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TRADITIONAL ECONOMISTS OR THIRD WORLDISTS? THE EFFECT OF INTELLECTUAL PROPERTY RIGHTS ON ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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This study investigates the effect of Intellectual Property Rights (IPRs) on economic growth in 76 developing countries using panel data analysis over the period of 2008-2019. IPRs and the economic growth relationship have been discussed in the empirical literature. On the other hand, Third World Approach to International Law (TWAIL) scholars promote the idea that international law is a hegemonic tool of developed countries, and IPRs may be subjected to their arguments due to the Trade-Related Aspects of Intellectual Property Agreements (TRIPs). Results provide that IPRs positively and significantly affect economic growth in developing countries, whereas there is no U-Shaped relationship between them. The study suggests that IPRs protection should be highlighted in developing countries to achieve greater economic growth, and approves the perspective of traditional economists' approach over TWAILers.
Key words: intellectual property rights, economic growth, Third World approaches to international law, panel data model
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1 INTRODUCTION

How do the Intellectual Property Rights (IPRs) impact on developing countries economic growth? The gaining significance and attention paid on developing countries to enlighthen this issue has been trending recently (Le et al., 2022). Hence, IPRs and economic growth have been discussed in the empirical literature (Forero-Pineda, 2006; Falvey et al., 2006; Gould and Gruben, 1997; Park and Ginarte, 1997; Sattar and Mahmood, 2011; Wu, 2010; Yueh, 2007), and it has been a continuous debate in policy making and research fields, suggesting various implications from country to country (Furukawa, 2007; Reichman, 2014). The basic assumption is that imitation is costless, and stronger IPRs protection decreases the possibility of imitation production (Kwan and Lai, 2003). Yet, the data, methodology, and sample provide diverse results about IPRs' effect on economic growth. Whereas a number of studies provide the result that IPRs stimulate growth (Janjua and Samad, 2007), some of the research suggests that the relationship is not an easy task to analyze and discuss. Furthermore, as Clague et al. (1999) noted, some studies suggest that a lack of security of property rights and contract enforcement severely impacts growth.

According to a group of scholars, IPRs' effect on economic growth is generally ambiguous or not clean-cut (Falvey et al., 2006; Furukawa, 2007; Horii and Iwaisako, 2007). As growth is usually dependent on innovation and knowledge, it could be concluded that IPRs' effect on economic growth is a significant issue to analyze. However, as mentioned, the results suggest a complicated linkage between IPRs and economic growth, and the relationship is complex (Maskus, 2000). The IPR debate started and was triggered by Trade-Related Aspects of Intellectual Property Agreements (TRIPs) (Falvey et al., 2006). Due to the TRIPs Agreement and World Trade Organization (WTO) members' responsibility to protect and strengthen IPRs, the focus on the growth debate has increased, and higher levels of IPR protection have been urged (Park and Ginarte, 1997).

The developed and developing countries' nexus regarding IPRs protection and economic growth linkage has led us to focus on the difference between these two groups of countries. As Sell and May (2001, p. 470) have underlined *"[t]he history of intellectual property protection reveals a process that has vacillated between dissemination and exclusion"*. Therefore, it is crucial to critically approach IPRs protection and growth in developing countries. One of the fitting framework for this perspective is the Third World Approaches to International Law (TWAIL). TWAILers criticizes the mainstream approaches to international law and provides an idea regarding the difference between developed and developing countries concerning IPRs protection and economic growth. The non-hierarchical and anti-hegemony nature of TWAIL (Mutua, 2000) attempts to make scholars think out of the box of mainstream understandings of international law. According to Mutua (2000), international law has been a tool of Eurocentrism.

Furthermore, it is a framework that has been shaped under the colonial experience (Haskell, 2014).

