IT, which in turn negatively affects SWB. Conversely, good governance and higher IT positively influenced SWB indicators such as happiness, LS, and the sense that life is worthwhile. These findings were consistent with evidence that PC diminishes public confidence in institutions and reduces satisfaction with national and local governments (Clausen et al., 2011; Habibov et al., 2019).

This study also confirmed the hypothesis that PC has a negative and significant influence on IT ($\beta = 0.43$, $p < 0.01$), which was consistent with Clausen et al. (2011) and Habibov et al. (2019), who found that higher COR levels decrease public

confidence in institutions and reduce satisfaction with national and local governments. COR involvement among institutions creates a disconnect between public expectations and the justice system. People think that they have no access to public goods, and they will have the right to favor money and strong connections. As a result, institutes lose their integrity and trust among the public. Good governance emerged as a critical factor that enhances IT, with a one-standard-deviation increase resulting in a 0.20-point rise in trust levels ($\beta = 0.20$, $p < 0.01$). This finding corroborates research indicating that effective governance fosters economic management and combats COR, therefore increasing trust in central government institutions (Habibov et al., 2019; Kim and Voorhees, 2011). Good governance fosters accountability, fairness, and transparency, which are directly linked to the effective and efficient utilization of public resources. Fairness and efficiency reduce conflict of interest between the public and access to services, which also fosters IT.

IT significantly mediated the relation between PC, government effectiveness, and SWB. Higher IT was correlated with increased happiness (odds of 1.14), LS (odds of 1.12), and LW (odds of 1.21), all significant at the 1% level ($p < 0.01$), validating the hypothesis that IT enhances SWB by providing a stable and predictable environment conducive to social cohesion and individual happiness (Helliwell and Putnam, 2004; Tay et al., 2014). This was also consistent with the findings of Li and An (2020), who demonstrated that higher IT mitigates the negative impact of COR on well-being. Higher levels of happiness and well-being were correlated with trust in institutions such as public services, legal systems, and governments. Lower stress levels and greater happiness result from reduced fear of crime and anxiety about economic instability due to trust in law enforcement and financial institutions, respectively. Moreover, the perception of fairness also fostered LS when people perceived that they had equal rights to opportunities.

The direct impact of PC on SWB is strong, with PC reducing happiness (odds of 1.56), LS (odds of 1.53), and LW (odds of 1.40) at the 1% significance level ($p < 0.01$). This was aligned with Tay et al. (2014), who observed that COR fosters feelings of uncertainty, stress, and injustice, which then diminishes SWB. Moreover, good governance had a positive effect on SWB although the direct relation was not statistically significant in all measures, highlighting the complex interplay between governance quality and individual perceptions (Tay et al., 2014). These findings were supported by Gómez-Balcácer et al. (2023), who emphasized the crucial role of institutional quality in enhancing LS and overall well-being. COR has a detrimental effect on people's quality of life as public resources are directed toward dishonest people, leading to inefficiencies, inequality, and mistrust. This further results in restricted access to quality education, healthcare services, and affordable housing, which lowers the standard of living and SWB.

Income and education also had a significant influence on SWB. Higher-income groups reported greater happiness, LS, and LW than lower-income groups. For instance, individuals earning more than 60,000 PKR reported higher odds of happiness (5.34), LS (3.15), and LW (2.78) than those earning below 15,000 PKR. Similarly, higher educational attainment was positively correlated with increased well-being. Individuals with certifications and engineering or medical qualifications reported significantly higher happiness, LS, and LW than those who lack formal education.

These findings were consistent with literature indicating a positive relation between income, education, and well-being (Chen, 2012; Magazzino and Leogrande, 2021; Ngamaba, 2017). Additionally, the World Happiness Report (2020) reiterated that education and income are strong predictors of well-being across different contexts, supporting the current results (Helliwell et al., 2020).

Health status profoundly affected SWB, with individuals who reported extremely poor health experiencing lower levels of happiness, LS, and LW than those who reported extremely good health. This finding was consistent with Ferreira et al. (2013), who observed that good health is a crucial determinant of emotional and psychological well-being. Additionally, individuals satisfied with hospital services reported higher levels of happiness, LS, and LW, highlighting the importance of quality healthcare in promoting well-being. These results were also aligned with Sharma et al. (2021), who explored the significant impact of health status on well-being in Vietnam, further emphasizing the global relevance of these findings.

