PROSPECTS OF UZBEKISTAN FROM MUTUAL TRADE WITH MIDDLE EAST STATES

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Abstract: The article explores the prospects of Uzbekistan's mutual trade with Middle East states using the Gravity Model of international trade. The Gravity model is a statistical model used to predict the flow of trade between countries based on the size of their economies and the distance between them. The article discusses the potential opportunities and challenges for Uzbekistan in its trade with the Middle East, and provides comprehensive and practical suggestions to boost mutual trade with the Middle East by analysing the Gravity model of trade. The article also examines the role of regional trade agreements, regime of ‘most favored nation’ and common religion in shaping the future of mutual trade between Uzbekistan and the Middle East.

Key words: Gravity model, international trade, Middle East, Uzbekistan, trade flow, mutual trade, distance, free trade agreement, ‘most favored nation’ regime.

Аннотация: В статье исследуются перспективы развития взаимной торговли Узбекистана с государствами Ближнего Востока с использованием гравитационной модели международной торговли. Гравитационная модель — это статистическая модель, используемая для прогнозирования торговых потоков между странами на основе размера их экономики и расстояния между ними. В статье обсуждаются потенциальные возможности и проблемы для Узбекистана в его торговле с Ближним Востоком, а также приводятся всесторонние и практические предложения по развитию взаимной торговли с Ближним Востоком путем анализа гравитационной модели торговли. В статье также рассматривается роль региональных торговых соглашений, режима «наибольшего благоприятствования» и общей религии в формировании будущего взаимной торговли между Узбекистаном и Ближним Востоком.

Ключевые слова: гравитационная модель, международная торговля, Ближний Восток, Узбекистан, товарооборот, взаимная торговля, расстояние, соглашение о свободной торговле, режим “наибольшего благоприятствования”.

Annotatsiya: Maqolada xalqaro savdoning gravitatsiya modelidan foydalangan holda O‘zbekistonning Yaqin Sharq davlatlari bilan o‘zaro savdosini rivojlantirish istiqbollari o‘rganiladi. Gravitatsiya modeli - bu mamlakatlar o‘rtasidagi savdo oqimlarini ularning iqtisodiyoti hajmi va ular orasidagi masofaga qarab bashorat qilish uchun ishlatiladigan statistik model. Maqolada O‘zbekistonning Yaqin Sharq bilan savdo-sotiqdagi potentsial imkoniyatlari va muammolari muhokama qilinadi, shuningdek, savdoning gravitatsiya modelini tahlil qilish orqali Yaqin Sharq bilan o‘zaro savdoni rivojlantirish bo‘yicha har tomonlama va amaliy takliflar keltirilgan. Maqolada, shuningdek, O‘zbekiston va Yaqin Sharq o‘rtasidagi o‘zaro savdo kelajagini shakllantirishda mintaqaviy savdo bitimlari, “eng ko‘p qulayliklar” rejimi va bir din o‘rni ko‘rib chiqiladi.

Kalit so‘zlar: gravitatsiya modeli, xalqaro savdo, Yaqin Sharq, O‘zbekiston, savdo aylanmasi, o'zaro savdo, masofa, erkin savdo shartnomasi, “eng ko'p qulaylik” rejimi.

1. INTRODUCTION

In 21st century a process of globalization can be observed from each part of the world. Due to cheap transport, mass production, up-to-date technology, which significantly increased the quality of human’s life, worldwide fragmentation and incomplete specialization seem to be inevitable features of world economy today. Nowadays, international trade is becoming the key factor of economic development of nations. In the Middle East and Uzbekistan, the development of international trade is closely linked to the prospects of these regions' economies and their membership in regional and international organizations. The Middle East is one of the economically fastest growing regions in the world. In this research we will provide significant data concerning future of international trade and how it will influence the Middle East countries. The purpose of present paper is to analyze the benefits Uzbekistan will gain from the trade with Middle East states by using complex gravity model of trade with both numerical and dummy variables.

2. LITERATURE REVIEW

2.1. International trade in general

In present days the theory of comparative advantages is more common worldwide. ‘A country has a comparative advantage in the production of goods that use relatively large amounts of its abundant factors of production and a comparative advantage in the production of goods that use relatively large amounts of its scarce factors of production,’- is an explanation of factor proportion of Ohlin (1935) which was cited in Harrington (2013). Moreover, product lifecycle theory (Vernon, 1966), asserts products developed in technologically advanced countries, but gradually production shifts to developing countries due to cheap labor. (Hanif, 2021) In general states worldwide, including Middle East countries and Uzbekistan, specialize according abovementioned theories.

