

**Original Article**



# Promote or Inhibit? How Do Post-Materialistic Values Influence Chinese Corrupt Behavior?

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## Abstract:

The influence of different cultural values on corrupt behavior can be observed. To examine the impact of post-materialistic values on preferences for corrupt behavior and its underlying mechanism, this study employs a fixed-effect model to investigate the relationship between post-materialistic values and corrupt behavior using data from the World View Survey (1990-2018) in the context of evolving Chinese societal values. Additionally, an intermediary effect model is utilized to estimate how liberal values (perception of social justice, tolerance towards non-mainstream behavior, and democratic preference) mediate these relationships. The empirical findings reveal a distinct 'U-shaped' association between post-materialistic values and preferences for corrupt behavior. Post-materialistic values have a suppressive effect on corrupt behavior up to a certain threshold; however, beyond that threshold, they tend to promote preferences for corruption. These results validate the applicability of post-materialistic theory across diverse cultural contexts and offer novel insights into combating corruption in developing countries.

**Keywords:** Post-materialistic Values; Corruption Behavior; Liberalism; Cultural Values

## 1. Introduction

Corruption is commonly seen as a major threat to an organization's "good governance" (Siddiquee & Zafarullah, 2022). Anti-corruption is one of the top agendas of governments, large multinational corporations, international organizations and non-governmental organizations, but there is barely an organization in the world that is free from corruption (Obermayer & Obermaier, 2016). Corruption is a widespread social phenomenon, however the level of corruption varies among countries, with some countries or regions more corrupt than others (Szymanski et al., 2022). Existing studies have put forward numerous insightful explanations for the heterogeneity of corruption degrees in different countries, which

are divided into political factors, such as government structure (Goel & Nelson, 2010), government size (Kotera et al., 2012), power distribution (Dell'Anno & Teobaldelli, 2015). Economic factors, such as the level of economic development (Goel & Nelson, 2010), the level of openness to the outside world (Gokcekus & Knorich, 2006) and the level of urbanization (Goel & Nelson, 2010); social factors such as education level (Kravtsova et al., 2017) and Social Capital (Riveros, 2022). Existing studies rarely consider cultural factors when explaining national and regional differences in corruption (Szymanski et al., 2022). Cultural values have a significant impact on the functioning of a regional

government and may influence corruption (Garcia-Gomez et al., 2022), , therefore, understanding the cultural causes of corruption will help in the governance of corruption (Goel & Nelson, 2010).

Since the 1980s, Chinese society has undergone socio-economic transformation, forming a social background of multicultural coexistence (Strenze, 2021). Historically, collectivist cultural values have had a critical impact on Chinese people's attitudes and behaviors (Strenze, 2021), however, social and cultural values have changed with the change of China's economic structure, and liberalism and post-materialism have gradually formed an important part of China's social and cultural map (Luo, 2022; Xie & Lu, 2022). China's traditional material-centered and family-oriented social culture embodies the characteristics of materialism (Wang et al., 2022; Wang et al., 2021); since the 1980s, China has entered the process of economic and social modernization (Strenze, 2021; Luo, 2022). As a result of economic modernization, traditional cultural values of collectivism have begun to weaken, and post-materialistic values have gradually spread in society (Xie & Lu, 2022). The values of utilitarianism and individualism are increasingly influential in Chinese society (; Xie & Lu, 2022; Luo, 2022).

The influence of post-materialism on corrupt preferences is paradoxical. On one hand, individuals with post-materialist values exhibit higher levels of tolerance towards non-mainstream behaviors, which may consequently enhance their propensity to accept corruption (Welzel, 2010; Kravtsova et al., 2017). In turn, individuals with post-materialist values tend to have their material needs met and prioritize the public values of transparent governance, equity and justice; consequently, they exhibit a greater resistance towards accepting corruption (Inglehart, 2003; Welzel, 2010). Then how does post-materialism affect corruption in a transitional

society like China? Based on the context of Chinese society, there are three main contributions of this study compared to previous studies: First, the cross-cultural perspective. Research on the influence of post-materialism on corrupt behavior has been mainly based on Western cultural contexts in European and American countries. This study can expand the explanatory power of post-materialistic values in Chinese society in the context of Confucian culture. Second, dynamic perspective. Previous studies tend to be based on cross-sectional data. This study used survey data from 1990, 1995, 2001, 2007, 2013 and 2018 to analyze the overall impact of post-materialistic values on corruption in transitional societies. Third, U-shaped relationship. Previous studies have verified a linear relationship between post-materialistic values and corruptive behavior. This study uses Chinese data to verify the existence of a "U-shaped" relationship between the two variables.

## 2. Literature Review and Research Hypotheses

### 2.1 The Relationship between Cultural Values and Corruption Behaviors

Cultural values are inextricably linked to corrupt behavior. Cultural values are usually defined as common beliefs, values, attitudes, norms, customs and traditions (Akanji, 2017), which have a significant effect on the level of good governance, including the level of rule of law, the effectiveness of anti-corruption and the degree of democracy (Inglehart, 1997; Welzel, 2010; Kravtsova et al., 2017). In previous work on the influence of cultural values on corrupt behavior, there have been two main theoretical paths of interpretation. The first is the behaviorist path. The value-attitude-behavior model believes that values determine people's attitudes towards specific behaviors, and then affect behaviors at the individual level (Homer & Kahle, 1988). Postmaterialists are individuals with low collectivist cultural tendencies, who have a stronger sense of self, emphasize individual

independence and individual uniqueness, advocate autonomy and self-expression (Inglehart, 1997; 2003), and show higher tolerance for non-mainstream behaviors, thus affecting the cognitive, emotional and behavioral motivations of individuals to accept corrupt behaviors (Xie & Lu, 2022). Cross-country multi-period data show that in some countries people with high post-materialist values at the individual level tend to justify corruption (Kravtsova et al., 2017; Tu et al., 2020).