This study explores the impact of IPRs protection on economic growth in 76 developing countries over the period of 2008-2019. Albeit a number of research investigate this relationship, the current study diverges itself through utilizing updated data on IPRs protection and comparing traditional and third world or TWAIL approach on IPRs. To do so, we aim to contribute to the existing literature via the theoretical framework and data coverage. Our findings suggest the statistically significant and positive effect of IPRs protection on economic growth in developing countries, thus, they do clearly refute the Third World approach.

Most of the studies have used diverse sources for IPRs data. Falvey et al. (2006) have taken the data from Ginarte and Park (1997), Leblang (1996) has utilized two proxies to measure IPRs, Lewer and Saenz (2005) have employed Gwartney and Lawson's (2004) Property Rights Index, and finally Goldsmith (1995) has used the data from Heritage Foundation's Index of Economic Freedom through Johnson and Sheehy (1995). However, IPRI provides the most updated yearly data to measure IPRs protection. The unique value of the study derives from using the updated yearly data of IPRI covering 2008-2019 and focusing on the developing countries to test whether there is a non-linearity following Falvey et al. (2006).

The remainder of this paper is organized as follows. The second section is on the theoretical framework. The third section provides the literature review on the IPRs protection's impact on economic growth. Fourth section indicates the data and methodology. In the fifth section, we document the empirical results, and finalize the study at the sixth section with the discussion and conclusion.

2 THEORETICAL FRAMEWORK

The argument about IPRs and economic growth relies on technological innovation and Foreign Direct Investments (FDIs). Janjua and Samad (2007) provided that IPRs protection is regarded as a triggering mechanism for economic growth. Moreover, Horii and Iwaisako (2007) highlighted that stronger IPRs are expected to stimulate the incentives to innovate, thus, enhancing economic growth, yet the weak relationship between IPRs protection and economic growth might be an indicator of a negative impact of IPRs on growth. However, the level of development is the key factor for the effect of IPRs protection on economic growth (Janjua and Samad, 2007). Accordingly, Sattar and Mahmood (2011) suggest that IPRs and economic growth relationships are more significant and positive in developed countries than the developing ones.

Furthermore, the new growth theory emphasizes that research and development (R&D) and innovation are vital for growth (Grossman and Helpman, 1993; Rivera-Batiz and Romer, 1991; Romer, 1990). These models assume that investments in R&D have

been made through the expectation of profit from inventions (Falvey et al., 2006). The conventional wisdom is, therefore, that stronger IPRs protection encourages investments and R&D activities (Kwan and Lai, 2003). The lack of secure IPRs may result in hesitation to trade and investment (Goldsmith, 1995) as they generally lower the transaction costs and provide a feeling of security to investors (Leblang, 1996). De Soto (1990, 2007) points out that property rights are the vital core of economic growth as they pose an economic institution. De Soto hypothesis assumes that growth is related to IPRs security; thus, property rights directly affect economic growth as they contribute to innovation (Lewer and Saenz, 2005).

According to De Soto (1990, 2007), there is a distinction between property rights in developing and developed countries or in competitive versus less competitive markets (Gould and Gruben, 1996). Similarly, in their meta-analysis study, Neves et al. (2021) states that this effect changes according to the development level of the countries. Developed countries present an environment that protects property rights, whereas vice versa in developing countries. De Soto (2007) argues if property rights are not secured in a country, it is not possible to turn them into capital or investment. Such as Correra (2005), there are scholars advocating that IPRs are burden on developing countries since they have economic consequences to foster the rapid development. In other words, the developing countries become disadvantaged under the terms of IPRs, which obviously raise the costs (Park and Lippoldt, 2008) or create dependency on private knowledge (Pagano, 2014). The raising imitation costs and attraction of FDIs are keypoints to comprehend IPRs impact on economic growth in developing countries. The adverse effect of stronger IPRs on developing countries' economies has been underlined by various researchers as they claim the overwhelmingly increasing imitation costs tend to harm innovation in terms of R&D and technology transfer (Adams, 2009; Kumar, 2003; Helpman, 1993; Glass and Saggi, 2002, Kim et al., 2012). Yet, there are also other scholars have found that stonger IPRs protection may fuel developing countries' exports, promote long-term economic growth or support the developing countries to turn their assets in capital (Maskus, 2001; Janjua and Samad, 2007; Yang and Maskus, 2009). The positive impact of stronger IPRs on developing countries typically linked to enhancing FDIs attraction (Le et al., 2022).