2.2. Gravity model

Since Tinbergen (1962) introduced basic gravity model many scientists began to predict trade flows using this method. The gravity model which is based on the concept that the potential for trade between two countries is determined by the size of their economies and the distance between them. Econometric studies using the gravity model have consistently shown that trade flows are higher between countries that are closer to each other and have larger economies. (Tinbergen, 1962)

The Gravity model has been gaining increasing attention in the fields of international trade and economics in recent years. In this article, we will explore the concept of the Gravity model and its potential applications in the Middle East and Uzbekistan.

The Gravity model is a mathematical equation at first developed by German economist Walter Isard and Merton Peck in the early 20th century. (Isard & Peck, 1954) Later Tinbergen (1962) on basis of this equation suggested a gravity theory of trade. (Tinbergen, 1962) The model is based on Newton's law of gravity, which states that the gravitational force between two objects is proportional to the product of their masses and inversely proportional to the square of the distance between them. In economics, this concept is applied to international trade relations, with the "mass" being the economic size of the two countries and the "distance" being the geographic distance between them. The model is expressed as:

$$T = G\frac{(M_1 * M_2)}{D^2}$$

Where T is the expected trade between two countries, G is a constant, M_1 and M_2 are the economic sizes of the two countries and D is the distance between them.

The Gravity model has been used to analyze the patterns of international trade since the 1950s and has been found to be an accurate predictor of the flow of goods and services across countries. It has become an important tool for economists and international trade practitioners, as it can provide insight into the potential for mutual trade between countries.

2.3. Uses of the Gravity model

The Gravity model has many uses in international trade and economics. It can be used to analyze the impact of geographic distance on trade, the effects of changes in the economic size of countries on their trading relations, and the impact of trade policies on the patterns of international trade. It can also be used to forecast the potential for mutual trade between two countries and to estimate the impact of different economic policies on international trade flows.

In addition, the Gravity Model can be used to analyze the effects of membership in regional and international organizations on trade. For example, it can be used to determine the impact of membership in the European Union on trade between European countries. Similarly, it can be used to analyze the impact of trade agreements,

such as the North American Free Trade Agreement (NAFTA), on trade between participating countries.

2.4. Pros and Cons of the Gravity model

The Gravity model has both advantages and disadvantages. On the positive side, the model is an accurate predictor of international trade flows and can be used to forecast the potential for mutual trade between two countries. Additionally, the model can be used to analyze the impact of regional and international organizations on trade, as well as the impact of trade agreements and policies on trade flows.

On the other hand, the model does have some limitations. One of the main drawbacks is that the model does not take into account the cultural and political factors that can influence trade relations between countries. Additionally, the model does not account for the effects of technological advances, such as the internet, on international trade. Finally, gravity model does not take into consideration that usually trading services does not depend on geographic location of the country, and the size of the economy really depends on the share of service sector in its GDP. Due to abovementioned disadvantages in most cases while using multiple regression analysis including gravity equation, it sometimes cannot explain trade flows between countries with high accuracy.

2.5. Membership in Regional and International Organizations

To use all existing potential from international trade, states today form unions which mostly based on common culture, religion, geographic location and history. Membership in regional and international organizations is also expected to play a key role in shaping the future of international trade for the Middle East and Uzbekistan. The Middle East countries are members of the World Trade Organization (WTO) and have signed a number of free trade agreements with other countries. Uzbekistan, meanwhile, is working to deepen its integration with regional organizations such as the Shanghai Cooperation Organization (SCO) and Commonwealth of Independent States (CIS). Membership in these organizations allows these countries to benefit from reduced tariffs and other trade barriers, which can help to boost their exports and attract foreign investment.