Secondly, the path of institutionalism. Cultural values are informal institutions that, together with formal institutions, form the institutional structure of society and thus influence individual behavior (North, 1990). Informal institutions such as cultural values construct the cognitive framework of social meaning and shape the thinking, emotion and behavior patterns of individual people (Scott, 2008). Different cultures will lead to differences in people's cognition, motivation and emotion, and affect people's extensive psychological and behavioral tendencies (Scott, 2008). Different cultures constitute non-institutional constraints on corruption behavior preferences (North, 1990), and cultural diversity can partly explain regional and national corruption differences (Popova & Surikhin, 2021). There are studies that a rejection of corruption as an integral value of society is an indispensable condition for the success of the anti-corruption measures implemented by any state divide the world into 8 cultural regions and verify that culture is an essential anthege to explain regional differences in corruption (Popova & Surikhin, 2021). As an informal institution, culture can also influence the overall level of national governance through the quality of formal institutions, such as combating corruption, poverty alleviation and economic development (Popova & Surikhin, 2021). In Europe and the United States public opinion is prone to concern with post-materialistic needs of self-actualization, quality of life, and self-

expression, which underlie anti-corruption pressures (Themudo, 2013). The significant impact of post-materialistic values on the level of corruption has been tested in different countries, such as African, Eastern European, South Asian, Latin American (Popova & Surikhin, 2021) and large cross-country samples (Roth et al., 2023).

## 2.2 The "U-shaped" Relationship between Post-materialistic Values and Corruption Behaviors

Over the past 50 years, the theory of post-materialism has had a wide range of influence in political culture, public opinion and behavioral politics (Inglehart, 1997). Since the 1970s, countries in Europe and the Americas have experienced sustained periods of economic prosperity, improved social welfare policies and security systems, and stable social order, bringing about dramatic changes in social structures. A new "post-industrial era" has quietly arrived, and people's political culture and values have changed (Inglehart, 2003). Materialistic values refer to the emphasis on both economic and physical security—the needs most directly related to physiological survival (Inglehart, 1981). Post-materialistic values emphasize overall quality of life, autonomy and self-expression (Inglehart, 1997).

With the spread of economic globalization in the world, the intergenerational value shift in some developing countries has experienced a lengthy period of economic prosperity since 1990, which has brought people's values to replace the materialist values aimed at maximizing production and income with the post-materialist values of quality of life and social equality (Jordaan & Dima, 2020). Since 1978, China has undergone a prolonged period of medium-high economic development and sociopolitical stability. Consequently, China has transitioned from an era of material scarcity to one of material abundance, thereby fostering a shift in public focus from physiological maintenance and safety-oriented materialism to post-materialism that

accentuates self-expression and personal autonomy (Xie & Lu, 2022).

Materialist cultural values will gradually transform into post-materialist cultural values, and the implications are profound. Post-materialist values are commonly closely related to some essential behavioral preferences of the people, such as political participation, freedom of speech, nationalism, and corruption acceptance (Inglehart, 2003; Roth et al., 2023). The World Bank's definition of corruption is the most widely accepted concept, which refers to the abuse of public office for private gain (World Bank, 1997). The public's attitude towards corruption includes two parts: the willingness to fight against corruption and the willingness to participate in corruption (Tu et al., 2020). This study focuses on the latter. Corruption behavior preference refers to the public's willingness to participate in corruption (Alvarez, 2015). The preference for corruption among individuals is influenced by various structural factors, including political, economic, and cultural aspects (Inglehart, 2003; 2013). Additionally, post-materialist values play a significant role in shaping corruption preferences within a cultural context (Inglehart, 2003; Roth et al., 2023).

However, the available evidence regarding the influence of post-materialistic values on individuals' preferences for corrupt behavior is inconclusive. On one hand, there exists a positive correlation between post-materialism and preference for corruption. Post-materialism is associated with individualism and autonomy (Welzel, 2010), wherein individuals emphasizing personal freedom of choice across various aspects of life often exhibit non-compliance with external authorities such as family, religion or state. They possess a high degree of autonomy and perceive themselves as decision-makers in determining which social rules to adhere to (Inglehart, 2013). This emphasis on self-expression values may undermine previously established social norms

consensus while strengthening personal ambition (Machiavelli, 2009), potentially leading post-materialists to disregard societal norms and moral constraints. Consequently, they may display greater tolerance towards corruption and an increased likelihood of engaging in corrupt practices (Welzel, 2010). This hypothesis has been supported by cross-country data from the World Values Survey (Kravtsova et al., 2017).

On the other hand, post-materialism is negatively correlated with corrupt preferences. Post-materialism is associated with civic activism, support for democracy and transparency, government trust, social justice and justice, as these qualities are opposite to corruption, post-materialists may be more inclined to oppose corruption (Inglehart, 2003; Welzel, 2010; Welzel et al., 2003). Individuals holding materialistic values often find themselves in unstable environments where access to high-quality public services such as healthcare and education may be limited (Hofstede, 2010), leading them to perceive more external threats and uncertainties. Consequently, they resort to corrupt behavior as a means of coping with insecurity and avoiding uncertainty (Welzel, 2010; Welzel et al., 2003). On the contrary, post-materialists generally inhabit more secure and stable environments which provide fewer incentives for engaging in corrupt behaviors (Kravtsova et al., 2017).

In academia, there exists a divergence of explanations and evidence regarding the association between post-materialism and preferences for corrupt behavior. There may be a nonlinear relationship between post-materialism and corrupt behavior, that is, post-materialists' abandonment of materialism and pursuit of non-material goals may inhibit their preference for corrupt behavior, and when the level of post-materialism reaches a certain stage, their excessive pursuit of self and freedom may promote the preference for corrupt behavior. Based on this, hypothesis 1 is proposed:

H1: There is a U-shaped relationship between post-materialistic values and corruption behaviors.

### 2.3 Mediating Effects: The Role of Liberalism

Liberalism refers to an ideology that individuals put interests, needs and desires above others based on rational choices, and emphasizes the autonomy of individuals' inner activities and external actions (Hobhouse, 1964). Locke, the representative of classical liberalism, understood freedom as the ability of individuals to determine their actions and control their property as they saw fit, without anyone's permission or obedience to anyone's will (Locke, 1960). The neoliberal school believes that individuals' motives and behaviors in economic activities are egoistic first and altruistic second (Hayek, 2020). There are differences between classical liberalism and neoliberalism in the propositions of government, market and social relations, but the pursuit of human self-interest is consistent throughout (Hobhouse, 1964; Locke, 1960; Hayek, 2020). The practical experience of European and American countries suggests that all industrialized and modernized countries will, in due course, in varying degrees, embrace post-materialistic values and promote greater attention to liberalism as economic levels rise and intellectual societies emerge. The pursuit of political freedom, freedom of thought and freedom of action has become the universal pursuit of Western society (Welzel, 2010; Welzel et al., 2003), the rise of post-materialistic values promoted the popularization of liberal ideas in Western countries (Inglehart, 2003). With the rapid advancement of China's economy and the gradual enhancement of living standards, there has been a growing prominence in the public's pursuit for spiritual fulfillment. The emergence of new media technology and mass communication has empowered an increasing number of individuals to exercise their right to self-expression, fostering a dissemination of liberal

ideologies among the Chinese populace (Zhang et al., 2017).