IPRs might also be subjected to TWAILers' criticisms as a component of international law. Okediji (2003) approaches the IPRs protection as a problematic since the niteteenth century through the channel of multilateral agreements to protect industrial properties. Accordingly, the TWAIL perspective suggests that the development of international law has been related to the imperialist project (Chimni, 2007). Chimni (2006) advocates that international law has always served the interests of powerful countries. Therefore, from the perspective of TWAIL, IPRs might be another area for reflection on power relationships between developed and developing countries. The TWAIL perspective considers that as a part of international law because of TRIPs,

protection of IPRs has been dictated by developed countries over developing countries. There are four channels for TWAILers' readings of IPRs (Upreti, 2022). Firstly, they approach IPRs as colonial regulations. The colonial nature of IPRs derive from TRIPs Agreements overwhelmingly domination on strong IPRs protection and free markets that fuels developed countries' benefits whereas hampering developing countries via the increasing costs. Secondly, the internationalization of IPRs is per sean imperialist project. As Upreti (2022, p. 223) puts it *"…TWAILers believe that elevating property regulations to the international level will result in a loss of state control over property regimes"*. Thirdly, the hegemonic feature of developed countries persists through internationally elevated IPRs protection. Lastly, the TRIPs Agreements have been criticisized by TWAILers. The TRIPs Agreements, in general, did not satisfy the less developed or developing countries as they are more favorable for developed countries' interests (Yu, 2006).

3 LITERATURE REVIEW

The existing literature provides diverse results for the IPRs' effect on economic growth. In the following studies, there are two strands of literature. First group of studies document a positive impact of IPRs protection on economic growth, whereas the second group consist of research presenting negative effect of IPRs on economic growth.

Examining 79 countries through threshold regression analysis, Falvey et al. (2006) concluded that IPRs protection's effect on growth is related to the country's development level. They reported a positive effect of IPRs protection on growth for high-income and low-income countries, whereas the effect is not the same for middle-income countries due to imitation production. Therefore, they argue that the effect of IPRs protection might be diversely related to the development levels of countries.

Goldsmith (1995) analyzed 59 less developed and transitional countries via the cross-section method and stated that democratic institutions and property rights are positively associated with medium-term economic growth where the democratic and property-oriented regimes have greater growth. More democratic countries grow faster as they also offer better protection of IPRs. Leblang (1996) did the pooled cross-sectional and time-series design panel over the period of 1960-1990 for three decades of different country groups and reported that IPRs absolutely have a positive effect on economic growth in the countries that protect IPRs when they are compared to those that do not protect IPRs.

Lewer and Saenz (2005) utilized fixed effects panel data methodology for 101 countries from 1990 to 2002 and found that high-level IPRs protection positively affects real economic growth rates. The results are similar when the sample is split into two OECD countries and LDC. In the two samples, regression results are positive for property rights on economic growth. However, the coefficient of property rights for LDCs is twice as large as in OECD countries.

Gould and Gruben (1996) utilized the cross-country data over the period 1960-1988. They presented that stronger IPRs protection results in higher levels of economic growth. Moreover, they also indicated a difference among less competitive and highly protected markets, relatively closed markets, highly protected and uncompetitive markets, and open markets. The levels of innovation in those diverse economic structures result in varying impacts on innovation and economic growth relationship.

Adams (2009) examined the IPRs effect on economic growth in 73 developing countries between 1985-2003 using cross-section panel data set over five-year periods. In their research they documented a negative impact of strong IPRs protection on growth. They clearly suggested the result that strengthening the IPRs in developing countriesmay hamper the economic development.