There are examples of successful trade relations between countries in the region of Commonwealth of Independent States (CIS). CIS region reached free trade zone stage as an integrational organization. (CIS, 2011) For example, Uzbekistan has strong trade relations with Kazakhstan, Turkmenistan, and Kyrgyzstan. Trade between Uzbekistan and Kazakhstan has been increasing steadily in recent years, with exports from Uzbekistan to Kazakhstan increasing from $ 0,94 billion in 2016 to $1,39 billion in 2019. (Stat.uz, 2022)

Similarly, trade between Uzbekistan and Turkmenistan has grown significantly in recent years, with exports from Uzbekistan to Turkmenistan increasing from $302,78 million in 2018 to $902,02 million in 2021. Trade between Uzbekistan and Kyrgyzstan

has also grown, with exports from Uzbekistan to Kyrgyzstan increasing from $269,73 million in 2018 to $792,04 billion in 2021. (Stat.uz, 2022)

Middle East countries and Uzbekistan are members of Organization of Islamic Cooperation, which covers 57 countries and stimulates mutual trade among them. According to Hanif (2021) the share of OIC countries in global GDP was 8,43% in 2016, which is comparatively low taking into consideration population of the OIC block. (Hanif, 2021) That is why Raimi and Mobolaji (2008) suggest that creation of Muslim Economic Block (MEB) for the OIC region to compete with ever-rising economic unions elsewhere because any single country could never compete against a large economic block. (Raimi and Mobolaji, 2008) It also should be pointed out that the share of international trade of OIC region was 11% in 2016. (Hanif, 2021)

2.6. Examples of successful trade by establishing Free Trade Area

When we analyze trade between Uzbekistan and Middle East countries, we should also consider free trade areas. For instance, The Greater Arab Free Trade Area (GAFTA) is a key factor which has a huge impact on mutual trade among Middle East states. Uzbekistan is not a member of GAFTA, nevertheless it is obvious that GAFTA significantly influences the extra-GAFTA trade flows. Péridy and Abedini (2008) provided readers with general and specific information over the period **1997-2005** concerning integration process in GAFTA, which includes 15 permanent members, 6 potential members and 35 reference countries. Main idea consists of new theoretical approach for gravity equation which proved an increase of regional trade by 20% in GAFTA member-countries. Analysis demonstrated main role-playing actors in regional arena such as Saudi Arabia and the UAE which together account for 50% of total exports within GAFTA; adding Oman, Qatar, Syria and Jordan, which each contribute to about 6-7% of total exports, these 6 countries account to 80% of intra-GAFTA exports. (Péridy and Abedini, 2008) Imports are slightly less concentrated: the UAE is the first importing country (22.3%), followed by Saudi Arabia (10.5%), Bahrain (9%), Iraq (7%) as well as Jordan, Kuwait and Egypt (about 6% each). In fact, over the period 1997-2005, intra-GAFTA exports have risen by **15.1%** at yearly average, whereas world exports have increased by **7.9%** only. It is also worth mentioning that intra-GAFTA exports have increased slightly more than extra-exports. Findings emphasized that “the GAFTA trade impact is significant.” (Péridy and Abedini, 2008, p.869) It means that Middle East countries already succeed in creating free trade area, which should be taken into consideration by Uzbek government and entrepreneurs when it comes to boosting trade flows with Middle East.

2.7. Overview of Middle East’s economic situation

The Middle East is an important trading partner for Uzbekistan, as it is a major importer of Uzbek goods and services. The region has a population of over 380 million

and a combined GDP of around $23.9 trillion. (World Bank, 2021) The region is home to some of the world's largest economies, including Saudi Arabia, the United Arab Emirates, and Iran.

The region is also home to some of the world's leading energy producers, including Saudi Arabia, Iraq, and Iran. The region is also an important source of investment for Uzbekistan, as it is home to some of the world's leading investors, such as Qatar Investment Authority and the Abu Dhabi Investment Authority.

When we analyze Gulf states, we should take into account oil and its impact on trade flows in the Middle East. Tárik (2022) explained in details the effect of oil price volatility on the economies of Middle East countries and the Great Powers. Saudi Arabia and UAE as two of the biggest oil exporters are dependent on oil price volatility, however 'Saudi Arabia has previously developed the "Saudi Vision 2030" plan, which is a strategic framework for reducing Saudi Arabia's dependence on oil, diversifying its economy and developing public service sectors such as health, education, infrastructure, recreation and tourism.' (Tárik, 2022, p.8). And Saudi Arabia is not the only country among Gulf states which is reducing its dependence on fossil fuels' export. (Tárik, 2022)