Liberalism is a double-edged sword in the fight against corruption. On the one hand, absolute liberalism may promote corrupt practices. If absolute freedom is believed, then the abuse of political power and discretion by public officials, such as the corruption of vote buying, misuse of resources, and sale of public office, will be justified by liberalism, but may lead to tragic results for the collective (Machiavelli, 2009). Therefore, the core theme of corruption management is to limit the power of public officials and prevent individual liberal tendencies from harming collective interests (Kentikelenis & Babb, 2019). On the other hand, effective anti-corruption measures are frequently associated with liberalism. Liberals tend to have anti-authority and pro-democratic political values, advocating political democratization and economic liberalization (Inglehart, 2003). Political democratization increases participation and competition in elections, increases voters' control over candidates, and can curb corruption (Kentikelenis & Babb, 2019). A free and open political environment can motivate the public to stand up against corruption (Zhang et al., 2017; Themudo, 2013), and corruption can be effectively monitored through press freedom (Themudo, 2013). Liberals also advocate economic liberalization. Trade opening, deregulation, privatization and other economic liberalization policies can effectively reduce the opportunities for rent-seeking by the "predatory hand" of the government, thus helping to reduce corruption (Kentikelenis & Babb, 2019). Based on this, hypothesis 2 is proposed:

H2: Liberal values play a mediating role in the relationship between post-materialistic values and a preference for corrupt behaviour.

In order to further verify hypothesis 2, the variables of perceived social justice, tolerance of non-mainstream behaviors and preference for

democracy are selected are selected to measure liberal values (Inglehart, 1997; 2003). First, perceived social justice may act as a disincentive to corruption. Folger (2003) believes that justice involves equal distribution, embodies altruism, focuses on demand expectations, and also focuses on the needs of the collective. People concerned about perceived social justice believe that a person's freedom is limited and constrained by the social system, and limited autonomy contributes to the realization of equal distribution, which may increase the resistance to selfish behavior such as bribe-taking (Folger, 2001). Perceived social justice is the result of personal judgment, which is mostly influenced by personal intuition and emotion, and it is not exclusively based on rationality and calculation to judge whether society is fair (Knight & Gunatilaka, 2022). In this study, perceived social justice refers to people's satisfaction with their family's economic situation, while income satisfaction will affect overall life satisfaction and perceived social justice (Knight & Gunatilaka, 2022). It has been found that post-materialists pay extra attention to social equality (Welzel et al., 2003), and post-materialists' attention to the overall quality of life will enhance their demand for social justice (Jordaan & Dima, 2020). A higher perceived social injustice will make individuals more tolerant of corruption, thus worsening the level of corruption in a society). When the income gap shrinks and widens, the increased sense of social injustice may promote the preference for corrupt behaviors (Knight & Gunatilaka, 2022). Based on this, hypothesis 2.1 is proposed:

H2.1: The sense of social justice plays a mediating role between post-materialistic values and corruption behaviors, and the higher the sense of social justice is, the less corruption behaviors are preferred..

Second, liberal tolerance of non-mainstream behaviors may foster corrupt behavior. Non-mainstream phenomena are typically

characterized as ideas and actions that deviate from prevailing cultural or social norms (Davoudpour, 2023). Tolerance of non-mainstream behavior refers to the extent to which such behavior, including homosexuality, divorce, tax evasion, and unmarried cohabitation, is tolerated. (Davoudpour, 2023). The experience of European and American social development shows that post-materialists who are free from "survival needs" tend to attach more importance to individual needs, break through traditional social rules, and have the courage to pursue their own individuality. They have a higher tolerance for social deviant behaviors of minority groups (Inglehart, 2003; Welzel, 2010). Corruption contradicts current social norms (Bank, 1997; Roth et al., 2023), while individuals with non-mainstream values are more inclined to challenge authority and defy societal conventions by being more receptive towards corruption (Roth et al., 2023). Consequently, the higher the tolerance for non-mainstream behavior, the more likely they are to prefer corrupt behaviors. Based on the above, hypothesis 2.2 is proposed:

H2.2: The tolerance of non-mainstream behavior plays an intermediary role between post-materialistic values and corrupt behaviors and the higher the tolerance of non-mainstream behavior, the greater the preference for corrupt behavior.

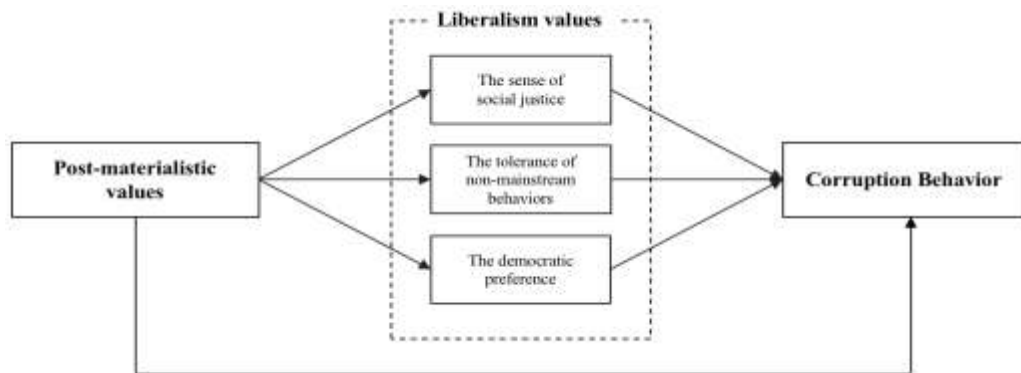
Third, liberal preferences for democracy may act as a disincentive to corruption. Popular preference for democratic government refers to the degree of citizens' recognition and preference for democratic system, including the form of indirect democracy and direct democracy (Al-Ississ & Diwan, 2016). According to the data from the European Values Study, individuals with post-materialist values exhibit a stronger aspiration for freedom and democracy (Welzel, 2010), leading them to actively engage in political activities such as voting and co-signing petitions (Inglehart, 2003), thereby fostering greater support for democratic institutions (Inglehart, 2003). The

political system determines the distribution of power, and the distribution of power will affect government decision-making, public spending, and regulatory systems, which in turn will affect the motivation of public officials to be bribed (Siddiquee & Zafarullah, 2022; Woodhouse, 2022). Democracy is frequently seen as a deterrent to corruption (). Empirical research shows that the higher people's preference for democracy, the lower their tolerance for corruption, and the higher they will supervise

government corruption, so as to effectively control corruption (Woodhouse, 2022). From this, hypothesis 2.3 follows:

