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The Effect of Maritime Tourism on the World Female Unemployment Rate: A Study on the Cruise Sector

E. Arli[1,2], Y. Nemlioğlu[1,3,*]

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ABSTRACT

Female labor force participation and reducing female unemployment are important factors that increase global production and income, thus contributing to growth and welfare. Especially in developing countries, cruise tourism, which is a sub-branch of maritime tourism, contributes to female employment by creating job opportunities for women. In this study, the cointegration and causality relationship between the number of cruise tourists in the worldwide and the world female unemployment rate in 1991-2019 was analysed. According to the results of the analysis, it was revealed that there is a long-term equilibrium relationship between the two series and that a % 1 increase in the number of world cruise tourists in the long term reduces the world female unemployment rate by 0,03531. All kinds of developments and investments in the cruise sector will increase employment opportunities in this field, and therefore will be effective in reducing the world female unemployment rate.

1. Introduction.

As a result of technological developments, mass production and automation in world's production of goods and services, labor-intensive production has been replaced by capital-intensive production, market growth and diversification, the development and change experienced by the globalization have affected labor markets. Unemployment, which has emerged as a result of the insufficient increase in employment in the labor markets compared to the population, has become an important economic and social problem for all countries. In the globalizing world, the free movement of goods, money, services and labor in the economy since the 1980s has caused the labor markets to be adversely affected and unemployment to increase.

Unemployment can be defined as the inability to find a job or being unemployed by a person who is of working age and conditions and actively seeking work and wants to work. In the economy, the number of people who have been unemployed / seeking a job for at least one year and the unemployment rate, which is the ratio of this number to the total labor force, are considered as one of the macroeconomic indicators, and high unemployment rates indicate that the labor market and the economy are inefficient. In addition to the quantitative dimension of unemployment all over the world, there is also a qualitative dimension covering issues such as education, gender, age, and gender discrimination is one of the biggest problems in employment and working life in this context. While in the classical sense, the acceptance of women as labor force and their participation in working life took place by the Industrial Revolution, it was envisaged that women would meet the labor force need that could work with low salary, which emerged as a result of the organization and institutionalization of production. Although female participation in working life and labor force has increased all over the world throughout the process, this increase has not been able to eliminate the imbalance in the number of male/female employees. Even today, women have more problems in participating in working life than men, so female unemployment is high in the world.

Based on its general development and considering the areas

[1]İstanbul University. Molla Hüsrev Mah. Müşküle Sok. No:17 34134 Fatih, İstanbul (Türkiye). Institute of Marine Sciences and Management.

[2]Professor of Marine Management Department. Tel. (+90) 2124400000. E-mail Address: erdal.arli@istanbul.edu.tr.

[3]Assist Professor of Marine Management Department. Tel. (+90) 2124400000. E-mail Address: yasemin.nemlioglukoca@istanbul.edu.tr.

*Corresponding author: Y. Nemlioğlu. E-mail Address: yasemin.nemlioglukoca@istanbul.edu.tr.

it covers today, maritime tourism is defined as the tourism activities carried out by sea vehicles and supported other maritime activities, where the sea is at the center of the touristic tour. The development of sea vehicles and tourism have increased and diversified the opportunities for people to benefit from the sea. Maritime tourism activities, which were previously considered to be carried out by a high-income elite class for entertainment, recreation and sports, have become a part of international tourism movements over time. Cruise tourism, on the other hand, as a sub-branch of maritime tourism, is the tourism sector in which passengers travel on predetermined routes by cruise ships and receive service from the ship.

In this study, the cointegration and causality relationship between the number of cruise tourists in the worldwide and the world female unemployment rate in 1991-2019 was analysed. In the research, it is assumed that cruise tourism, which is one of the sub-branches of maritime tourism, is effective in reducing female unemployment, and the structure and value of this effect are tried to be determined by analysis. In order to realize the aim of the research, the data on the world female unemployment rate was obtained from the Organization for Economic Development and Cooperation (OECD) and the World Bank (WB), and the data on the number of cruise tourist was obtained from the Cruise Market Watch. Since there is no study in the literature that uses analytical data on female unemployment and maritime tourism or cruise tourism, it is thought that the study will make a difference in the field and fill the deficiency. As a result, a policy proposal is made to raise awareness on this issue.