For Uzbekistan, the Middle East is one of the biggest sources of venture capital and foreign direct investments because it is much easier to trade and invest when both sides have similar culture and one religion. This point of view is supported by Hanif (2021) who states: 'trading of various commodities among Muslims is much more comfortable as compared to non-Muslims'. (Hanif, 2021, p.2) One of the main profits that Uzbekistan may obtain is investment from Gulf States and large experience of crowdfunding, which becomes popular nowadays. The issue of crowdfunding in the Middle East was disclosed by Abdeldayem and Aldulaimi (2021), and their findings confirmed that 'crowdfunding's presence positively impacts fundraising success and that the crowdfunding platforms are considered an effective entrepreneurial finance tool for financing entrepreneurs in their region.' (Abdeldayem and Aldulaimi, 2021)

2.8. Prospects of Uzbekistan's Mutual Trade Based on the Gravity model

Uzbekistan is an emerging economy in Central Asia with a population of around 34,9 million. (World Bank, 2021) It is bordered by Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, and Turkmenistan and has a rich history of trade with its neighboring countries. The country had a GDP of $69,24 billion in 2021 and is the world's largest producer of cotton, uranium, and gold. (World Bank, 2021)

Since Uzbekistan is a diverse economy with a significant population, it has strong potential for mutual trade with Gulf states. However, the distance between Uzbekistan and Middle East countries may be a factor that could limit the intensity of trade between them.

Based on this data, the Middle East and Uzbekistan are expected to continue to play a significant role in the global trade system in the future. The Middle East is home

to a number of large, rapidly growing economies, including Saudi Arabia, the United Arab Emirates, and Qatar. These countries are major exporters of oil and natural gas, and are also investing heavily in other sectors such as manufacturing, services, and tourism.

Uzbekistan, on the other hand, has a more diverse economy, with a strong emphasis on agriculture and the production of textiles, cotton, and other goods. The country is also rich in natural resources such as gold, copper, and oil, which are important exports. In recent years, Uzbekistan has made significant progress in improving its infrastructure and business environment, which has helped to boost its trade with other countries.

In terms of mutual trade, the Middle East and Uzbekistan have a long history of economic cooperation. For instance, modern Uzbekistan was a part of Transoxiana which was conquered by Arabs in eights century. (Britannica, 2023) Since that time Central Asia and Middle East regions had been developing trade relations. However, more than 70 years under Soviet Union government weakened economic relations between Uzbekistan and Muslim majority countries located in the Middle East. (Balci, 2018) The Middle East is a major trading partner for Uzbekistan, with a significant portion of the country's exports going to countries in the region. Uzbekistan, in turn, is an important supplier of goods and services to the Middle East.

Looking ahead, the prospects for mutual trade between the Middle East and Uzbekistan are positive. Both regions are expected to continue to grow economically, and there are opportunities for further collaboration in sectors such as agriculture, manufacturing, and energy.

3. RESULTS

3.1. Used predictors

In order to obtain more accurate econometric model in addition to Gross Domestic Products (in billion USD) of trade partners of the Republic of Uzbekistan and distance (in km) between capitals of Uzbekistan and partner countries, research contains three dummy variables (qualitative parameters) like having common religion – Islam, followed by most population (cr) as in Uzbekistan, existence of free trade agreements (fta), presence of regime of most favorable nation (mfn).

Gravity model contains data of 59 trade partners of Uzbekistan including countries located in Middle East, Europe, North America, South America, Asia, Africa.

R Studio and such R packages as ‘readxl’, ‘DescTools’, ‘fBasics’, ‘lmtest’ are employed in econometric analysis.3

Gravity equation will be in following form:

$$\log(trade\ flow) = \beta_0 + \beta_1 \log(gdp_{uzb} * gdp_j) + \beta_2 \text{ cr} + \beta_3 \text{fta} + \beta_4 \text{mfn} + \beta_5 \log(distance)$$

3.2. Output:

```
Coefficients:
                      Estimate Std. Error t value Pr(>|t|)
log(gdp_uzb * gdp_j)   0.7430     0.1364   5.446 1.30e-06 ***
cr                    -1.8578     0.4851  -3.830 0.000336 ***
fta                    3.4423     0.7149   4.815 1.23e-05 ***
mfn                    1.4744     0.5977   2.467 0.016830 *
log(distance)         -1.7050     0.3752  -4.544 3.14e-05 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 1.621 on 54 degrees of freedom
Multiple R-squared:  0.9121,    Adjusted R-squared:  0.904
F-statistic: 112.1 on 5 and 54 DF,  p-value: < 2.2e-16
```

Source: Author's own calculations in R Studio.

