



# The Effect of Governance on International Trade and the Mediating Role of Business Regulations

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## Research Article

### Abstract

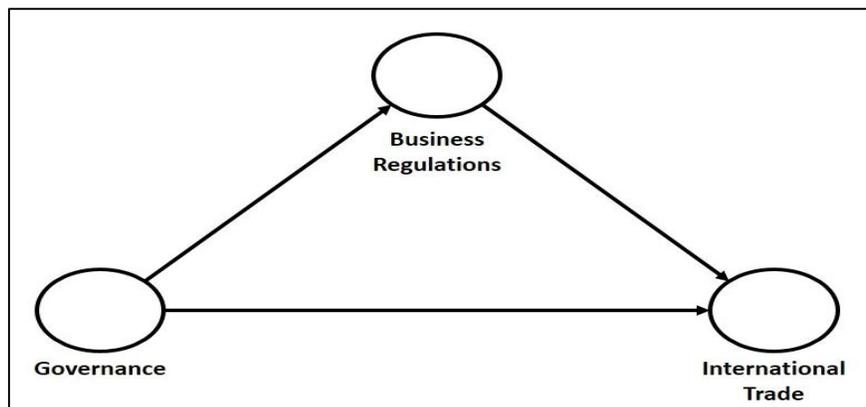
*The purpose of the study is to investigate the mediating role of business regulations in between the relationship of governance and international trade. Data were collected from 181 countries and the partial least squares structural equation model (PLS-SEM) was used to test the hypotheses. It was found that the business regulations practiced by a country significantly influence its international trade, but the governance of the country has a significant indirect influence on its international trade. A full mediation was evident from the results, where the indirect effect of governance on international trade was observed to be fully mediated by business regulations. The study will contribute to guiding governments and regulatory bodies to improve governance and business regulatory environment to facilitate international trade.*

**Keywords:** Governance, Business Regulations, International Trade, World Governance Indicator, Ease of Doing Business Index, PLS-SEM.

### 1. Introduction

International trade is a major economic activity, which exhibits the impact of international activity on the local and global economy. Global economic growth mostly is driven by the extent of international trade (Shan & Sun, 1998). International trade means the exchange of goods and services between countries, which includes the exports and imports of both goods and services (Rugman, Collinson & Hodgetts, 2006). The effects of business regulation over international trade are significant as the magnitude of a country's engagement in global trade to some extent depends on the governance prevails in the country. Governance is the traditional and institutional approach of practicing authority in a country; it can be assessed by factors like- political stability, voice, and accountability, government effectiveness, regulatory control, the rule of law, and control of corruption (Kraay, Kaufmann & Mastruzzi, 2010). Despite the importance of governance to international trade, previous studies showcased the impacts of governance on international trade through the institutional quality or tend to track the impacts of the determinants of governance on international trade (Groot, Linders & Rietveld, 2005; Álvarez,

Barbero, Rodríguez-Pose, & Zofío, 2018; Thede & Gustafson, 2012; Wang, LI & Wei, 2018; Muhammad, D'Souza & Amponsah, 2011; Grechyna, 2017; Yu, Beugelsdijk & Haan, 2015). Similar to public governance, the quality and efficiency of regulation is also an influential factor in developing international trade of a nation. Even public governance may have a significant influence on the business regulatory practices of a nation. One of the ways to study the quality and efficiency of regulatory practices is Ease of Doing Business, which evaluates the procedures for business initiative, receiving a building permit, gaining an electricity connection, shifting property, receiving access to credit, protecting minority investors, paying taxes, engaging in international trade, imposing contracts and solving bankruptcy (The World Bank Group, 2019). Earlier researches on business regulation focused on its impact on foreign direct investment and economy or assessed it as a tool for investment location decisions (Piwonski, 2010; Siddiqui & Ahmed, 2013; Pinheiro-Alves and Zambujal-Oliveira, 2012; Ani, 2015; Corcoran & Gillanders, 2015). Therefore, prior studies left a scope to study the relationship among the trios: public governance, business regulation, and international trade. More preciously, whether the effect of governance on international trade is direct, or is mediated by the business regulation in countries? The purpose of the study is to develop and check a group of hypotheses in which business regulation mediates the relationship between governance and international trade. To date, no research did not seek to find out the role of business regulation in explaining the relationship between governance and international trade. The major contribution of this study toward research on international trade is to discover the nature of impact governance has on international trade. As previous studies showed, the governance definitely has impacts on international trade, but whether this influence is direct or indirect through a mediator, is not identified (Berden, Bergstrand & Etten, 2014). Therefore, the study will explore this particular aspect of the relation. In addition, it will provide guidance for policymakers on how governance influences international trade. Finally, the study will highlight the role of business regulation measures in shaping the relationship between governance and international trade. Previous studies also had identified the role of business regulation in mediating the relationship between the investment environment and FDI (Kofarbai & Bambale, 2016). The paper seeks to assess the role it has in mediating the relationship between governance and trade. In sum, the research proposes a model in which business regulation plays an acute mediating role (see figure 1).