As a result of this brief theoretical framework and empirical literature, we have decided to analyze the effect of IPRs on economic growth in developing countries using the Intellectual Property Rights Index (IPRI) data covering the period from 2008-2019 in 76 developing countries. Doing so, we have also attempted to test the non-linear relationship between IPRs and economic growth following Falvey et al. (2006). The study of Falvey et al. (2006) investigating a threshold level for IPRs' effect on economic growth and the predominant results in the literature suggesting a positive effect of IPRs on economic growth and the research by Adams (2009) has led us to test the U-Shaped relationship between the two variables. Additionally, TWAILers' arguments regarding international law are a hegemonic tool of developed countries over developing ones to limit them have triggered us to seek the non-linearity between them. Therefore, we tried to test whether there is a non-linearity to understand if the positive effect of IPRs on economic growth occurs after a threshold level.

4 METHODOLOGY AND DATA

This study examines the effect of IPRs on economic growth using the fixed effects model with the Driscoll-Kraay estimator for 76 developing countries from 2008 to 2019.[3] Model specification tests are used for an efficient and consistent model in panel data analysis. If the fixed effects model is effective and consistent according to these test results, diagnostic tests play an important role in specifying the estimator. In case there

[3] The countries covered in the sample are as follows: Albania, Algeria, Armenia, Azerbaijan, Bahrain, Bangladesh, Belgium, Benin, Bolivia, Bosnia, Botswana, Brazil, Bulgaria, Burundi, Cameroon, Chad, China, Colombia, Costa Rica, Crotia, Cyprus, Dominican Republic, Ecuador, Egypt, El Salvador, Ghana, Guatemala, Honduras, Hong Kong, India, Indonesia, Jamaica, Jordan, Kazakhstan, Kenya, Kuwait, Macedonia, Madagascar, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova, Montenegro, Morocco, Mozambique, Nepal, Nicaragua, Nigeria, Pakistan, Panama, Paraguay, Peru, Philippines, Qatar, Romania, Russia, Saudi Arabia, Senegal, Serbia, Singapore, South Africa, Sri Lanka, Tanzania, Thailand, Tunusia, Turkiye, Uganda, Ukraine, United Arab Emirates, Uruguay, Vietnam, Zambia, Zimbabwe.

are problems of heteroskedasticity, autocorrelation, and cross-sectional dependence, Driscoll and Kraay (1998) estimator is employed for the results of the fixed effects model. The empirical models based on Falvey et al. (2006) are as follows:

Main effect model:

$$LogY_{it} = \alpha_0 + \alpha_1 LogCAP_{it} + \alpha_2 POP_{it} + \alpha_3 EDU_{it} + \\ + \alpha_4 TRADE_{it} + \alpha_5 INF_{it} + \alpha_6 IPRI_{it} + \varepsilon_{it}, \quad (1)$$

U-Shaped effect model:

$$LogY_{it} = \beta_0 + \beta_1 LogCAP_{it} + \beta_2 POP_{it} + \beta_3 EDU_{it} + \beta_4 TRADE_{it} + \\ + \beta_5 INF_{it} + \beta_6 IPRI_{it} + \beta_7 IPRI^2_{it} + \mu_{it}, \quad (2)$$

Where i and t indicate the country and the year, respectively and ε_{it} and μ_{it} represent the stochastic error terms. The definitions of variables involved in the full text are shown in Table 1. The U-shaped model, unlike the main effect model, includes square of IPRI. In equation 2, in case $\beta_6 < 0$ and $\beta_7 > 0$, there is U-shaped effect between *IPRI* and *LogY*.