Then:

$$\log(trade\ flow) = 0{,}74\log(gdp_{uzb} * gdp_j) - 1{,}85cr + 3{,}44fta + 1{,}47mfn - 1{,}7\log(distance)$$

From output we can conclude that:

$\boldsymbol{gdp_{uzb}}$- GDP of Uzbekistan in 2021, gdp_j – GDP of trade partners of Uzbekistan in 2021, or economic size of states is positively correlated with an amount of trade flow between Uzbekistan and other countries, it denotes that the bigger the GDP of Uzbekistan and/or GDP of partner state are/is the more is the merchantry.

$\boldsymbol{cr}$ or common religion is negatively correlated with trade amount due to the small quantities of goods and services exported to or imported from Muslim countries, which are mostly located in the Middle East and North Africa. It should be noted that most countries with Muslim majority have joined Organisation of Islamic Cooperation. Negative $\boldsymbol{cr}$ coefficient illustrates that Uzbekistan nowadays is more likely to trade with non-Muslim majority countries than with Muslim majority countries, which shows the existence of huge potential of mutual trade with these states.

$\boldsymbol{fta}$ – free trade agreement has a huge positive impact on mutual trade. Uzbekistan has signed such agreements with post-Soviet countries as Azerbaijan, Belarus, Georgia, Kazakhstan, Kirgizia, Moldova, Russia, Turkmenistan, Ukraine, Tajikistan. (Decree No 3267, 2020)

$\boldsymbol{mfn}$ – regime of 'most favored nation' positively facilitates export and import operations of Uzbekistan.

$\boldsymbol{distance}$ – negatively influences trade.

$\boldsymbol{R^2 = 0,91}$ –given variables describe the trade flow between Uzbekistan and its trade partner by 91%.

3.3. Testing significance of Regression Coefficient

A test of significance – is a procedure which helps to verify null hypothesis by using sample results. (Gujarati, 2003, p. 129)

t-test hypothesis:

$H_0: \beta_i = 0$ – regression coefficients are not significant for given model.

H_1: $\beta_i \neq 0$ – regression coefficients are significant for given model.

$\alpha = 0{,}05$ – significance level, establishes confidence interval which equals to $1 - \alpha = 0{,}95$ or 95%.

If statistic *t* value lies in critical area, then H_0 is rejected and regression coefficient significantly describes dependent variable. (Gujarati, 2003, p. 131)

Critical *t* value for 59 observations with 5 independent variables equals to 2.005746, so the following conditions must be met:

- statistic *t* value > 2.005746,
- statistic *t* value < -2.005746.

```
t value Pr(>|t|)
  5.446 1.30e-06 ***
 -3.830 0.000336 ***
  4.815 1.23e-05 ***
  2.467 0.016830 *
 -4.544 3.14e-05 ***
```

Source: Author's own calculations in R Studio.

Mostly for number of observations more than 30 z-test is used. In our case we have 59 observations as give in Appendix and critical *z* value is 2.005746 and equal to *t* value.

For all independent variables *t*-test and *z*-test is successfully passed.

***f*-test hypothesis:**

H_0: $\beta_i = 0$ – coefficient of determination is not significant for given model.

H_1: $\beta_i \neq 0$ – coefficient of determination is significant for given model.

$\alpha = 0{,}05$ – significance level, establishes confidence interval which equals to $1 - \alpha = 0{,}95$ or 95%. (Gujarati, 2003, p. 131)

Critical ***f* value** for 59 observations with 5 independent variables equals to 2.389444, so the following conditions must be met:

- statistic *f* value > 2.389444.

```
Multiple R-squared:  0.9121,    Adjusted R-squared:  0.904
F-statistic: 112.1 on 5 and 54 DF,  p-value: < 2.2e-16
```

Source: Author's own calculations in R Studio.

112,1> 2,389444, then coefficient of determination is significant.