**Fig. 1 Hypothesized model. Arrows represent hypothesized paths.**

## 2. Review of Literature

### 2.1 Business Regulation and International Trade

The business regulation has a significant effect on the inward and outward flow of foreign direct investment (Jovanovic & Jovanovic, 2018; Morris & Aziz, 2011; Corcoran & Gillanders, 2015; Piwonski, 2010). Even the business regulation measure was recommended as a tool for selecting investment location as well as was associated with economic development (Ani, 2015; Pinheiro-Alves & Zambujal-Oliveira, 2012). Most of the studies on business regulation measures tried to assess the relations of the underlying variables of the index with international trade. Studies showed the importance of minimal entry barriers for start-up in trade development (Di Giovanni & Levchenko, 2013; Branstetter, Lima, Taylor, & Venâncio, 2013; Freund & Bolaky, 2008). Even a reduction of 20-25% reduction of total output was apparent as an impact of credit constraints on international trade (Manova, 2013). Different studies are associated with international trade facilitation with factors related to international trade. Among which, studies showed that trade facilitation has a significant impact on the extent of export margin (Feenstra & Ma 2014; Dennis & Shepherd, 2011). Moreover, the trade performance and cost of a nation are also influenced by its trade facilitation (de Sá Porto, Canuto & Morini, 2015; Portugal-Perez & Wilson, 2012; Moisé, Orliac, & Minor, 2011). Contract enforcement is more effective in predicting international trade pattern than the physical resources and labor skill (Nunn, 2007). The past studies revealed that the ease of doing business index has a significant impact on the flow of investment and on selecting investment location as well as several underlying variables of the index also had a significant impact on international trade. The overall effect of the business regulation in the form of ease of doing business on international trade is not evaluated by the previous studies.

*Hypothesis 1: Business regulation has a significant positive effect on international trade*

### 2.2 Governance and International Trade

Governance in the form of institutional quality has a critical impact on international trade (Anderson & Marcouiller, 2002; H. L. De Groot, Linders, Rietveld, & Subramanian 2004; Linders, HL Slangen, De Groot, & Beugelsdijk, 2005; Álvarez, Barbero, Rodríguez-Pose, & Zofío, 2018; Groot, Linders & Rietveld, 2005). International trade faces an inverse effect by corruption as the presence of corruption indicates weak governance. (Torrez, 2002; Ali & Mdhillat, 2015; Thede & Gustafson, 2012; Wang, LI, & Wei, 2018). Contradictory results were also evident in studies where trade openness was developed by reducing corruption levels (Majeed, 2014; Mohtadi & Polasky, 2015; Damania, Fredriksson, & List, 2003). Most of the studies found a positive impact of a stable political environment on international trade. (Abeyasinghe, 2004; Younis, Lin, Sharahili, & Selvarathinam, 2008; Rashid, Looi, & Wong 2017; Grechyna, 2017; Abdella, Naghavi, & Yin Fah, 2018; Muhammad, et al., 2011). Berden et al. (2014) found that voice and accountability and political stability detriment trade. But the regulatory quality positively influences international trade. Previous studies have found a significant relationship between governance and international trade, specifically with the inner dimensions of governance along with some

exceptions. However, the earlier researches did not explore the possibility of an insignificant direct influence of governance on international trade as a whole.