2. Female unemployment.

According to the International Labor Organization (ILO), every person should have a job where they can meet their basic needs and provide them with the opportunity to live a decently decent life. In the United Nations (UN) Economic and Social Council (ECOSOC), it was emphasized that employment provided in conditions of freedom, equality, security and dignity for women and men is directly important and effective in combating global poverty and increasing economic and social welfare all over the world (UN, 2022). Multinational institutions and organizations such as UN, ILO, WB and European Union (EU) consider reducing unemployment, combating poverty, protecting and supporting the rights of disadvantaged groups as priority areas in order to ensure economic development and global welfare. While women's working increases the production and income levels of societies, it is seen that the Gross Domestic Product (GDP) and savings rates are high in countries where female labor force participation at a high level. In the 2003 UN World Youth Report, it is stated that as well as the fact that women have a great impact on the labor force of their countries, gender inequality is also effective in education and employment, therefore, female unemployment rates are high in countries where there is gender discrimination, and the female labor force is directed to the informal sector and low-paid jobs (UN, 2003). The informal sector has been defined by the ILO (2002:11-12) as business areas in which non-formal employment and non-regulated labor force carry out subsistence economic activities in permanent or temporary jobs in the industry, commerce and service sectors in the public/private sector. Analyses by UN Women and the UN Development Program reveal that worldwide approximately 435 million women and girls live on less than US$ 1,90 per a day, and unemployment is a vital problem for women (UN, 2020: 1-7). UN wants from the member states to take measures for reducing female unemployment and developing the female labor force market in the world that will facilitate women's access to education, training, health, family planning and working, enabling to exercise their social, economic, cultural, civil and political rights. UN has determined the economic empowerment of women as one of the 4 basic approaches in the UN Women's Strategic Plan 2022-2025, which is determined to ensure gender equality and support empowerment of women for sustainable development. In particular, working with women's organizations, the private sector and trade unions to support active female participation and leadership in the economy and reduce female unemployment is accepted as the main tool within the program (UN, 2022:7). EU emphasizes that ensuring the participation of women and men in the labor market within the scope of employment policies; improving the quality of business processes and outputs; reducing unemployment throughout the union; developing a skilled labor force responsive to labor market needs; increasing female labor force participation rate in the labor market and women economic independence; ensuring gender equality in the labor market; reducing gender salary, earnings, and income disparities; combating women's poverty and violence against women and supporting women; promoting gender equality, women's rights and social balance in society (EU, 2018: 8-43-45-50).

Although female labor force participation depends on macroeconomic variables, the supply-demand balance in the labor market, employment policies, legal enforcements, public and social structure, and even personal and cultural characteristics, female unemployment is basically directly based on gender inequality. Today, gender inequality is accepted as the main cause of negativities such as female unemployment, unemployment, low quality and unproductive jobs, insecure work and deprivation of labor rights. Urbanization and reduction in agricultural employment; lack of education or low education; not having the qualifications required by the labor market; gender-based inequalities and division of labor; non-employment growth in economies; low demand for female labor force; privatizations and narrowing of business in the public sector; female/male salary inequality or low; inability to provide partial employment opportunities; lack of regulations to ensure balance family and working life; deficiencies in labor laws and regulations adversely effect on female labor force participation in the labor market and increase female unemployment rates. By the development of the capitalist system, relations of production impose a sexist division of labor on working life and women are excluded from social production, except in extraordinary circumstances. In addition, prejudices against women about working effect on employment policies and women are seen as low and unqualified labor force. While women contribute to

the economy by working formally or informally in every sector, the value and amount of their labor and production are not reflected in the numbers. In particular, female labor, which has been neutralized, is basically reflected in unemployment rates. Women are forced to choose between being unemployed and forms of employment such as low salary, insecure and unorganized work, salary inequality, and partial employment. This necessity causes number of female employees to remain at a limited level, the increase in female unemployment, the inefficiency and decrease in quality of the female labor force, and the restriction of long-term employment. These sexist approaches to women are formed and strengthened even before they join the labor force, so women become the natural component of unemployment.

Although there is no consensus that there is a positive bidirectional relationship between female labor force participation and economic development, researches have revealed the results of the existence of this relationship. Female labor force participation and reducing female unemployment are important factors that increase the gross world product and thus contribute to global growth and welfare. As a matter of fact, while the rate of female labor force participation in the world is 44,6 % in 2020, this rate is 32,3 % in undeveloped countries and 51 % in OECD countries consisting of developed and developing member countries (WB, 2019; ILO, 2020). However, the economic and social crises experienced all over the world and especially in developing countries primarily hit the female labor force; it causes low-educated women to shift to the informal labor force and become unemployed in the next. Therefore, in countries where female unemployment rate is high, income, savings and production indicators weaken, and the country's global competitiveness is adversely affected. According to Gawronska-Nowak et al. (1998: 13-15) socio-economic development should be ensured in reducing the regional unemployment rate, because structural dynamics in the economy cause high regional unemployment rate in the short run. Kyei and Gyekye (2011: 60) emphasized that an individual's gender, education, age and race characteristics are an important factor in being unemployed. According to Selim et al. (2014:21-22) as a result of their analysis, they determined that the variables of age, gender, education and health status have a significant effect on the probability of being unemployed. Niemi attributed the fact that female unemployment is higher than male unemployment basically to 3 reasons: the first is that unemployment, defined as Frictional Unemployment, is higher for women than for men, due to layoff and re-employment. The second is unemployment in the female labor force, mainly due to the lack of specific training and female layoffs during recessions on the economy. The third is, high levels of Structural Unemployment are the occupational and geographical immobility of female labor force. In addition, she stated that economic fluctuations are more effective on female unemployment (Niemi, 1974: 331-339). Hill (1983: 459) stated in her study that the female labor force has shifted to informal sectors due to the lack of international legal regulations on female employment. Mincer (1962: 65; 1984: 30) revealed that women prefer to participate in the labor market when it is compulsory and in his study covering the years 1960-1980 in 12 developed countries, female employment is associated with fertility, family relations, salary and growth. Goldin (1995: 88) stated in her study that depending on economic development, female labor force participation decreased during the beginning of economic development and increased later on, as women's education levels and job successes increase, the income effect decreases, but the substitution effect increases. MacDonald (1999: 68) stated in his study that women work in partial, seasonal, high-cycle or intermittent jobs, where working in a job plays a secondary role in women's lives, or women are in the position of supplementary income in the household. Tsani et al. (2012: 13) examined in their study covering Southern Mediterranean countries, the relationship between female labor force participation and economic growth, and determined that female labor force participation increases during periods of high economic growth. However, in the world where goods, money and labor are globalized, large producers' shifting their production from developed countries to undeveloped countries, which is the main reason for cheap labor, has partially reduced female unemployment rates in undeveloped countries. However, besides this decrease, it is observed that the female labor force, which is preferred as a cheap and flexible labor force, also leads to informal employment. On the other hand, Zeren and Kılınç Savrul (2018: 102) found in their study covering data in 1991-2014 an asymmetric long-term relationship between female labor force participation and female unemployment rate and economic growth.