Table 1: Definition of Variables

Variable Symbol	***Variable Name***	***Measurement Method***	***Source***
LogY	Economic Growth	The logarithm of GDP per capita (current US$)	World Development Indicators
LogCAP	Capital Formation	The logarithm of gross capital formation (current US$)	World Development Indicators
POP	Population	Population growth (annual %);	World Development Indicators
EDU	Education	The education index from Human Development Index	UNDP
TRADE	Openness	The sum of exports and imports of goods and services measured as a share of GDP	World Development Indicators
INF	Inflation	Consumer prices (annual %)	World Development Indicators
IPRI	Intellectual Property Rights	Index of IPRI	Property Rights Alliance

Source: processed by authors.

Descriptive statistics and correlations are provided in Table 2 and Table 3. This study uses a balanced panel dataset for 76 developing countries over a 12-year period (2008-2019), selecting samples and countries based on data availability of *IPRI*. The correlation results reveal that the dependent variable is not highly correlated with independent variables. However, *LogY* is also positively correlated with *IPRI*.

Table 2: Descriptive Statistics

	LogY	***LogCAP***	***POP***	***EDU***	***TRADE***	***INF***	***IPRI***
Mean	8.4119	23.5350	1.5409	0.6223	88.4775	5.2145	5.0425
S.D.	1.2071	1.7213	1.6117	0.1411	63.2039	9.4887	1.0689
Minimum	5.2900	19.1913	-1.7453	0.232	20.7225	-4.8632	2.5
Maximum	11.3513	29.4517	16.4755	0.924	442.62	255.305	8.462

Source: processed by authors.

Table 3: Correlation Matrix

	LogY	***LogCAP***	***POP***	***EDU***	***TRADE***	***INF***	***IPRI***
LogY	1.0000						
LogCAP	0.4018	1.0000					
POP	-0.0846	-0.0430	1.0000				
EDU	0.7740	0.2759	-0.4074	1.0000			
TRADE	0.5016	-0.0208	-0.0439	0.4102	1.0000		
INF	-0.1751	-0.0256	0.0289	-0.0867	-0.1038	1.0000	
IPRI	0.7238	0.3312	0.1079	0.4761	0.5999	-0.1488	1.0000

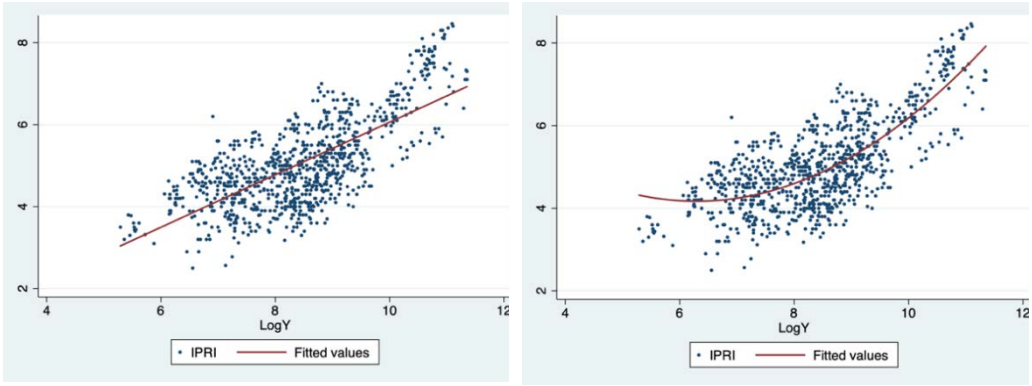
Source: processed by authors.

IPRI is the data providing information about the status of countries' property rights. It has been published yearly by Property Rights Alliance (PRA) since 2007. IPRI consists of Legal and Political Environment (LP), Physical Property Rights (PPR), and Intellectual Property Rights (IPRs). LP covers the information about a country's institutions regarding property rights. PPR and IPRs represent de jure and de facto opportunities in a country upon property rights. The scale of *IPRI* is constituted from zero to ten [0-10], where zero denotes the lowest and most negative value of the property rights system in a country. 2021 IPRI data includes 129 countries (Levy-Carciente and Montanari, 2021).