3.4. Residual analysis

Prerequisites of residuals of the multiple regression model:

1. The probability distribution ε is normal.

2. The variance of the probability distribution ε is constant for all values of x.

3. The mean value of the probability distribution ε is equal to 0. It follows from this assumption that the mean y for a given x is $E(y) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \cdots + \beta_k x_k$.

4. The values of ε do not depend on each other. This assumption implies that a random sample of objects was selected from the population for measurement.

To check residuals for normality we will employ *Jarque-Bera* test. (Gujarati, 2003, p.148)

```
Title:
 Jarque - Bera Normalality Test

Test Results:
  STATISTIC:
    X-squared: 0.047
  P VALUE:
    Asymptotic p Value: 0.9768
```

Source: Author's own calculations in R Studio.

P value = 0,9768 > 0,05 – Null hypothesis is not rejected and residuals of given model are normally distributed.

The mean of residuals in our model is -0.007289687 which is close to zero.

Another popular test applied to examine prerequisites of residuals is Durbin-Watson test. (Gujarati, 2003, p. 467)

```
DW = 1.7499, p-value = 0.1639
```

Source: Author's own calculations in R Studio.

Here p value = 0,1639 > 0,05 which allows to conclude that null hypothesis is not rejected and there is no autocorrelation.

3.5. Challenges of the Gravity Model in the Middle East and Uzbekistan

Despite the potential of the Gravity Model to increase mutual trade between Uzbekistan and Middle East states, there are a number of challenges that need to be addressed. Firstly, the distance between Uzbekistan and them is a major factor that limits the intensity of trade between them. Additionally, the economic size of some countries in the Middle East is much smaller than that of Uzbekistan, which could reduce the potential for mutual trade.

Furthermore, the political and economic situation in the Middle East is volatile, which could lead to uncertainty and instability in the region. This could create a barrier to trade and investment between Uzbekistan and these countries. Additionally, tension among three big powers in the region – Turkey, Iran and Saudi Arabia – for being the leader of Islamic civilization negatively influences to the trade flow and free movement of capital and labor. (Huntington, 1993)

3.6. Main trade partners of Uzbekistan in the Middle East

In 2021 core trade partners of Uzbekistan in Middle East were Turkey, Iran and United Arab Emirates. (World Bank, 2021)

Turkey

Turkey was 4th foreign trade partner of Uzbekistan in 2021 and one of the main destinations through which Uzbek entrepreneurs ship goods and have an access to sea

ports. Main products for export from Uzbekistan to Turkey in 2021 include industrial products – 1376,8 million US dollars, chemical substances – 126,7 million, non-food raw materials (except fuels) – 57,7 million. (Review.uz, 2022) Imports from Turkey encompasses following core destinations: cars and equipment – 820,8 million US dollars, chemical substances – 300,1 million, industrial products – 287,2 million. (Review.uz, 2022) However, the share of services, both exported and imported, was comparatively low – only 87,2 million US dollars. Therefore, Uzbekistan should focus on developing tourism by attracting more Turkish to visit Uzbekistan. Moreover, it is significant to support cooperation in financial and banking systems with Turkey and as a result obtain solid base for joint ventures and entrepreneurs from both sides. Furthermore, logistic part represents a great challenge for land-locked Uzbekistan, that is why Uzbek government works to promote the railway destination Navoi-Turkmenbashi-Baku-Tbilisi-Kars which creates foundation for Uzbek exports to reach sea ports and ship goods to Europe and Middle East. (Tolipov, 2021)

Iran

Islamic Republic of Iran has the second-largest proven reserves of natural gas and fourth-largest reserves of crude oil in the world. (The World Bank, 2022) Iran is a strategic partner of Uzbekistan which allows Uzbek manufacturers to reach sea port Chabahar and all other Middle East states. Export of Uzbekistan to Iran is not as well diversified as import from Iran and encompassed in 2021: Cotton – 131,5 million US dollars, on second place Edible vegetables and certain roots and tubers – only 9,1 million. (Trading Economics, 2022) Nevertheless, Iranian exports to Uzbekistan included in 2021: Plastics – 69,6 million US dollars, Iron and Steel 56,1 million, Machinery, nuclear reactors, boilers – 22,9 million dollars. (Trading Economics, 2022) Fundamental opportunities from cooperation with Iran presents the policy of diversifying Uzbek exports, for instance increasing the amount of textile production, fertilizers and vegetables on Iranian market and establishing close ties in logistics and freight.