Uçak et al. (2018: 154) draws attention to the fact that female unemployment is directly related to the level of development of countries, and indirectly related to socio-economic, political and legal enforcements, sectoral and individual preference. Factors such as the exclusion of women from the labor force by gender discrimination, their inability to receive adequate education, the fact that the role assigned to women in the family is higher than that of men, social pressure, marriage, having children and raising children can be cited as the reasons for the low female participation in the labor force (Şahbaz Kılınç, 2015: 128). Önder (2013: 47-51) emphasized that low salary, social insecurity, patriarchal family structure, low education level and gender inequality are the most important factors in female unemployment. Discrimination against women in the labor force on the basis of gender, age, education and ethnicity causes women to be unemployed more. In the relationship between female unemployment and education, it is also stated that there is a positive relationship between women's education level and female labor force participation rates, and that education level is less important than men's in female employment (Biçerli, 2005: 65). In addition, all over the world, female unemployment exceeds male unemployment rates in all types of education, but the difference between male and female unemployment rates decreases as the level of education increases. Yenilmez and Kılıç (2018: 69) concluded in analyses that education has a direct effect on female unemployment, and educated female labor force undertakes the task of eliminating household income loss due to increased unemployment in economic crises. In their study, Taşçı and Darıcı (2010: 298) determined that the probability of being unemployed in urban

women is higher than that of men, and there is an inverse-U relationship between age and unemployment. Cattan (1991: 8) stated that the biggest barriers to female participation in the labor force are the inequality of childcare and work-sharing within the family, and that the layoff and unemployment rates among women between the ages of 25-45 increase. It is known that the gender discrimination mentality continues to be a major negative factor in female unemployment and participation in the labor force all over the world. Lewandowska-Gwarda (2018: 195) states that non-economic (social) factors affect the level of female unemployment and that the determinants of female unemployment vary by geographical location. In countries, other than developed countries, such as Ethiopia, Bangladesh, Indonesia, Thailand, Greece and Turkiye, the difference between male/female employment rates is over 20 % (Erdut, 2005: 40). If a woman's income by entering the labor market is higher than the sum of the expenses incurred as a result of her work, women participate in the labor force. In the opposite case, women refuse to participate in the labor force (Önder, 2013: 48). When the studies in the literature are examined, it is seen that gender inequality is effective on unemployment rates, there is a negative relationship between female unemployment rates and economic development/growth, and education has a direct effect on female unemployment.

In the sectoral distribution of employment over the world by gender, more job opportunities are provided to the female labor force in the agriculture and service sectors. This is due to the fact that women in rural areas provide high labor force in agriculture, especially in undeveloped countries, and it is easier to provide suitable jobs for women in the service sector in developing and developed countries. Tourism is also seen as the most suitable sector for the female labor force in terms of quality within the service sector. Labor-intensive service-type jobs, which are seen as an area of work for women based on gender, pave the way for more women to work in the tourism sector. According to the data of the World Travel and Tourism Council (WTTC, 2020), the tourism sector provides direct and indirect employment, accounting for 10,3 % of the world's total employment. 54,2 % of this employment is provided by the female labor force. The tourism sector constitutes an important area for female employment, as it is seasonal, part-time, temporary and needs less qualified labor compared to other sectors. In addition, the tourism sector, which constitutes opportunities for female participation in the labor force in developing countries, plays an important role in reducing female unemployment and thus in strengthening women's socio-economic status.

Table 1: Number of the World Female Unemployment Rate by Years.