*Hypothesis 2: governance has a significant indirect positive relation with international trade*

If the relationship between governance and international trade is indirect, some other factor may act as a mediator. The governance in nations has a significant influence on the state of business regulation it practices (Groșanu, Boța-Avram, Răchișan, Vesselinov, & Tiron-Tudor, 2015; Cristina, 2014). Similarly, the business regulation practices of a nation influence the international trade of that nation. Therefore, the probable indirect relation between governance and international trade can be mediated by the business regulation of the nation.

*Hypothesis 3: Business regulation mediates the relationship between governance and international trade*

### **3. Method**

#### **3.1 Sample and Procedure**

The study used secondary data from the World Bank and the WTO. In total data of 181 countries around the world and the years, 1996 to 2017 were considered for the study. Samples of this study were collected following the convenience sampling technique. The countries and years were selected based on the availability of data for public access in the secondary databank of the World Bank and WTO. The paper used the mean value of each variable to conduct the study, which calculated the average of data available within the period for each variable of a single country.

#### **3.2 Measures**

The study considered a model based on one exogenous construct and two endogenous constructs. The exogenous construct, Governance was measured by five variables. The World Bank measured Worldwide Governance Indicators (WGI) based on six dimensions-Political Stability and Absence of Violence, Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption, Voice and Accountability (Kraay, Kaufmann & Mastruzzi, 2010). In this model, the voice and accountability dimensions have been dropped due to an insignificant contribution to its latent variable as it had a significant key lower loading of  $\lambda < 0.70$  with the corresponding latent variable, Governance (Ringle, 2006; Garson, 2016; Hair, Hult, Ringle, & Sarstedt, 2016). The rest of the five indicators were treated as reflective measures due to the high internal consistency as all loadings of governance were above the critical value of  $\lambda > 0.70$  (Christophersen & Konradt, 2012). The two endogenous constructs of the model are Business Regulation and International Trade. The Ease of Doing business Indicator is another mechanism developed by the World Bank to evaluate a country's condition to support business or business regulation. The Ease of Doing Business construct measures the processes for business incorporation, getting a building permit, obtaining an electricity connection, transferring property, getting access to credit, protecting minority investors, paying taxes, engaging in international trade, enforcing contracts, and resolving insolvency to assess the domestic business regulatory environment (The World Bank Group, 2019). The international trade construct is consists of four variables- merchandise export,

merchandise import, service export, and service import. Data for these variables were derived from the World Trade Organization.

In fig. 2, the model with the three constructs and the items of respective constructs are depicted. The business regulation construct was measured by variables of ease of doing business index, including: Dealing with construction permits (Y1), Enforcing contract (Y2), Getting credit (Y3), Getting electricity (Y4), Paying taxes (Y5), Protecting minority investors (Y6), Registering property (Y7), Resolving insolvency (Y8), Starting a business (Y9), and Trading across borders (Y10). The International trade construct was measured with variables: Global Merchandise Export (Y11), Global Merchandise Import (Y12), Global service export (Y13), and Global service import (Y14). The Governance construct was measured by variables comprising: Rule of Law (X1), Regulatory control (X2), Political Stability (X3), Government Effectiveness (X4), and Control of Corruption (X5). These variables were measured by calculating the mean value of the respective variable data of each country available from 1996 to 2017.