H2.3: The preference of democracy plays a mediating role between post-materialistic values and corrupt behaviors, and the higher the preference of popular democracy, the fewer the preference for corrupt behaviors.

Figure 1 shows the theoretical model of this study.



**Figure 1 Theoretical Model**

### 3. Research Method, Data and Variables

#### 3.1 Research Method

The dependent variable is a continuous variable. Since the survey data spans years and provinces, the differences in socio-economic environments among different years and administrative systems among different provinces may have a certain impact on individual perception. The political atmosphere and influential events in a particular year may also impact the attitude towards corruption. To control the unobserved variables, the "xtreg" function, which can fix the provinces and years in the models, was used in this study (Gormley & Matsa, 2014). Moreover, in order to systematically test the three influencing mechanisms, this study drew on existing practices (Lim et al., 2017) and adopted a three-stage approach to test the mediating effect.

#### 3.2 Data

This study used data from the World Values Survey which is an international study of social changes, especially the changes of values, covering more than 60 countries around the world and having been carried out every four years on average since 1980. So far, seven rounds of data have been generated. This study used the data from six rounds of surveys in China (1990, 1995, 2001, 2007, 2013, 2018), and in particular, the 2018 survey in China lasted from 2018 to 2020, with a total sample size of 10,827.

#### 3.3 Measurement of Variables

1. The dependent variable is preference for corruption behaviors. In recent years, scholars have observed the prominent weight of anti-corruption in political performance in China, and a large number of empirical studies on political trust in China mainly use corruption perception to measure political performance (Kuo et al, 2023). Therefore, combining the research object,

theoretical interest and practical political practice, this study used corruption acceptance to measure people's preference for corruption behaviors. The survey item is: "To what extent can you accept bribery behavior?" 1 is totally unacceptable, 10 is completely acceptable, and the larger the number, the more acceptable the bribery behavior.

2. The independent variable is post-materialistic values. The mediating variables include sense of social fairness, tolerance of non-mainstream behaviors, and democratic preference. Post-materialism uses the scale developed by the existing research (Inglehart 1997), and the respondents are requested to rank the issues that should be prioritized by the country in the next decade. There are 10 items to be ranked, including "maintaining the stability of the national order" (materialism), "giving people more voice in government decision-making" (post-materialism), "reducing price levels" (materialism), "protecting freedom of expression" (post-materialism), etc. 0 stands for materialism, and 5 represents post-materialism, and the results calculated in the WVS questionnaire are directly used. In the empirical research, the measurement of sense of justice is mainly in terms of income gap (Knight & Gunatilaka, 2022). The measurement item is "How do you think about the income gap?" The 10-point Likert scale is adopted, in which 1 means that the income should be fairer, and 10 means that greater income disparity is needed as an incentive to individuals' work performance. The smaller the number, the stronger the sense of injustice. The measurement of tolerance of non-mainstream behaviors refers to the method of Thomason et al. (2023), in which the respondents are asked about their acceptance of homosexuality, euthanasia and premarital sex. 1 is totally unacceptable, 10 is completely acceptable, Cronbach's  $\alpha$  is 0.6, and the average is taken. The measurement of democratic preference is based on the approach of Al-Ississ and Diwan (2016), using four items including "Having a

strong leader", "Having experts make decisions", "Having the army rule", and "Having a democratic political system"; Cronbach's  $\alpha$  is 0.9, and the average is taken.

3. There are three types of control variables: 1) demographic variables, and demographic factors may affect people's attitudes towards corruption. In terms of gender which is divided into male and female, some empirical studies on the matter in laboratory or social settings women were still found to be less corrupt (Kravtsova et al., 2017); In terms of marriage, married individuals are more inclined to defend corruption behaviors than unmarried individuals (Kravtsova et al., 2017); People with higher education levels are less likely to justify corruption (Kravtsova et al., 2017), and their education level is divided into 8 categories; Employers are often more likely to have access to power, leading to corruption (DeCelles et al., 2012). The employment status is divided into unemployed, retired, and employed. 2) Socioeconomic status variable, on the one hand, people with low social status are eager to get rid of their powerlessness, so they may adopt compensatory strategies to reduce self-differences (Riveros, 2022), such as the external benefits of corruption. The item of economic status is "What do think of your family's socioeconomic status?", the 10-point Likert scale is adopted, and 1 represents the family's socioeconomic status is very low, and 10 represents the family's socioeconomic status is very high. 3) Macro variables, including government size, economic growth, and institutional quality. Previous studies have shown that bigger government or higher economic growth means more opportunities for corruption (Ahmad et al., 2012), and institutional quality leads to lower levels of corruption (Bjørnskov, 2011). The government size uses the measurement of the proportion between officials and civilians, the economic growth is measured by GDP growth, and institutional quality is measured by Worldwide Governance Indicators

(WGI). All the three variables are continuous variables.

The independent variable of this study is mostly the subjective evaluation of the respondents, which may affect each other and have a bias in the regression coefficient. However, from the perspective of the Variance Inflation Factor

(VIF), the average VIF of all variables is 1.18, and the maximum is only 1.48, indicating that the concern about the possible collinearity of the model can be eliminated (Fox & Monette, 1992). Table 1 in appendix shows the descriptive statistical analysis of this study.