Year	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
	4,94	5,04	5,33	5,66	5,84	5,93	6	6,15
	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
	6,24	6,03	6,08	6,29	6,4	6,3	6,21	5,93
Rate	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
	5,67	5,59	6,12	6,07	5,95	5,92	5,89	5,77
	2015	**2016**	**2017**	**2018**	**2019**			
	5,82	5,86	5,77	5,55	5,51			

Source: World Bank (WB, 1991-2019).

3. Cruise tourism.

Although cruise tourism, which is a part of maritime tourism, does not attract enough attention in the maritime economy, it is a sector that has grown rapidly in recent years. Cruise tourism is defined as a leisure activity that includes tours made by visiting different ports by a ship whose primary purpose is passenger transportation, for a certain fee (Wild and Dearing, 2000: 316-320). At the same time, the word "Cruise" can be explained as a cruise or boat trip for pleasure or vacation, stopping at certain ports on a planned route at sea. Cruise tourism, which is the fastest growing and most active area of travel and tourism, is a type of sea voyage in national and international waters, where various touristic options are offered to its customers by cruising time and routes (Marti, 2004: 200).

Cruise tourism, a type of travel that dates back to the 1840s, began with The Peninsula and Oriental Stream Navigation Company (P&O) offering a recreational cruising in 1844; in the following years, the first US-based cruising was made in 1867 by the steamship "Quacker City" departing from New York. As a type of entertainment preferred by the elite class, it became a New York-based tour by the ship in the 1920s, and a world tour with the West Indies (Caribbean Islands), Canary Islands, Mediterranean and Norwegian fjords routes in the 1930s (Laua and Sun, 2020: 340; Stopford, 2009: 502; Sun at.al. 2011: 748). The 1960s, became a turning point for modern cruise tourism, and in this period, with the start of regular passenger flights by airline companies, cruise ships in maritime passenger transportation have gained a structure that serves luxury touristic coastal and sea excursions for accommodation and entertainment. Today, cruise tourism takes place in 3 main regions, namely Caribbean, Mediterranean and Southeast Asia/ Oceania, in sub-regions of Alaska, Scandinavia, South America, South Africa, Northwest Europe, Bermuda, Canary, Hawaii and Indian Ocean Islands. By the increase in income level, passengers with a high quality of life and previous cruise experience have made these travels a routine (usual), which has increased the demand for this type of tourism. The increasing demand for sea travel has made the cruise market more competitive and has led cruise companies to seek new marketing strategies and to build and invest in new, large and modern ships (Peručić, 2019: 90). As a result, cruise tourism has become sea tourism with modern designed ships, various land and sea activities and new cruise routes in accordance with customer expectations. Cruise tourism contributes not only to the regional but also to the global economy through direct and indirect expenditures. The market economy created by cruise tourism can be examined in three parts. These are;

- Income from the expenses of cruise passengers,
- Income from ship crew's expenses of goods and services,
- Income from ship-related expenses.

Table 2: The Contribution of the Cruise Sector to the World Economy.

Passenger and Crew Visits	148.41 M
Contribution to Total Employment	1.16 M
Total Direct Purchases	72.02 B (USD)
Contribution to Total Wages and Salaries	50.53 B (USD)
Contribution to Global Economy	154.46 B (USD)

Source: CLIA, The Economic Contribution of the International Cruise Industry Globally in 2019.

See Table 2. according to CLIA 2019 data, the number of global cruise passengers increased by 4,3 % compared to the previous year and reached 148.4 million. Of this amount, 29.7 million are boarding passengers, 96 million are transit passengers and 23 million are crew members. The average daily expenditure of passengers on the ship is USD 100, and at ports it is USD 385. This sector provided employment to 1.166.213 people in 2019, and new jobs emerged due to developments in cruise tourism, and more than 1 million employees earned USD 50.5 billion in revenue.

Table 3: Number of International Cruise Passengers by Years.

Year	Passengers Number	Change %	Year	Passengers Number	Change %
1980	1.430.000		**2005**	11.180.000	6,8
1985	2.152.000	50,4	**2006**	12.006.000	7,3
1990	3.774.000	75,3	**2007**	14.625.000	21,8
1991	4.168.000	10,4	**2008**	15.779.000	7,8
1992	4.385.000	5,2	**2009**	17.216.000	9,1
1993	4.728.000	6,9	**2010**	18.421.000	6,9
1994	4.800.000	1,5	**2011**	19.377.000	5,1
1995	4.721.000	-1,5	**2012**	20.335.000	4,9
1996	4.970.000	5,0	**2013**	20.976.000	3,1
1997	5.380.000	8,2	**2014**	21.556.000	2,7
1998	5.868.000	9,0	**2015**	22.558.800	4,6
1999	6.337.000	7,9	**2016**	24.178.300	7,1
2000	7.214.000	13,8	**2017**	25.178.000	4,1
2001	7.499.000	3,2	**2018**	26.504.600	5,2
2002	8.648.000	15,3	**2019**	27.509.000	3,7
2003	9.526.000	10,1	**2020**	7.092.000	-74,2
2004	10.460.000	9,8	**2021**	13.906.000	96,0

Source: Cruise Market Watch, 1980-2021 Data.