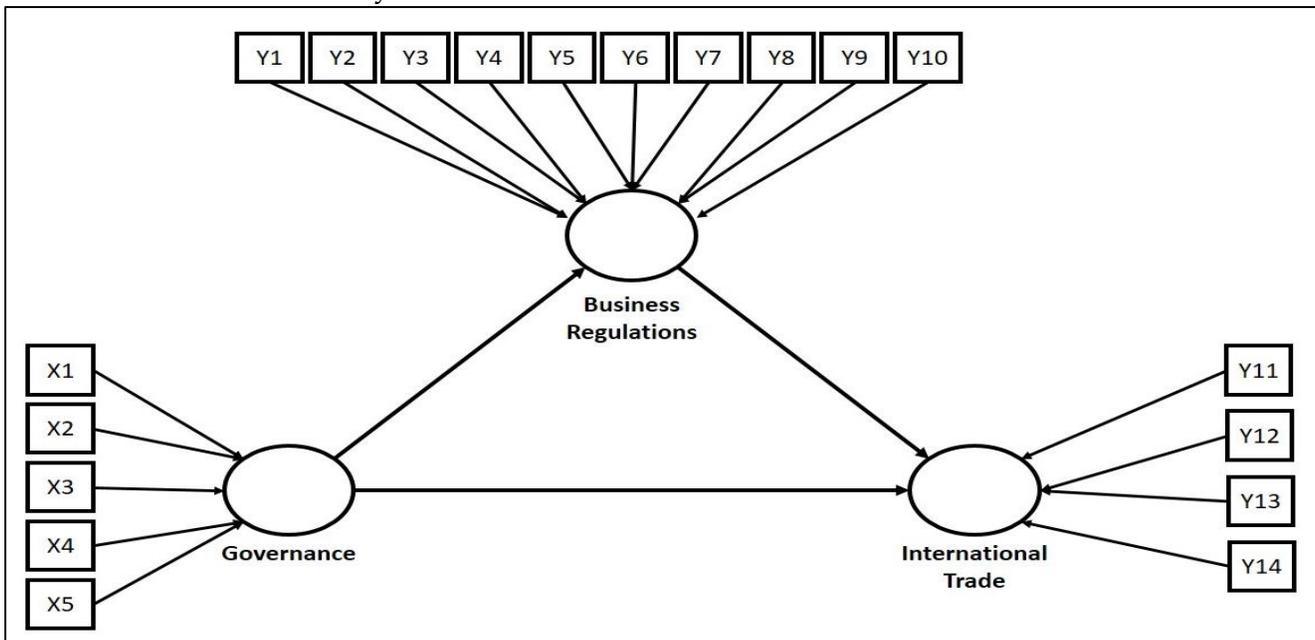


Fig. 1. The Model with the Constructs and Variables

#### 4. Analyses

The Model of the study was tested using the SmartPLS 3.2 structural equation analysis package (Ringle Wende, & Becker, 2015). Nonparametric Partial Least Square Bootstrap method with 10000 samples, in combination with the Partial Least Square Algorithm, was used for path analysis.

PLS-SEM is suitable for this study as it will explore the mediating role of business regulation in the relationship between governance and international trade based on archived secondary data (Nitzl, 2016). Moreover, PLS-SEM is the absence of distributional assumptions in the method as the variables used in the study supported the validity assumptions for PLS-SEM (do Valle & Assaker, 2016; Nitzl, 2016). Finally, the standardized root means square residual (SRMR) value was assessed to check the overall model evaluation or Goodness-of-fit of using PLS-SEM. The

SRMR value was .072, which is below .08 and is deemed a good model fit for the study (Hu & Bentler, 1998).

#### 4.1 Validity Check

The internal consistency and reliability were assessed by appraising the Cronbach's alpha, composite reliability, the outer loadings. Afterward, convergent validity was verified based on the values of the average variance extracted (AVE). Later, Fornell-Larcker Criterion, Cross loading, Heterotrait-Monotrait Ratio (HTMT) were evaluated for Discriminant validity. Eventually, the multicollinearity of the model was assessed by verifying the Variance inflation factor (VIF).

**Table 1 Internal Consistencies/ Reliability of the measurement items**

Assessments	Constructs	Business Regulation	Governance	Trade
<b>Fornell-Larcker Criterion</b>	Governance	0.850	<i>0.946</i>	
	Trade	0.403	0.346	<i>0.843</i>
<b>Construct Variance inflation factor (VIF)</b>	Business Regulation			3.598
	Governance	1.000		3.598
<b>Cronbach's Alpha</b>			.97	.88
<b>Composite Reliability</b>			.98	.91
<b>Average Variance Extracted (AVE)</b>			.90	.71

*Note: The square root of AVE values is shown on the diagonal and printed in italics; non-diagonal elements are the latent variable correlations (LVC).*