5 RESULTS

Prior to empirical estimation, Figure 1 plot a positive relationship between *IPRI* and *LogY* in both linear and quadratic, respectively. However, these variables have no U-shaped effect, according to Figure 1b.

Figure 1. The linear and quadratic relationship between IPRI and LogY



a b

Source: processed by authors.

The results of the model specification tests are reported in Table 2. Firstly, the cross-section F test is used between pooled OLS and fixed effect models. F statistics' p-value is less than 0.05, which indicates fixed effect models to select the more conclusive and better model. Secondly, Breusch and Pagan LM test is conducted between the pooled OLS and random effect model. LM statistics' p-value is less than 0.05, indicating that the random effects model is appropriate in this case. Lastly, the Hausman test is applied between the fixed and random effect models. It is found that the null hypothesis of the Hausman specification test is strongly rejected, concluding that the fixed effects model is more consistent and efficient than the random effect model. These results show that the fixed effect model is appropriate to explain the outcomes of the model 1 and 2 (Table 4).

Table 4: Model Specification Tests

Models	***Cross-Section F Test***		***Breusch and Pagan (1980) LM Test***		***Hausman Test (1978)***	
	Statistic	P-value	Statistic	P-value	Statistic	P-value
Model 1: Main Effect	310.10	0.000	3572.94	0.000	411.13	0.000
Model 2: U-Shaped Effect	309.35	0.000	3619.02	0.000	334.02	0.000

Source: processed by authors.

Even though the fixed effect model is the consistent and efficient model for the analysis, linear panel data models commonly have heteroskedasticity, cross-sectional dependence, or serial correlation problems. Therefore, three diagnostic tests are obligatory to check the validity of the model. The results of these diagnostic tests are summarized in Table 5. Firstly, both models' test statistics (BP/CW and White Tests for heteroskedasticity) are significant at the 1% level, indicating the presence of

heteroskedasticity in the data set. Secondly, D-W and LBI test results show that there is a serial correlation problem for the estimation of both models. Finally, findings in Table 6 reveal that the null hypothesis of both Friedman and Frees tests for cross-sectional independence is rejected. In the light of the above explanations, diagnostic test results represent the presence of heterogeneity, serial correlation, and cross-sectional dependence. In this case, the Driscoll-Kraay estimator has robust standard errors to overcome these three problems in the fixed effects model.

Table 5: Diagnostic Tests

Heteroskedasticity	***Breusch and Pagan (1979) / Cook and Weisberg (1983) Test***		***White (1980) Test***	
	Statistic	P-value	Statistic	P-value
Model 1: Main Effect	6.19	0.012	294.76	0.000
Model 2: U-Shaped Effect	5.59	0.018	339.09	0.000
Serial Correlation	Bhargava et. al. (1982) D-W Test		Baltagi and Wu (1999) LBI Test	
	Statistic	P-value	Statistic	P-value
Model 1: Main Effect	0.4944	–	0.7758	–
Model 2: U-Shaped Effect	0.4982	–	0.7811	–
Cross-Sectional Dependence	Friedman (1937) Test		Frees (1995, 2004) Test	
	Statistic	P-value	Statistic	P-value
Model 1: Main Effect	67.370	0.722	12.965	0.000
Model 2: U-Shaped Effect	72.350	0.563	12.647	0.000

Source: processed by authors.

The results in Table 6 obtained from the Driscoll-Kraay estimator show similar signs of coefficients for each control variable in both models. The coefficients of *lnCAP*, *POP*, and *EDU* are positive, whereas the coefficients of *INF* and *TRADE* are negative, which is consistent with our expectations except for *TRADE*.

Regarding the coefficients in the model 1 of Table 6, *IPRI* has a positive and statically significant effect on economic growth. Notably, a unit change in *IPRI* increases *LogY* by 0.1281% statistically at a 1% significance. Therefore, it is evident that *IPRI* promotes the GDP per capita growth process in developing countries. In model 2, whereas the coefficient of *IPRISQ* is positive and significant, the coefficient of *IPRI* is negative and insignificant. According to this result, there is no U-shaped effect from *IPRI* to *LogY*. These results based on the estimation of coefficients are consistent with the findings in Figure 1.