See Table 3. the annual passenger capacity growth rate of international cruise tourism between 1990 and 2019 is average of 7 % and the number of tourists, which was 1.4 million in 1980, reached 27.5 million in 2019 with a high and regular increase. According to Cruise Market Watch's data on the origin of passengers participating in international cruise tourism rates are North America 48 %, Europe 25 %, Asia 16,7 %, Australia-New Zealand 5,8 %, South America 3,5 % and Middle East-Africa 1 %. The companies with the highest share in the market are Carnival by 42 %, Royal Caribbean International by 23.6 % and Norwegian Cruise Line by 9.5 %. Average spend by passengers on the 7-day tour is USD 1.714, USD 497 on board and USD 750 at ports (Cruise Market Watch, 2021). However, cruise tourism has suffered a great loss due to the negative impact of the global Covid-19 pandemic, which started at the end of 2019 and continued in 2020-2021. As of 2021, the sector started to recover, and there was a 96% growth compared to the previous year, and as of 2022, the demand for trips increased with the removal of the restrictions. It is estimated that the number of cruise passengers will increase to 31.7 million in 2022 and to 38.7 million in 2027 (Cruise Industry News Annual Report, 2021).

For many years, except for the nurses, stewardesses and switchboard operators on cruise ships, the majority of the employees consisted of men. The participation of women in the labor force on cruise ships gained importance in the 1980s as a result of the globalization of the maritime sector and the emergence of the demand for female labor force. By the increase in the participation of female passengers in cruise tourism, female employees began to be employed, especially in areas such as receptionists, restaurant and cabin crew, and beauty centers. The reasons for female employees to enter the maritime tourism sector differ according to the region/country they are in. While Southeast Asian and Eastern European women prefer to work on cruise ships for economic reasons, the majority of North American and Western European women work on ships for affordable touristic travel (Chin, 2008:13). According to the results of Zhao's research on cruise ship employees, 17 % of the ship personnel participating in the study are women working in hotels and catering services. At the beginning of the 2000s, the rate of women working on the cruiser in the Mediterranean was 25 % (Zhao, 2002: 17). According to Wu's study, 19 % of the employees on cruise are women. 40 % of the women participating in the research work in guest services, 23 % in cabin services, 20 % in food and beverage services and 17 % in other departments and all in junior jobs. The average age of women is 30, making up only 13 % of senior workers (Wu, 2005: 6). In the report of the Association of Women Travel Executives (AWTE, 2016: 6) covering the years 2005-2015, the rate of female in the management of ship and tour operator companies in the United Kingdom was examined and it was observed that the rate of female board membership increased from 12 % in 2005 to 26 % in 2015 and the statistics show an improvement in the representation of women over time.

4. Methodology.

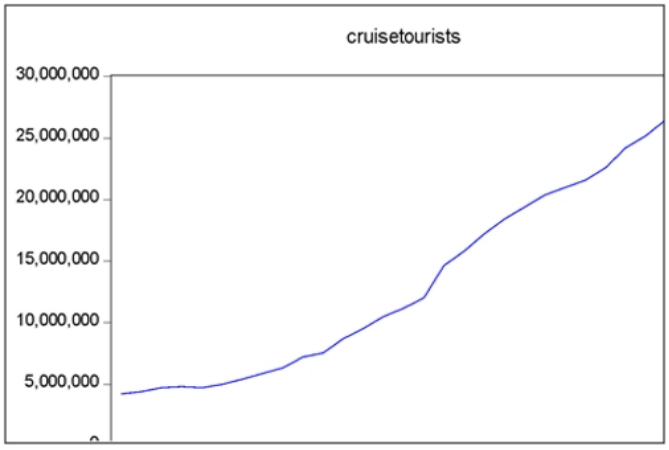
In this study, it is examined whether there is a cointegration relationship between the number of cruise tourists in the worldwide and the world female unemployment rate in the years 1991-2019. It is assumed that cruise tourism is effective in reducing female unemployment, and the structure and value of this effect are tried to be determined by analysis. For this aim, the following hypothesis has been established, and the Johansen System Cointegration for the test of the hypothesis and VECM analysis for the correlation estimation coefficient have been applied. Eviews package program was used in the analysis of the tests. In order to realize the aim of the research, the data on the world female unemployment rate was obtained from the Organization for Economic Development and Cooperation (OECD, 1991-2019) and the World Bank (WB, 1991-2019), and the data

on the number of cruise tourist was obtained from the Cruise Market Watch (1991-2019 Data).

H0: There is a cointegration relationship between the number of cruise tourists in the worldwide and the world female unemployment rate in the years 1991-2019.

See Fig. 1. and 2. the level graphs of the series of the world cruise tourist number and the series of the world female unemployment rate in the analysis.

Figure 1: The level graphic of the series of the world cruise tourist number.



Source: Authors.