In the case of reflective constructs, the composite reliability and the Cronbach's Alpha as shown in table 1, were above .80, which is considered as good (Chin, 1998; Daskalakis & Mantas, 2008; Henseler, Ringle, & Sarstedt, 2012; Hair, et al., 2016; Henseler, Hubona, & Ray 2018). The indicator reliability was verified by checking the loadings of the variables of both reflective and formative constructs. As the table 2 shows, the variables of reflective construct governance and international trade showed loadings above .70 with  $P < .001$  ( $t$ -value  $> 1.96$ ), which is acceptable (Henseler, Ringle, & Sarstedt, 2012). In the case of a formative construct, Business regulation the loadings had a value higher than .50, with  $p < .001$ . For instance, the business regulation construct covers different dimensions, which are not overlapping in nature and all are required to consider for getting a complete picture of business support one can get in society. Hence the all the variables

were considered with these low value of loadings (Garson, 2016; Cenfetelli & Bassellier, 2009; Hair, et al., 2016).

**Table 2 Results of the Structural Relationship of the proposed model.**

Constructs	Variables	Indicator Loadings	VIF	Cross Loadings		
				Business Regulation	Governance	Trade
Business Regulation	Y1: Dealing with construction permits	.65	1.80	0.649	0.597	0.164
	Y2: Enforcing contract	.70	1.99	0.702	0.570	0.338
	Y3: Getting credit	.54	1.85	0.542	0.425	0.294
	Y4: Getting electricity	.84	2.49	0.837	0.706	0.350
	Y5: Paying taxes	.74	2.16	0.740	0.676	0.199
	Y6: Protecting minority investors	.67	2.19	0.673	0.546	0.326
	Y7: Registering property	.58	2.13	0.577	0.485	0.244
	Y8: Resolving insolvency	.84	2.18	0.842	0.679	0.416
	Y9: Starting a business	.75	2.35	0.751	0.655	0.266
	Y10: Trading across borders	.76	2.09	0.758	0.676	0.237
Governance	X1: Rule of Law	.99	23.49	0.828	0.986	0.349
	X2: Regulatory control	.95	12.15	0.860	0.954	0.364
	X3: Political Stability	.84	3.33	0.646	0.835	0.122
	X4: Government Effectiveness	.98	23.49	0.869	0.977	0.410
	X5: Control of Corruption	.97	15.99	0.787	0.971	0.339
Trade	Y11: Global Merchandise Export	.95	13.79	0.430	0.380	0.945
	Y12: Global Merchandise Import	.94	13.59	0.412	0.369	0.941
	Y13: Global service export	.74	4.35	0.238	0.192	0.741
	Y14: Global service import	.72	4.41	0.163	0.095	0.719

Afterward, the convergent and divergent validity were tested by the average variance extracted (AVE). As shown in Table 1, both of the reflective constructs had an AVE of above .70, Whereas an AVE value of greater than .5 is adequate (Chin, 1998; Höck & Ringle, 2006; Hock, Ringle, & Sarstedt, 2010; Henseler, et al., 2018; Hair, et al., 2016). Subsequently, in table 1 the Fornell-Larcker Criterion was verified for discriminant validity. As shown in the table, the upper value (Square root of AVE) is higher than the value (Correlation) below it, therefore, indicating discriminant validity (Garson, 2016). Another measurement, Cross loading was checked to evaluate the discriminant validity. As given in Table 2, each variable had a lower correlation with other latent variables than with its particular latent variable. Thus, making the model appropriate to study (Garson, 2016; Klein & Rai, 2009). Heterotrait-Monotrait Ratio (HTMT) is another way to verify the discriminant validity (Ringle et al., 2015). The HTMT value for two reflective constructs is .33, which is below 0.90. That ensures discriminant validity has been established between a given pair of reflective constructs (Henseler, Ringle, & Sarstedt, 2015; Gold, Malhotra & Segars, 2001; Teo, Srivastava & Jiang, 2008). To check the multicollinearity in the Model, the Variance inflation factor (VIF) values were check. In table 2, the outer VIF values of the variables of a formative construct, Business regulation is <2.50. This means no issue of multicollinearity in the measurement (Ringle, Wende, & Becker, 2014). On the other hand, the outer VIF values of the variables of reflective

constructs, Governance and International Trade, showed a higher VIF value, which indicates a good correlation between the variables (Ringle, et al., 2014). At the structural level, the inner VIF values as shown in Table 1, are <4.0, indicating the absence of multicollinearity (Garson, 2016; Latan, Jabbour, & de Sousa Jabbour, 2017).