United Arab Emirates

UAE are one of the richest oil-exporter countries in the world. However, the government of Emirates well understand that dependence on oil as main revenue creating product is not long-term way to develop economy, that is why for years the Emirates invested money gained from exporting crude oil to improve other positions in economy, especially Dubai now is one of the most popular touristic destinations and business hub which gathered together many leading technological companies together and also one of the most popular touristic destinations for people from Uzbekistan. From trade turnover it is clearly observed that Uzbekistan imports from UAE more than exports. Imports in 2021 mainly accounted as Electrical, electronic equipment – 43,8 million US dollars, Machinery, nuclear reactors, boilers – 22,7 million and Plastics – 20,4 million. (Trading Economics, 2022) Additionally, exports in 2021

reported as Edible fruits, nuts, peel of citrus fruit, melons – 6,94 million US dollars, Pearls, precious stones, metals, coins – 3,4 million, Silk – 1,8 million. (Trading Economics, 2022)

From abovementioned points it can be concluded that the strategy of diversifying exports to destination of Middle East is a core important issue and goal that needs to be achieved by signing free trade agreements, establishing for these countries the regime of most favored nation and improving logistic and freight conditions to reduce transportation costs.

4. CONCLUSION

Overall, the future of international trade in the Middle East and Uzbekistan looks bright. Both regions are expected to continue to be important players in the global trade system, and there are many opportunities for further collaboration and growth. By building on their strengths and leveraging the benefits of membership in regional and international organizations, these countries can position themselves for success in the global economy.

The Gravity model has the potential to be a powerful tool for analyzing international trade relations between countries in the Middle East and Uzbekistan due to 91% probability that change of five variables as economic size of countries, distance between them, existence of free trade agreements between states, operating regime of 'most favorable nation' for mutual trade and presence of Muslim majority explains change in trade flow. The model can be used to forecast the potential for mutual trade between two countries and to analyze the impact of regional and international organizations on trade. In the model *cr* or common religion variable indicates negative coefficient which explains that Uzbekistan involved in trade with Middle East states less than with other countries and reveals the existence of huge potential in trade with this region.

To sum up, it is worth mentioning that Middle East region is one of the biggest potential trade partners of Uzbekistan in long-term perspective due to prediction made by S. Huntington (1993) that differences between civilizations may cause ideological and other forms of conflict which certainly has a huge negative impact on international trade. Despite the challenges of the Gravity model in the Middle East and Uzbekistan, there are a number of strategies that can be used to increase mutual trade between the countries in the region. In our perspective, Uzbekistan should take following actions to gain huge profit from Gulf partners:

- increase its' economic size relative to its neighbors,
- strengthen its membership in regional and international organizations,
- offer an initiative suggesting a raise of the role of OIC as upcoming economic union among member-states,
- improve its infrastructure,

- facilitate the operation of transport corridors,
- sign free trade agreements and decrease both tariff and non-tariff barriers in mutual trade between Middle East countries and Uzbekistan,
- implement special policy which allows free movement (without visa) of scientists, politicians, sportsmen and tourists from Gulf States,
- enhance its exports to the Middle East.

By taking these measures, Uzbekistan will be able to take advantage of the potential of the Gravity Model to increase mutual trade and create stronger economic ties with the Middle East region.

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APPENDIX

Country	trade flow (in millions USD current)	gdp_{uzb} (in millions USD current)	gdp_i (in millions USD current)	mfn	fta	Common religion	d (in km)
Afganistan	673,68	69238,9	20100,00	1	0	1	752
Argentina	60,49	69238,9	487227,34	0	0	0	15433
Austria	105,86	69238,9	480368,40	1	0	0	4173
Azerbaijan	118,90	69238,9	54622,18	0	1	1	1640
Bahrain	0,34	69238,9	38900,00	0	0	1	2398
Belarus	378,83	69238,9	68205,38	0	1	0	3373
Belgium	86,90	69238,9	594104,18	1	0	0	4965
Brazil	350,14	69238,9	1608981,46	1	0	0	13416
Bulgaria	75,60	69238,9	84056,31	1	0	0	3763
Canada	216,90	69238,9	1988336,33	0	0	0	9788
China	7452,51	69238,9	17734000,00	1	0	0	3940
China, Hong Kong Special Administrative Region	50,95	69238,9	369176,40	0	0	0	4678
Czechia	199,27	69238,9	281777,89	1	0	0	4281
Egypt	37,22	69238,9	404100,00	1	0	1	3630
Estonia	52,96	69238,9	37191,17	1	0	0	3654
Finland	57,15	69238,9	297301,88	1	0	0	3663
France	280,81	69238,9	2957879,76	1	0	0	5163
Georgia	128,46	69238,9	18629,37	0	1	0	2037
Germany	765,70	69238,9	4259934,91	1	0	0	4318
Hungary	115,03	69238,9	181848,02	1	0	0	3988
India	490,51	69238,9	3176295,07	1	0	0	1583
Ireland	52,00	69238,9	504182,60	1	0	0	5585