Figure 2: The level graphic of the series of the world female unemployment rate.

Source: Authors.

Panel data analysis was used in the study in which the relationship between the number of cruise tourists in the worldwide and world female unemployment was examined, and the ranking for the applied method and econometric analyses is as follows;

- ADF-The Augmented Dickey-Fuller and PP-The Phillips-Perron unit root tests in order to determine the stationarity of the series,
- Breusch-Godfrey Serial Correlation LM Test in order to determine the presence of autocorrelation in series,
- Johansen System Cointegration Test in order to determine the presence of cointegration in the series,
- VECM analysis in order to determine the long and short-term relationship between the series.

4.1. Unit Root Tests (Stationarity) of The Series.

The stationarity of the series means that the mean, variance and autocovariance of a series do not change in different time periods. From this point of view, the results obtained do not reflect the real relationship due to the spurious regression problem in the models estimated by non-stationary time series (Granger and Newbold, 1974: 119). Therefore, first of all, the stationarity of the series should be examined. Various tests are used to analyse the stationarity of the series. Augmented Dickey-Fuller Test, Philip-Perron, Kwiatkowski-Phillips-Schmidt-Shin and Ng-Perron tests are mainly used for this aim (Bulut and Özdemir, 2012: 215).

Unit Root Tests (Stationarity) of The Number of Cruise Tourists.

See Table 4.5.6.7. ADF-The Augmented Dickey-Fuller and PP-The Phillips-Perron unit root test results of the worldwide cruise tourist number series in 1991-2019.

Table 4: Number of Cruise Tourists ADF Unit Root Test-Level-Intercept.

Lag Length: 0 (Automatic - based on SIC, maxlag=6)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3,057559	1.0000
Test critical values:	1 % level	-3,689194	
	5 % level	-2,971853	
	10 % level	2,625121	
*MacKinnon (1996) one-sided p-values.			

Source: Authors.

Table 5: Number of Cruise Tourists ADF Unit Root Test-1.Difference-Intercept.

Lag Length: 0 (Automatic - based on SIC, maxlag=6)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3,151949	0,0345
Test critical values:	1 % level	-3,699871	
	5 % level	-2,976263	
	10 % level	-2,627420	
*MacKinnon (1996) one-sided p-values.			

Source: Authors.

Unit Root Tests (Stationarity) of The World Female Unemployment Rate

See Table 8. ADF-The Augmented Dickey-Fuller and PP-The Phillips-Perron unit root test results of the world female unemployment rate series in 1991-2019.

Table 6: Number of Cruise Tourists PP Unit Root Test-Level-Intercept.

Bandwidth: 3 (Newey-West automatic) using Bartlett kernel			
		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		2,250537	0,9999
Test critical values:	1% level	-3,689194	
	5% level	-2,971853	
	10% level	-2,625121	
*MacKinnon (1996) one-sided p-values.			

Source: Authors.

Table 7: Number of Cruise Tourists PP Unit Root Test -1. Difference-Intercept.

Lag Length: 0 (Automatic - based on SIC, maxlag=6)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3,151949	0,0345
Test critical values:	1 % level	-3,699871	
	5 % level	-2,976263	
	10 % level	-2,627420	
*MacKinnon (1996) one-sided p-values.			

Source: Authors.

Table 8: The World Female Unemployment Rate ADF Unit Root Test-Level-Intercept.

Lag Length: 0 (Automatic - based on SIC, maxlag=6)			
		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2,769071	0,0756
Test critical values:	1 % level	-3,689194	
	5 % level	-2,971853	
	10 % level	-2,625121	
*MacKinnon (1996) one-sided p-values.			

Source: Authors.

When the first differences of the related series are taken according to the unit root test results applied for the series of the world cruise tourist number and the series of the world female unemployment rate in 1991-2019, both series become stationary at the 1. Difference-Intercept levels. Therefore, in the case of rejecting the H0 hypothesis for ADF and PP tests, it turns out that the series is stationary. In this context, it is understood that for two separate tests, the series are stationary when the 1. difference is taken at the 5 % significance level (Polat and Günay, 2012: 208; Gökmen and Çömlekçi, 2018: 283).

4.2. Auto-Correlation LM Test.

See Table 9. The results of the Breusch-Godfrey Serial Correlation LM Test performed to determine whether there is autocorrelation in the series.

Table 9: Breusch-Godfrey Serial Correlation LM Test.

F-statistic	1,261651	Prob. F (2,24)	0,3013
Obs*R-squared	2,663788	Prob. Chi-Square (2)	0,2640

Source: Authors.

According to the table, as the probe values are greater than 0,05, it is concluded that there is no autocorrelation in the series.

White Test for Residual Heteroskedasticity (No Cross Terms).

Table 10: VEC Residual Heteroskedasticity Tests (Levels and Squares).

Included observations: 25		
Joint test:		
Chi-sq	df	Prob.
28,98964	30	0,5181

Source: Authors.