**Table 1 Descriptive Statistical Analysis**

Variable	Variable Coding	Mean Value	Variance	Maximum Value	Minimum Value
<b>Dependent Variable</b>					
Corruption behavior (CB)	1= Totally unacceptable; 10= completely acceptable	1.58	1.45	10	1
<b>Independent Variables</b>					
Post-materialistic values (PMV)	0= Materialism; 5= Post-materialism	1.32	1.03	5	1
Sense of social fairness (SSF)	1= Very dissatisfied; 10= Very satisfied	5.57	2.99	10	1
Tolerance of non-mainstream behaviors (TNB)	1= Totally unacceptable; 10= completely acceptable	1.32	1.03	0	5
Democratic preference (DP)	1= Not democratic at all; 10= Very democratic	3.35	0.50	5	1.5
<b>Control Variables</b>					
Gender	1= Male; 2= Female	1.51	0.5	2	1
Marriage status	1 = Married; 0 = Others	1.82	1.38	2	1
Education level	1= Inadequately completed elementary education; 8= University with degree/Higher education	4.15	2.09	8	1
Employment status	1= Unemployed; 2= Retired; 3= Employed	1.56	1.77	3	1
Social status	1= Upper Class; 5= Lower Class	3.62	0.88	5	1
Economic status	1= Lowest; 10= Highest	5.23	1.99	10	1
Proportion of officials and civilians (POV)		1.07	0.17	0.86	1.3

The growth rate of GDP(GRGDP)	%	8.82	3.11	3.9	14.23
Worldwide Governance Indicators (WGI)		0.49	0.12	-0.62	-0.32

Note: The data of WGI has been available only since 1996, and there is no data of 2001. Therefore, the data of 1996 is used to measure the quality of Chinese institutions in 1995, and the data of 2002 is used to measure the quality of Chinese institutions in 2001.

#### 4. Analysis of Empirical Results

##### 4.1 Benchmark Models: the relationship between Post-materialism and Preference for Corruption Behaviors

To verify the hypotheses, this study used the fixed effect model and the stepwise regression equation to assess the  $\beta$  coefficient, and the three types of control variables were put into the models step by step, including demography (gender, marriage, education level, employment status), socioeconomic status (social status, economic status), and macro variables (government size, economic growth, and institutional quality), and the results of the seven benchmark models are shown in Table 2. The model (1) shows that post-materialism has a significantly positive correlation with corruption behaviors. The results of the model (2) show that the quadratic term of post-materialism and corruption behaviors is

significant, presenting a "U-shaped" relationship ( $\beta > 0$ ,  $p < 0.05$ ), which means that the higher the level of post-materialism, the more effectively the corruption behaviors are inhibited. When a particular threshold of post-materialism exceeds, the higher the level of post-materialism, the more efficiently corruption is facilitated, thus supporting H1. The result robustness of the models (3) - (7) shows that, in terms of control variables, men and married persons are more likely to conduct corruption behaviors. The higher the level of education, the higher the likelihood of corruption. Retirees and employees are more likely to have opportunities for corruption than those who are unemployed; there is a significantly positive correlation between socioeconomic status and corruption behaviors, which is also related to their access to power (Hayek, 2020; Kravtsova et al., 2017).

**Table 2 Results of Benchmark Models of Post-materialism and Corruption Behaviors**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CB	CB	CB	CB	CB	CB	CB
PMV	.071*** (.015)	-.004 (.038)	-.032 (.041)	-.026 (.044)	.054*** (.017)		-.012 (.044)
PMV square		.023** (.011)	.028** (.012)	.025** (.013)		.018*** (.005)	.021* (.013)
Gender			-.068** (.032)	-.079** (.034)	-.077** (.034)	-.078** (.034)	-.081** (.035)
Marriage status			-.144*** (.043)	-.159*** (.047)	-.159*** (.047)	-.158*** (.047)	-.157*** (.047)
Education level			.041* (.023)	.027 (.025)	.025 (.025)	.026 (.025)	.023 (.025)
Employment status				.051** (.023)	.051** (.023)	.051** (.023)	.039* (.023)
Social class				.043* (.024)	.043* (.024)	.043* (.024)	.032 (.023)

Economic class				.038***	.038***	.038***	.029***
				(.011)	(.011)	(.011)	(.011)
GRGDP							.028***
							(.01)
POV							2.333***
							(.164)
WGI							-2.56***
							(.209)
_cons	1.483***	1.517***	1.717***	1.415***	1.377***	1.399***	-2.515***
	(.024)	(.029)	(.084)	(.151)	(.15)	(.149)	(.328)
Fixed Province	YES	YES	YES	YES	YES	YES	NO
Fixed Year	YES	YES	YES	YES	YES	YES	NO
N	9012	9012	8002	7228	7228	7228	7228
R-squared	.049***	.049***	.052***	.056***	.055***	.056***	.039***
Standard errors are in parentheses							
*** p<.01, ** p<.05, * p<.1							

#### 4.2 Mediating Effects: Sense of Social Fairness, Tolerance of Non-mainstream Behaviors, Democratic Preference

Table 3 shows the relation between the mediators and the dependent variables. Models (8)-(12) show that the influence of the mediating variable liberal values on the dependent variable corruption behavior is partially supported by empirical data. First, the regression coefficient of social justice on corrupt behavior is not significant and H2.1 is not supported by empirical data. Second, the tolerance of non-mainstream behavior has a significant positive impact on corruption behavior ( $\beta > 0$ ,  $p < 0.01$ ), that is, the

higher the tolerance of non-mainstream behavior is, the more accepting corruption behavior is. When people emphasize personal freedom, the external norms of family, religion, and state will be weakened (Inglehart, 2013). People with a higher tolerance for non-mainstream behavior may place more emphasis on their own care, viewing corrupt behavior as a way to achieve self-aspiration. The higher the tolerance of non-mainstream behavior is, the more people will be encouraged to accept behaviors that do not conform to the current social norms (Kravtsova et al., 2017), and thus more accepting of corruption behavior (Welzel, 2010). Third, democratic regime preference has a significant negative

impact on corruption behavior ( $\beta < 0$ ,  $p < 0.01$ ). The higher the preference for democratic regimes, the more unacceptable the corrupt practices. The people with higher preference for democracy

require the government to be more responsible to the people, and the more unacceptable corruption behavior is (Roth et al., 2023).