Table 6: Determinants of GDP per capita using Driscoll-Kraay estimator (FE: 76 Developing Countries, 2008-2019)

Variables	***Model 1: Main Effect***			***Model 2: U-Shaped Effect***		
	Coefficients	P-value	t-statistics	Coefficients	P-value	t-statistics
LogCAP	0.4335*	0.000	39.60	0.4336*	0.000	38.93
POP	0.0191*	0.009	3.18	0.0219*	0.005	3.48
EDU	0.5689*	0.007	3.31	0.5809*	0.007	3.32
TRADE	-0.0019*	0.001	-4.73	-0.0019*	0.001	-4.74
INF	-0.0004	0.681	-0.42	-0.0004	0.693	-0.41
IPRI	0.1281*	0.000	6.34	-0.0090	0.876	-0.16
IPRISQ	–	–		0.0143**	0.012	2.99
Constant	-2.6440*	0.000	-9.45	-2.3509*	0.000	-6.33
R-square	0.6407			0.6424		
F statistics	477.35			1160.03		
P-value	0.000			0.000		
Observ.	912			912		

Source: processed by authors.

6 CONCLUDING REMARKS

This study examines the effect of IPRs on economic growth using panel data analysis in 76 developing countries during the 2008-2019 period. The Driscoll-Kraay estimator is conducted for this purpose, considering heteroskedasticity, serial correlation issues, and cross-sectional dependence. The IPRs protection and economic growth debate has been a prolonged dilemma in the existing literature (Neves et al., 2021). Although various researchers have attempted to document the impact of IPRs on growth, we aim to comprehend the nexus in developing countries by utilizing the recent yearly IPRI data. The recent trends in innovation and R&D activities in developing countries have caught our attention to analyze the possible impact of IPRs on economic growth in developing countries.

Furthermore, we have diverged our study from the current literature through underlining the rivalry between traditional economy thought and critical economic perspective. The critical one, TWAIL perspective, has allowed us to emphasize the colonial rule of law in international relations. TWAILers typically refer to the international law as a tool of hegemonic relationship of First World countries over the Third World. In line, they also attribute TRIPs Agreements and IPRs protection as domination vehicles of developed countries on the developing ones. Hence, they claim that IPRs protection favors developed countries and hampers the economic growth in developing countries. This dilemma has led us to analyze the impact of IPRs on economic growth in developing countries with the recent data.

There are two main results of this study. First, the effect of IPRs on economic growth is positive. This result is in compliance with the expectations and consistent with existing studies such as Goldsmith (1995), Leblang (1996), and Lewer and Saenz (2005).

Second, there is no U-shaped effect between IPRs and economic growth, consistent with Falvey et al. (2006). This result indicates that the IPRs have no threshold effect on economic growth. Therefore, protection of the IPRs does not cause any cost to economic growth in developing countries. Also, this result does not support the perspective of TWAIL, in which Chimni (2006) claims that international law to protect the IPRs favors developed countries. This research indicates that the traditional economic thought finds its supporting point in the empirical analysis over the TWAILers' arguments that developing countries are victims of IPRs protection.

In future studies, we may focus on the comparison between developed and developing countries in terms of IPRs protection and economic growth to test the TWAIL arguments. As the yearly updated data may document diverging results from the existing literature, it is noteworthy to emphasize the critical and traditional economic thought perspectives in the future research. Hence, the developing countries should implement stronger IPRs protection to catch the attention from international businesses and producers to safely penetrate their economic structure. The investors, according to the results, generally seek for legal protection of their intellectual property before entering a developing country's market. The more strict IPRs foster the economic growth in developing countries as the R&D investments and innovation are more favored.

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