See Table 10. Since p=0,5181>0,01, the absence of fixed variance hypothesis can be accepted at 0,01 error level. In other words, there is no problem of changing variance in the model (Mert and Çağlar, 2019).

Determining the Optimal Lag Length.

See Table 11. The analysis results obtained to determine the most optimal lag length.

Table 11: Optimal Lag Length.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-466,1089	NA	3,93e+12	34,67473	34,77072	34,70328
1	-374,8082	162,3124*	6,12e+09*	28,20801*	28,49598*	28,29364*
2	-372,0548	4,486965	6,75e+09	28,30036	28,78030	28,44307

Source: Authors.

According to table, it is understood that the most optimal lag length is 1 according to the other criteria, especially the AIC criterion.

4.3. Cointegration Test.

In order to determine the presence of cointegration in the series between the number of world cruise tourists and the world female unemployment rate in the years 1991-2019, the Johansen System Cointegration Test has been applied and obtained results.

Table 12: Johansen System Cointegration Test.

Series: DLOGKAD DLOGTUR Lags interval (in first differences): 1 to 1 Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0,05 Critical Value	Prob.**
None *	0,611264	31,65725	25,87211	0,0085
At most 1	0,238702	7,091002	12,51798	0,3351
Trace test indicates 1 cointegrating eqn(s) at the 0,05 level * denotes rejection of the hypothesis at the 0,05 level **MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors.

Table 13: Unrestricted Cointegration Rank Test (Maximum Eigenvalue).

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0,05 Critical Value	Prob.**
None *	0,611264	24,56625	19,38704	0,0080
At most 1	0,238702	7,091002	12,51798	0,3351

Source: Authors.

See Table 12. and 13. according to the results of both Trace and Maximum Eigenvalue test statistics, it was determined that there was a cointegration relationship between the two variables at the 1 % significance level. According to this result, it can be said that there is a long-term equilibrium relationship between the two series.

4.4. Vecm Analysis Results.

In order to determine the long-term and short-term relationship estimation coefficient between the two variables that are the subject of the research, the VECM analysis, which was considered with 2 lags, has been applied and obtained results.

Table 14: VECM long-term relationship estimation results.

Included observations: 26 after adjustments Standard errors in () and t-statistics in [ ]	
Cointegrating Eq:	CointEq1
LOGKAD (-1)	1,000000
LOGTUR (-1)	0,035315
	(0,02035)
	[1,73506]
C	-2,354252

Source: Authors.

See Table 14. according to the long-term VECM estimation results, the t-statistical value for the number of world cruise tourists, which is the independent variable, is 1,73506 > 1,64, and the long-term effect of the world cruise tourist number variable on the world female unemployment rate is significant at the 0,10 error level.

The long-term estimation equation is;

World female unemployment rate = 2,354252 - 0,035315 number of world cruise tourists According to the result of the equation, a 1 % increase in the number of world cruise tourists in the long term reduces the world female unemployment rate by 0.035315.

See Table 15. According to the table, the negative and significant coefficient of C (1) reveals that the VECM model is useful and significant. In addition, the coefficient C (1) shows that 42,9 % of the short-term imbalance or shock effect on the world female unemployment rate, depending on the number of world cruise tourists, will stabilize in the long term. Based on the number of -0,429212 the coefficient of CoinEq1; 1/0,429212 = 2,329 and it is revealed that the imbalance between the two series will reach equilibrium after 2,329 periods. Since the data

Table 15: VECM Short-Run Relationship Coefficient Equation.

D (LOGKAD) = C (1) * (LOGKAD (-1) + 0,0353148807501* LOGTUR (-1) - 2,35425167045) + C (2) *D (LOGKAD (-1)) + C (3)* D (LOGKAD (-2)) + C (4) * D (LOGTUR (-1)) + C (5) * D (LOGTUR (-2)) + C (6)				
	Coefficient	Std. Error	t-Statistic	Prob.
C (1)	-0,429212	0,104180	-4,119926	0,0005
C (2)	0,320543	0,149559	2,143255	0,0446
C (3)	-0,123089	0,159509	-0,771673	0,4493
C (4)	0,008730	0,115450	0,075620	0,9405
C (5)	0,250914	0,113659	2,207595	0,0391
C (6)	-0,017137	0,011594	-1,478088	0,1550

Source: Authors.

are annual, it is concluded that an imbalance between the two series will reach equilibrium after approximately 2-2,5 years. In addition, the fact that the Wald test below is significant reveals that there is a causal relationship from the number of cruise tourists to the world female unemployment rate.

Table 16: Wald Test.