**Table 3 Results of the Models of Mediating Variables and Dependent Variable**

	(8)	(9)	(10)	(11)	(12)
	CB	CB	CB	CB	CB
SSF	.004 (.005)	.0005 (.005)	.001 (.007)	.002 (.007)	.001 (.008)
TNB		<b>.141***</b> (.007)	<b>.175***</b> (.009)	<b>.174***</b> (.009)	<b>.166***</b> (.01)
DP			<b>-.197***</b> (.038)	<b>-.202***</b> (.038)	<b>-.206***</b> (.041)
Gender				-.094** (.039)	-.104** (.043)
Marriage status				-.115** (.052)	-.142** (.057)
Education level				-.037 (.028)	-.051* (.031)
Employment status					.059** (.027)
Social class					.032 (.032)
Economic class					.044*** (.014)
_cons	1.564*** (.032)	1.142*** (.04)	1.855*** (.137)	2.173*** (.165)	1.93*** (.24)
Fixed Province	YES	YES	YES	YES	YES
Fixed Year	YES	YES	YES	YES	YES
N	9657	8763	6172	6119	5471
R-squared	.045***	.083***	.085***	.087***	.085***
Standard errors are in parentheses					
*** $p < .01$ , ** $p < .05$ , * $p < .1$					

Table 4 outlines the relationship between the independent and intermediary variables. The empirical results of models (13) - (18) show that the primary and secondary terms of post-materialism are significantly and positively correlated with the tolerance for non-mainstream behaviors. Traditional values have relatively low

tolerance for non-mainstream behaviors such as abortion and homosexuality, while post-materialistic values respect all forms of expression. When people shift from materialistic to post-materialistic values, their tolerance for non-mainstream behaviors will increase (Inglehart, 2013).

**Table 4 Results of the Models of Mediating Variables and Independent Variables**

	(13)	(14)	(15)	(16)	(17)	(18)
	SSF	TNB	DP	SSF	TNB	DP
PMV	-.021	<b>.082***</b>	.002			

	(.032)	(.024)	(.006)			
PMV square				-.008	<b>.026***</b>	-.001
				(.009)	(.007)	(.002)
Gender	-.186***	.012	-.049***	-.186***	.011	-.049***
	(.067)	(.051)	(.014)	(.067)	(.051)	(.014)
Marriage status	-.143	-.401***	.004	-.144	-.4***	.003
	(.091)	(.067)	(.018)	(.091)	(.067)	(.018)
Education level	.222***	.587***	.073***	.222***	.588***	.073***
	(.049)	(.036)	(.01)	(.049)	(.036)	(.01)
Employment status	.03	-.042	.008	.029	-.041	.007
	(.045)	(.033)	(.009)	(.045)	(.033)	(.009)
Social class	-.194***	.079**	.026**	-.194***	.078**	.026**
	(.047)	(.035)	(.01)	(.047)	(.035)	(.01)
Economic class	.011	.013	.005	.011	.012	.005
	(.022)	(.017)	(.005)	(.022)	(.017)	(.005)
_cons	6.023***	1.918***	3.204***	6.017***	1.956***	3.209***
	(.294)	(.221)	(.063)	(.292)	(.219)	(.062)
Fixed Province	YES	YES	YES	YES	YES	YES
Fixed Year	YES	YES	YES	YES	YES	YES
N	7470	6773	5886	7470	6773	5886
R-squared	.067***	.132***	.053***	.067***	.132***	.053***
Standard errors are in parentheses						
*** p<.01, ** p<.05, * p<.1						

The results of Model (19)–(22) in Table 5 show that after the non-mainstream cultural tolerance is added, the influence coefficients of post-materialism and the quadratic term of post-materialism on corruption behavior preference

alter, and the effect is remarkably robust, which preliminarily indicates that the non-mainstream cultural tolerance plays a partial mediating role in the relationship between post-materialism and corruption behavior preference.

**Table 5 Results of the Partial Mediation Effect**

	(19)	(20)	(21)	(22)
	CB	CB	CB	CB
PMV	<b>.062***</b>	<b>.066***</b>		
	(.019)	(.021)		
PMV square			<b>.02***</b>	<b>.02***</b>
			(.005)	(.006)
SSF	.002	.0003	.002	.0001
	(.007)	(.008)	(.007)	(.008)
TNB	<b>.157***</b>	<b>.151***</b>	<b>.156***</b>	<b>.151***</b>
	(.009)	(.01)	(.009)	(.01)
DP	<b>-.183***</b>	<b>-.193***</b>	<b>-.182***</b>	<b>-.192***</b>
	(.039)	(.041)	(.039)	(.041)
Gender		-.106**		-.107**
		(.044)		(.044)
Marriage status		-.144**		-.144**
		(.058)		(.058)
Education level		-.064**		-.063**
		(.031)		(.031)

Employment status		.064**		.065**
		(.028)		(.028)
Social class		.044		.043
		(.033)		(.033)
Economic class		.045***		.044***
		(.015)		(.015)
_cons	1.765***	1.82***	1.787***	1.85***
	(.142)	(.247)	(.141)	(.246)
Fixed Province	YES	YES	YES	YES
Fixed Year	YES	YES	YES	YES
N	5790	5188	5790	5188
R-squared	.08***	.082***	.08***	.082***
Standard errors are in parentheses				
*** p<.01, ** p<.05, * p<.1				

The results of the significance tests of the mediation effect using the Sobel and bootstrap methods are presented in Table 6 in appendix.

**Table 6 Path coefficients and Significance Tests**

Path	$\beta$	t-value	P	Significance Tests
PMV→SSF	-.021	-0.63	0.527	No
PMV→TNB	<b>.082</b>	3.37	0.001	<b>Yes</b>
PMV→DP	.002	0.29	0.774	No
PMV Square→SSF	-.007	-0.82	0.412	No
PMV Square→TNB	.026	3.66	0.000	<b>Yes</b>
PMV Square→DP	-.001	-0.44	0.656	No
SSF→CB	.000	0.12	0.903	No
TNB→CB	.166	16.59	0.000	<b>Yes</b>
DP→CB	-.206	-5.05	0.000	<b>Yes</b>

It was found that non-mainstream behavior tolerance serves as a robust mediating variable. On the one hand, it mediates the relationship between post-materialist and corrupt preferences. The validity of this mediation is confirmed by the Sobel estimate of path 1, which yields a z-value of 3.84 ( $P=0.000<0.01$ ). The total effect of post-materialistic values on corruption preferences was 0.063, with a direct effect of 0.051 and an indirect effect of 0.011, accounting for 18.2% of the total effect. The bootstrap method is employed to directly test the significance of the coefficient product, revealing that the confidence interval for the indirect effect of non-mainstream cultural

tolerance on post-materialistic values regarding corruption preference is [0.0136333, 0.0882627]. This interval rules out zero, indicating a significant mediating effect.