## 4.2 Tests of Hypotheses

Means, standard deviations, and correlations for all constructs are shown in table 3. Both of the independent latent constructs have a significant correlation with international trade. Moreover, the governance construct is also significantly related to the business regulation construct.

**Table 3: Descriptive Statistics and Correlation**

Constructs	Mean	Std. Deviation	Business Regulation	Governance
<b>Business Regulation</b>	61.38	13.39		
<b>Governance</b>	-0.055	0.78	.768**	
<b>Trade</b>	34786.36	88000	.355**	.380**

Note. N=181. \*\*p<.01.

To test the three hypotheses, Table 4 and figure 3 can be examined. The first hypothesis assumed that Business regulation has a significant positive effect on international trade and this hypothesis is accepted as the path analysis between the constructs shows a significant and positive relation, see table 4 ( $\beta = .391$ ; t-value=3.43). The second hypothesis that proposed governance has a significant indirect positive relation with international trade and the hypothesis is accepted as the direct relation between governance and international trade in the presence of ease of business is insignificant, given in table 4 ( $\beta = .015$ ; t-value=.108).

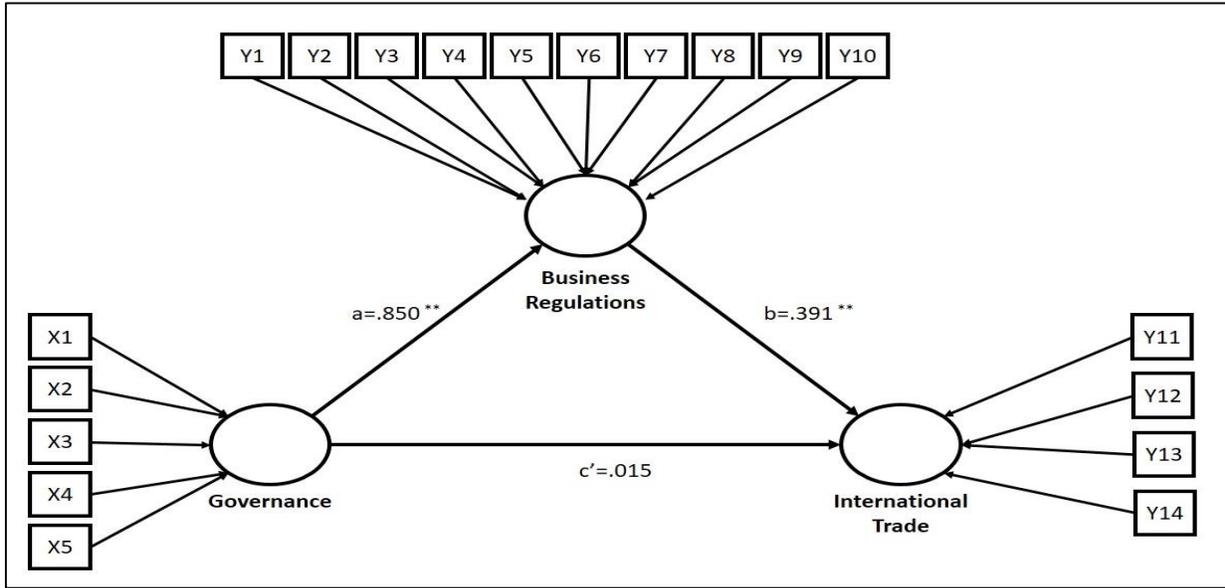
**Table 4: Structural Model**

Procedure	Path	Path Coef.	STDEV	t Value	Bootstrap 95% CI			
					Percentile	BC		
<b>Direct Effects</b>	Governance -> Trade(c')	.015	.14	.108	-.214	.304	-.214	.304
	Business Regulation -> Trade (b)	.391 **	.11	3.43	.106	.545	.106	.545
	Governance -> Business Regulation (a)	.850 **	.02	47.22	.805	.878	.805	.878
<b>Indirect Effect</b>	Governance -> Business Regulation -> Trade (a*b)	.332 **	.09	3.36	.211	.597	.092	.465
<b>VAF</b>			.96					

Note 1 \*\*p<.01. \* p<.05. BC Bias Corrected, CI Confidence Interval, VAF Variance Accounted For.