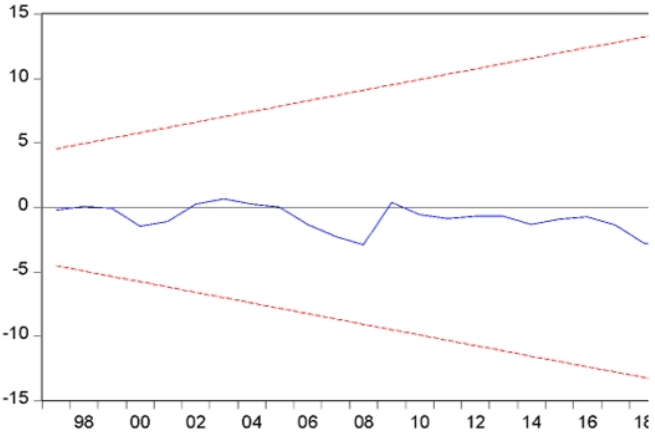
Equation: Untitled			
Test Statistic	Value	df	Probability
F-statistic	6,460014	(3,20)	0,0031
Chi-square	19,38004	3	0,0002

Source: Authors.

4.5. Cusum and Cusumq Test Results.

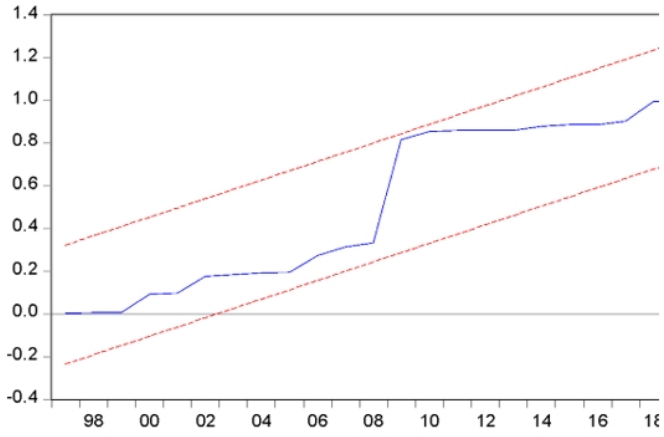
In order to determine structural instability between the two variables that are the subject of the research, CUSUM and CUSUMQ tests, has been applied and obtained results are as follows in the graphical results;

Figure 3: CUSUM Test.



Source: Authors.

Figure 4: CUSUMQ Test.



Source: Authors.

See Fig. 3. and 4. according to the above CUSUM and CUSUMQ test results, it is understood that both series are in a equilibrium and stable structure. In addition, it can be said that while one variable does not destabilize the other variable, it has a significant contribution to the continuation of the stability of the other variable.

Conclusions.

In this study, the cointegration and causality relationship between the number of cruise tourists in the worldwide and the world female unemployment rate in 1991-2019 was analysed. According to the results of the applied Johansen cointegration test, it was determined that there was a cointegration relationship at the 1 % significance level between the two variables, according to the results of both Trace and Maximum Eigenvalue test statistics. According to this result, it has been revealed that there is a long-term equilibrium relationship between the two series. In addition, according to the results of CUSUM and CUSUMQ tests, it was determined that there was no unstable equilibrium deviation between the two series when all years were taken into account. ADF and PP unit root test results also showed that the series were stationary and could return to an equilibrium and stable structure in the face of a shock they might encounter. In addition, as a result of the VECM analysis, it has been determined that 42,9 % of an imbalance or shock effect that will be experienced in the short term depending on the number of world cruise tourists on the world female unemployment rate will reach equilibrium in the long term between 2-2,5 years. In addition, the fact that the Wald test was significant also revealed that there is a causal relationship from the number of world cruise tourists to the female unemployment rate. Finally, according to the VECM long-term estimation result, it is understood that 1 % increase in the number of world cruise tourists reduces the world female unemployment rate by 0,03531. This study shows the effects of cruise tourism on the world female labor force participation rate and female unemployment. In future studies, it can be examined how this tourism area, which provides a very high income and output, contributes to the world and country economies by comparing it with inflation, national income, growth, unemployment and investment data. According to these results, by evaluating the economic structures, suggestions and practices for the policies to be implemented for investment and development activities in this field will be determined.

In the labor force, which is one of the factors of production, the inactivity of the female labor force causes loss of production, weak growth, and therefore a low level of economic development and social welfare. The participation of women in the labor force makes a great contribution to sustainable development and economic growth. All over the world, reducing female unemployment, balancing the male-female labor force and eliminating inequality will ensure economic growth, social welfare and sustainable development. For this reason, states should carry out sustainable development programs that combat both gender discrimination and unemployment and provide work areas where women/men can work efficiently. Worldwide, more jobs are provided to the female labor force in the agriculture and service sectors. Tourism, as one of the most suitable sectors for female labor force in the service sector, paves the way for more women to work in the labor-intensive service type business group. The tourism sector, which constitutes opportunities for female participation in the labor force in developing countries, plays an important role in reducing female unemployment and thus in strengthening women's socio-economic status. As a growing branch in maritime tourism, the cruise sector also contributes to female employment by creating job opportunities for women. All kinds of developments and investments in the cruise sector will increase employment opportunities in this field, and therefore will be effective in reducing the world female unemployment rate. In this context, political approaches and processes for the development of maritime tourism and cruise tourism, especially in undeveloped and developing countries, should be included in macroeconomic planning and put into practice.

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