On another note, non-mainstream behavioral tolerance also acts as a mediator between post-materialistic quadratic terms and corrupt preferences. The Sobel test demonstrates that Z value is 4.174 ( $P<0.01$ ), confirming this mediating role's establishment. The total effect of the quadratic post-materialistic value on corrupt preferences was 0.02, with a direct effect of 0.016 and an indirect effect of 0.004, representing 18% of the overall effect. The bootstrap method is

employed to directly test the significance of the coefficient product, revealing that the confidence interval for the indirect effect of non-mainstream cultural tolerance on post-materialistic quadratic terms regarding corruption preference is  $[0.004727, 0.0278746]$ . This interval rules out zero, indicating a significant mediating effect.

In conclusion, following rigorous testing, the empirical findings of this study substantiate the presence of a U-shaped relationship between post-materialism and corruption, which is mediated by non-mainstream behavior tolerance within the framework of liberalism. Materialistic values play an essential role in East Asian society (Inglehart, 1997; Strenze, 2021). With the economic development, post-materialistic values gradually play an influential role in Chinese society (Zhang et al., 2017). Post-materialistic values can inhibit the preference for corrupt behavior, but when the preference for post-materialistic values exceeds a certain threshold, the higher the preference for post-materialistic values, the higher the preference for corrupt behavior is promoted. This relationship exerts a partial mediating effect through tolerance for non-mainstream behaviors, and the desire for personal interests such as hedonism in liberal preferences induces people to be more tolerant of corrupt behaviors (Kravtsova et al., 2017).

## 5. Discussion and Conclusion

### 5.1 Main Conclusions

Based on an empirical analysis of China's WVS data from 2018 to 2020, this study examines the impact of post-materialistic values on corruption within the Chinese context. Firstly, empirical evidence supports H1, revealing a "U-shaped" relationship between preference for post-materialism and corrupt behavior. Post-materialism suppresses preferences for corrupt behavior up to a certain threshold; however, beyond that point, it encourages a preference for corrupt behavior.

Secondly, liberal tolerance towards non-mainstream behavior acts as a partial mediator between post-materialistic values and corrupt behavior. The influence of post-materialism on preferences for corrupt behavior is mediated by the tolerance of non-mainstream behaviors. When liberalism prevails, individuals tend to challenge traditional constraints and pursue more personal and self-expressive behaviors, thereby enhancing their tolerance towards non-mainstream behaviors. This increased tolerance may also extend to deviant behaviors such as corruption (Roth et al., 2023; Beck & Beck-gernsheim, 2002).

### 5.2 Policy Suggestions and Future Research Prospect

This study examines the explanatory power of post-materialist theories in the Chinese context. In terms of theoretical contributions, it expands the cross-cultural applicability of post-materialism theory and reveals that the influence of post-materialism on corruption behavior preference is not linear, but "U" type, and there is an intermediary effect between non-mainstream cultural inclusiveness. At the practical level, the liberal tendency brought by post-materialistic values may have a negative impact on governance corruption, and the spread of post-materialistic values in society may promote corruption (Alfano et al., 2022). In late-developing countries, apart from external power balance control, system design and media openness, it is imperative to establish effective anti-corruption measures while also addressing the adverse influence of post-materialist values and liberal ideologies on the intrinsic motivation of civil servants. The public sector should shape administrative ethics and organizational culture through training, selection processes, rewards, and punishments in order to guide civil servants towards "good governance" behavior via internal value controls.

There are two limitations to this study. Firstly, the impact of materialistic values on the preference

for corrupt behavior needs to be examined through a designed causal inference framework. The data utilized in this study can only establish a correlation between post-materialistic values and a preference for corrupt behavior, rather than establishing a causal relationship. Therefore, it is essential to conduct natural or quasi-natural experiments to assess the causality between these variables. Secondly, the influence of Confucian culture on the association between post-materialistic values and preferences for corrupt practices in China should be explored further. While economic growth tends to shift social values towards post-materialism and liberalism, previous studies have indicated that when economic growth fosters national pride and revives traditional culture in China, the middle class exhibits a preference for Confucian culture (Zhang et al., 2017). Understanding how this preference impacts the relationship between post-materialistic values and preferences for corrupt behavior warrants additional discussion.

**Ethics statement:** not applicable

**Clinical Trial Number :** not applicable

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#### **Data Availability Statements**

The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

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#### **Contribution Rate of Researchers**

The authors contributed equally to the research.

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#### **Competing interests**

The author(s) declare no competing interests.

#### **Compliance with Ethical Standards**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

#### **References**

1. Ahmad, E., Ullah, M. A., & Arfeen, M. I. (2012). Does corruption affect economic growth?. *Latin american journal of economics* , 49(2), 277-305.
2. Akanji, B. (2017). The relationship between culture and corruption in Nigeria-prospecting culture change in dealing with this big black hole. *The Romanian Economic Journal*, 20 (63), 3-18.
3. Alfano, V., Capasso, S., & Santoro, L. (2023). Corruption and the political system: some evidence from Italian regions. *Italian Economic Journal*, 9(2), 665-695.
4. Alvarez, J. P. (2015). Low-level corruption tolerance: An “action-based” approach for Peru and Latin America. *Journal of Politics in Latin America*, 7(2), 99-129.
5. Al-Ississ, M., & Diwan, I. (2016). Preference for democracy in the Arab world. *Politics and Governance*, 4(4), 16-26.
6. Bjørnskov, C. (2011). Combating corruption: On the interplay between institutional quality and social trust. *The Journal of Law and Economics*, 54(1), 135-159.
7. Davoudpour, S. (2023). Don't Be My Neighbor: Exploring Social and Value Predictors of Sexual Prejudice Expressed by Those Who Fully Accept Sexual Minorities. *Archives of Sexual Behavior*, 1-17.
8. Folger, R. (2001). Fairness as deonance. In S. W. Gilliland, D. D. Steiner, & D. P. Skarlicki