The present findings underscore the critical need for policy interventions that reduce COR and enhance IT. Governments and public agencies should prioritize transparency, accountability, and responsiveness to build public trust. Additionally, widespread awareness campaigns about the detrimental effects of COR and the importance of IT are essential to improving societal well-being. The government must also digitize all public institutional systems and provide the public with online access to visualize the performance of institutions. In addition, the government must promote ethical training among employees in the public sector and enforce a code of conduct and accountability. These policies will not only reduce COR but also enhance trust in institutions. IT and government effectiveness can also be better through an efficient and equitable justice system. Enforcing the rule of law and social equality and fairness ensure that everyone has equal access to opportunities, which reduces mental stress and raises their level of happiness. These policy implications are consistent with recommendations for enhancing governance and public trust to improve societal outcomes (Helliwell and Putnam, 2004; Tay et al., 2014). Further, Panao (2021) emphasized the relevance of robust anticorruption frameworks in fostering investment and enhancing societal well-being, supporting this study's policy suggestions.

This study has several strengths, including its large and diverse sample size and application of robust statistical methods, such as the GSEM and OLS regression, to analyze data. These methods promote a comprehensive understanding of the complex relations between COR, IT, and SWB. The primary data collected from Pakistani households provide valuable insights into the local context, which is often underrepresented in global studies on COR and well-being. Happiness and LS are global psychological phenomena that are associated with different socioeconomic patterns that follow universal principles. Therefore, the current results can be considered to be representative of other nations.

However, because the participants were randomly selected from different provinces and demographically represent Pakistan's overall population in terms of age, gender, marital status, and income level, generalization to other countries is not recommended. One important fact that is universal but has variations across countries is that key variables are influenced by a country's socioeconomic and institutional characteristics. Nonetheless, the results might be applicable if other similarities can be

observed between Pakistan and other countries regarding income, economic, or the urban–rural context. Finally, the sample largely represents other countries to some extent depending on context and commonalities.

The interplay between PC, IT, and SWB is complex and multifaceted. This study empirically showed that reducing COR and enhancing IT are vital for improving individual and societal well-being. By fostering good governance practices and promoting public confidence in institutions, policymakers can significantly improve quality of life in developing countries. This conclusion is consistent with the broader literature on the importance of institutional quality and public trust in fostering societal well-being.

6. Conclusion

This study has empirically validated the claim that PC not only deters trust in institutions such as the judiciary, police, and other public governing bodies but also reduces level of happiness, LS, and LW. It has presented empirical evidence that reducing COR and enhancing IT are critical for enhancing individual and societal well-being. Creating good governance practices and promoting public confidence in institutions allow policymakers to significantly improve quality of life in developing countries. This research also strengthens the knowledge base on the relevance of institutional quality and public trust in promoting societal well-being. Addressing PC and improving IT are crucial for enhancing happiness, LS, and societal well-being. To build and maintain trust, governments and public agencies must prioritize transparency, accountability, and responsiveness; to this end, media discussions and strict anticorruption laws are essential steps. This study contributes to the literature in that it examines the mediating role of IT between PC and SWB unlike other studies that only focused on the direct impact of COR and governance on happiness and LS. This study is also unique in its methodology, establishing the GSEM in the ologit and OLS framework. It has several limitations, including its focus on a single region and reliance on self-reported measures of COR and well-being. Future research should consider extracting longitudinal data across different regions and countries to validate these findings. Furthermore, exploring the effects of COR and IT on psychological and physical health outcomes could allow for a better understanding of the interactions between these factors and SWB. Studies should also expand these findings using broader datasets and explore how COR and governance affect psychological and physical health. Longitudinal datasets from World Values Surveys and national happiness surveys can also be used to test this relation in broader contexts. Moreover, this study is limited to a mediation analysis; future studies can use both the mediator and moderator in their investigations.

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Conflict of interest: The authors declare no conflict of interest.

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