Italy	430,31	69238,9	2107702,84	1	0	0	4645
Iran	431,27	69238,9	231500,00	0	0	1	1674
Iraq	13,74	69238,9	207800,00	0	0	1	2365
Israel	26,35	69238,9	481600,00	1	0	0	3224
Japan	170,64	69238,9	4940877,78	1	0	0	6004
Jordan	0,99	69238,9	45200,00	1	0	1	3136
Kazakhstan	3920,56	69238,9	190800,00	0	1	1	1104
Kuwait	0,93	69238,9	105960,00	0	0	1	2336
Kyrgyzia	953,64	69238,9	8500,00	0	1	1	472
Latvia	232,73	69238,9	39853,50	1	0	0	3637
Lithuania	505,44	69238,9	66445,26	1	0	0	3530
Lebanon	1,64	69238,9	18070,00	0	0	1	3074
Malaysia	75,55	69238,9	372980,96	1	0	1	5325
Netherlands	287,61	69238,9	1012846,76	1	0	0	4890
Oman	0,12	69238,9	85900,00	0	0	1	2204
Qatar	29,05	69238,9	179600,00	0	0	1	2418
Pakistan	181,57	69238,9	348262,54	1	0	1	907
Poland	249,01	69238,9	679444,83	1	0	0	3802
Republic of Korea	1898,76	69238,9	1810955,87	1	0	0	4893
Russia	7550,48	69238,9	1775800,00	0	1	0	2798
Saudi Arabia	17,32	69238,9	833500,00	1	0	1	2790
Singapore	179,19	69238,9	396986,90	1	0	0	5629
Slovenia	76,43	69238,9	61748,59	1	0	0	4360
Spain	157,80	69238,9	1427380,68	1	0	0	5960
Sweden	33,36	69238,9	635663,80	1	0	0	4025
Switzerland	213,36	69238,9	800640,16	1	0	0	4858
Syria	0,03	69238,9	21400,00	0	0	1	3024
Tajikistan	605,55	69238,9	8700,00	0	1	1	307
Thailand	42,80	69238,9	505947,04	0	0	0	4297
Turkey	3409,96	69238,9	815300,00	1	0	1	3063
Turkmenistan	902,03	69238,9	45200,00	0	1	1	1006
Ukraine	705,17	69238,9	200085,54	0	1	0	3134
United Arab Emirates	242,99	69238,9	358900,00	0	0	1	2323

United Kingdom of Great Britain and Northern Ireland	179,39	69238,9	3131377,76	1	0	0	5248
United States of America	426,28	69238,9	23315080,56	1	0	0	10490
Viet Nam	138,61	69238,9	366137,59	1	0	0	4102
Yemen	0,11	69238,9	21100,00	0	0	1	3755

Description:

trade flow – is an amount of trade flow between Uzbekistan and given trade partner in million US dollars current (Stat.uz, 2022),

gdp_{uzb} – is GDP of Uzbekistan in 2021 in million US dollars current (World Bank, 2021),

gdp_i - is GDP of trade partners of Uzbekistan in 2021 in million US dollars current (World Bank, 2021),

mfn - dummy variable which shows whether Uzbekistan established regime of 'most favored nation' with partner country or not (Decree No 3267, 2020),

fta – dummy variable which shows whether Uzbekistan has free trade agreement with a particular country or not (Decree No 3267, 2020),

cr - dummy variable which shows whether in a trade country there is Muslim majority as in Uzbekistan (OIC, 2022),

d – distance between capital of Uzbekistan and capital of trade partner in kilometers (Distance Calculator – How Far It Is?, 2022).