To test the third hypothesis which assumed that the business regulation mediates the relationship between governance and international trade, the model suggested by (Zhao, Lynch & Chen 2010) and supported by (Hair, et al., 2016) was implemented to verify the mediating effect. Which

involves testing the significance level of indirect effect ( $a*b$ ) to ensure the presence of mediating effect, then the significance of direct effect ( $c'$ ) to verify a full or partial mediation.



**Figure 2: Tested model of mediation**

In table 4, the indirect effect ( $a*b$ ) of governance on international trade through the mediator business regulation is significant ( $\beta = .332$ ;  $t\text{-value} = 3.36$ ). In consequence, indicating the presence of a mediating effect of business regulation on the relationship between governance and international trade. Afterward, to check whether the mediation is full or partial, the significance of direct effect ( $c'$ ) on international trade by governance is verified and as table 4 shows, it is insignificant ( $\beta = .015$ ;  $t\text{-value} = .108$ ). This means the kind of mediation lies in the model is full mediation and only indirect effect exists between the governance and international trade via the mediator-business regulation. In addition to that, the variance accounted for (VAF) value can be used to determine the type of mediation. In the case of VAF, as shown in table 4, the value is 96%, which more than 80%. Thus, ensuring a full mediation in the model (Hair, et al., 2016).

## 5. Discussion

Berden et al. (2014) suggested the requirement of utilizing different dimensions to study the effects of governance on international trade, hence this study focused on the role of business regulation in mediating the relation between governance and international trade. The study provided empirical evidence that governance has an indirect effect on international trade. Further, business regulation acts as a critical mediator in between the relation of governance and international trade. The result shows a theoretical justification for the relationship between governance practiced by a nation and its international trade performance. This result suggests that efforts to develop governance that are focused on developing business regulations may make indeed worthwhile.

Governance of a nation significantly influences the business regulations its practice and has a more significant indirect effect on its international trade. This finding provides empirical support that the development of international trade depends directly depends on business regulations and the facets of governance that influences business regulations. Several scholars witnessed that

developments in institutional quality significantly increased the bilateral trade (Groot, et al., 2004). This study supports the findings and enlightened with some details on how the governance and business regulations influence the international trade of nations. These findings propose major guidelines for governments on how to form governance policies to develop international trade. Primarily, the government should favorably formulate business regulations in order to develop its international trade. Since the development of international trade directly depends on the government's practice in business regulations as supported by the first hypothesis. Furthermore, governance has an indirect relation with international trade, concentrating only on developing governance may not contribute to the development of international trade. Instead, the government must focus only on the dimensions of governance; those have a significant and positive influence on business regulations due to the way business regulation fully mediates the influence of governance on international trade. Consequently, improvement in governance will result in improvements in business regulations, which will improve international trade.

## **6. Limitations and Directions for Future Research**

One limitation of the study is that the study did not analyze the impact of individual items of each construct of the model. For instance, instead of governance studying the influence of the rule of law in the model. It will provide in-depth details of the nature of the relation between the factors. Second, the paper did not cover other factors critical to international trade. Several other factors (like-demography, economic and social factors) can be included in the model. Finally, country sub-groups can be considered to analyze the model. For instance, whether the findings remain the same for developed, developing and least-developed nation can be explored.

## **7. Conclusion**

Indeed, governance plays a critical role in the social and economic development of a country. Governance by its virtue influences many aspects of a nation. Contrary, the business regulations of a nation significantly influence its trade with foreign nations. Governance plays a critical role in shaping this regulatory environment of business and thus, indirectly influences the international trade of countries. From this study, it is evident that business regulation fully mediates the way international trade is influenced by governance. The study will reinstate the importance of governance in improving trade and business environment. It will motivate government and regulatory bodies to improve governance in order to develop a better environment for business and international trade.

**Conflict of interest:** The author declares no conflict of interest.

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