- (Eds.), *Research in social issues in management* (pp. 3-31). Greenwich, CT: Informat
9. Fox, J., & Monette, G. (1992). Generalized collinearity diagnostics. *Journal of the American Statistical Association*, 87(417), 178-183.
  10. Goel, R. K., & Nelson, M. A. (2010). Causes of corruption: History, geography and government. *Journal of Policy Modeling*, 32(4), 433-447.
  11. Gokcekus, O., & Knörich, J. (2006). Does quality of openness affect corruption?. *Economics Letters*, 91(2), 190-196.
  12. Gormley, T. A., & Matsa, D. A. (2014). Common errors: How to (and not to) control for unobserved heterogeneity. *The Review of Financial Studies*, 27(2), 617-661.
  13. Hayek, F. A. (2020). *The constitution of liberty: The definitive edition*. Routledge.
  14. Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology*, 54(4), 638.
  15. Hobhouse, L. T. (1964). *Liberalism*. Oxford University Press.
  16. Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*. Princeton university press.
  17. Inglehart, R. (2003). How solid is mass support for democracy—and how can we measure it?. *PS: Political Science & Politics*, 36(1), 51-57.
  18. IJordaan, J. A., & Dima, B. (2020). Post Materialism and Comparative Economic Development: Do Institutions Act as Transmission Channel?. *Social Indicators Research*, 148(2), 441-472.
  19. Kentikelenis, A. E., & Babb, S. (2019). The making of neoliberal globalization: Norm substitution and the politics of clandestine institutional change. *American Journal of Sociology*, 124(6), 1720-1762.
  20. Knight, J., & Gunatilaka, R. (2022). Income inequality and happiness: Which inequalities matter in China?. *China Economic Review*, 72, 101765.
  21. Kotera, G., Okada, K., & Samreth, S. (2012). Government size, democracy, and corruption: An empirical investigation. *Economic Modelling*, 29(6), 2340-2348.
  22. Kravtsova, M., Oshchepkov, A., & Welzel, C. (2017). Values and corruption: Do postmaterialists justify bribery?. *Journal of cross-cultural psychology*, 48(2), 225-242.
  23. Kuo, M. F., Jiang, L., & Huang, H. (2023). Compromised Collectives vs. Greedy Individuals: The Interplay between Transparency, Accountability, and Corruption. *Journal of Social Sciences & Philosophy*, 35(2), 209-261.
  24. Lim, X. J., Radzol, A. M., Cheah, J., & Wong, M. W. (2017). The impact of social media influencers on purchase intention and the mediation effect of customer attitude. *Asian Journal of Business Research*, 7(2), 19-36.
  25. Locke, J. (1960). *Two Treatises of Government*, ed. Peter Laslett, Cambridge: Cambridge University Press.
  26. Luo, R. (2022). Urban Amenities: The New Trend of Mobility in Chinese New Generation Labors. *International Journal of Social Science and Education Research*, 5(12), 360-367.
  27. Machiavelli, N., & Dacres, E. (2009). *The prince*. W. Benton: Encyclopaedia Britannica.
  28. North, D. C. (1990), *Institutions, Institutional Change and Economic*, Cambridge University Press, New York.
  29. Popova, L. A., & Surikhin, P. L. (2021). The influence of the culture of society on the effectiveness of anti-corruption measures of the state. In *SHS Web of Conferences* (Vol. 118, p. 02008). EDP Sciences.
  30. Riveros Nava, P. (2022). Corruption and social capital: relational explorations, opposing cases and the bolivian context.

- Investigación & Desarrollo, 22(2), 69-80.
31. Roth, E., Sahonero, G., & Rodríguez, A. (2023). Structure of personal values and corruption: An experimental analysis of decisions leading to accepting or rejecting bribery. *Ajayú Órgano de Difusión Científica del Departamento de Psicología UCBSP*, 21(1), 15-36.
  32. Scott, W. R. (2008). *Institutions and organizations: Ideas and interests*. Sage.
  33. Siddiquee, N. A., & Zafarullah, H. (2022). Absolute power, absolute venality: The politics of corruption and anti-corruption in Malaysia. *Public Integrity*, 24(1), 1-17.
  34. Strenze, T. (2021). Value change in the Western world: the rise of materialism, post-materialism or both?. *International Review of Sociology*, 31(3), 536-553.
  35. Szymanski, M., Valdovinos, I. & Kaltenecker, E. (2022), How far are we from understanding corruption? The effect of cultural distance on corruption perception. *Critical Perspectives on International Business*, 18(2), 224-242.
  36. Themudo, N. S. (2013). Reassessing the impact of civil society: nonprofit sector, press freedom, and corruption. *Governance*, 26(1), 63-89.
  37. Thomason, S. J., Weeks, M. R., & Galperin, B. (2023). An exploratory analysis of generational differences in the World Values Surveys and their application to business leaders. *Ethics & Behavior*, 33(5), 357-370.
  38. Tu, W., Yang, J., & Zheng, Y. (2020). Influence of individual values on attitudes toward corruption: What undermine formal anticorruption effectiveness. *Asian Journal of Social Psychology*, 23(3), 264-277.
  39. Welzel, C. (2010). How selfish are self-expression values? A civiness test. *Journal of Cross-Cultural Psychology*, 41(2), 152-174.
  40. Welzel, C., Inglehart, R., & Kligemann, H. D. (2003). The theory of human development: A cross-cultural analysis. *European Journal of Political Research*, 42(3), 341-379.
  41. World Bank. (1997). *World development report 1997: The state in a changing world*. The World Bank.
  42. Woodhouse, E. F. (2022). Accountability and corruption displacement: evidence from Italy. *Journal of Public Policy*, 42(4), 730-754.
  43. Xie, J., & Lu, C. (2022). Relations among pro-environmental behavior, environmental knowledge, environmental perception, and post-materialistic values in China. *International Journal of Environmental Research and Public Health*, 19(1), 537.
  44. Zhang, T. H., Brym, R., & Andersen, R. (2017). Liberalism and postmaterialism in China: The role of social class and inequality. *Chinese Sociological Review*, 49(1), 65-87.