



# Bryant University

HONORS THESIS

## Economic Growth and Cultural Attitudes Towards Women: An Empirical Investigation

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**ABSTRACT**

This study explores the relationship between cultural attitudes towards women and national GDP growth, across several countries. Data from the World Values from 2017 through 2020 wave has been utilized to determine cultural attitudes, and data from the World Bank and USAID has been utilized for building the economic growth model. The purpose of this study is to inform policy makers regarding the effects of policies that are pro gender equality and to identify the effects of gender inequality on economic growth, independent of other economic factors. In addition, this study also investigates the relationship between cultural attitudes towards women and other economic outcomes of interest, including women's labor force participation and wealth outcomes. The most important result of this study was the relationship established between positive attitudes towards women and wealth outcomes, indicating to policy makers that promotion of pro-gender equality policies may be beneficial to increasing wealth.

## **INTRODUCTION**

Cultural and economic attitudes towards women vary greatly from nation to nation, even when controlling for levels of economic development or any other economic factor. The goal of this study is to investigate how these cultural and economic attitudes towards women impact economic growth, along with the women's labor force participation rate, and wealth outcomes, when controlling for other economic factors. If attitudes towards women have a positive effect on growth, then this may be a signal to economists and policy makers around the world, to encourage more positive attitudes towards women, in order to reap the benefits of increased economic growth. The fight for gender equality is a pressing issue around the world and is one of the United Nations sustainable development goals (United Nations 2022). If the governments of these nations could find economic incentive to promote more positive attitudes towards women, then it is likely that many of these governments would take advantage of this positive effect.

This paper will first explore the past literature about cultural attitudes towards women and economic growth, beginning with the effects of cultural values on economic outcomes. The study will then explore cultural attitudes towards women and their effect on economic outcomes, considerations for motherhood, case examples of women's labor force participation and economic growth, and finally the determinants of economic growth, all within the literature review. Next, the research question and methodology of the study will be explored, identifying the factors to be utilized in each of the three models. Followed by an in-depth discussion of the results of these regressions. Finally, the conclusions section will include the major conclusions, takeaways, and policy implications for this research.

## **LITERATURE REVIEW**

### The Effects of Cultural Values on Economic Outcomes

Throughout history, one of the defining features of different societies has been the values that they each hold. These values influence every aspect of the culture, including the outcomes that it can produce.

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Values which influence economic outcomes of a nation can be broken down into two categories, individual preferences, which exist at the level of the individual, and political preferences, which reflect attitudes towards the way that government should be run.

According to Guiso, Sapienza, and Zingalesd (2006), “We distinguish between values that influence economic preferences (such as fertility or labor participation preferences)—which can be thought of as parameters of a person’s utility function—and political preferences (such as preferences for fiscal redistribution). Culture, thus, can affect economic outcomes through both these channels” (p. 37). Political preferences are likely to reflect the political outcomes of nations, so this variable must be controlled for when analyzing how individual preferences towards women, within a culture, influence economic growth.

Several studies have found connections between cultural backgrounds and types of economic outcomes, including willingness to complete workplace duties. According to Ichino and Maggi (2000), “The prevalence of shirking within a large Italian bank appears to be characterized by significant regional differentials” (1). A relationship between shirking and region of origin displays a relationship between an individual's culture and their willingness to work and to what degree that they are willing to do so. Two other studies that also found relationships between cultural attitudes and economic outcomes are from Fernández and Fogli (2005), and Fernández, Fogli, and Olivetti (2004). Fernández, Fogli, and Olivetti (2004) found that men growing up in homes where mothers worked, were significantly more likely to have wives who participated in the labor force. Fernández and Fogli (2005) explored the effects of cultural proxies on first generation immigrants and labor force outcomes for women, using prior women's labor force participation rate and fertility rates as cultural proxies, and economic indicators of women’s labor force participation rate as control variables. These studies found a relationship between past female labor force participation and fertility outcomes with those of modern outcomes, within the same cultural proxies, and the impacts of men growing up with working mothers on female labor participation, respectively.

An additional study from Ferraro and Cummings (2007), found differences in the economic behavior of Navajo and Hispanic groups, including spending, even when controlling for demographic differences, including economic indicators of economic behavior. This study

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used the ultimatum game, a commonly used tool in behavioral economics, to determine the differences in bargaining behavior between the two ethnic groups. In the ultimatum game, each player is assigned to the role of either proposer or responder, and the proposer is given 10 dollars to split between themselves and the responder, who will decide whether to accept or reject the proposer's offer, where rejection leads to an outcome of zero dollars for both players. This study was conducted in Albuquerque, New Mexico with 60 Hispanic participants and 60 Navajo participants. These studies lay the foundation for the claim that economic outcomes are influenced by culture.

### Cultural Attitudes Towards Women and their Effects on Economic Outcomes

One particularly important aspect of cultural values are the attitudes that a culture has towards women, and their role in society. Cultural discrepancies between nations can lead to significantly different economic outcomes for women, particularly women's labor force participation rate, and the nations in which they reside. A study from Miles (2019) looks at all OECD member nations using three separate models to determine women's labor force participation rate, one model with only economic factors, one with only cultural factors, and another with both the economic and cultural factors included as independent variables. According to Miles (2019), "societal attitudes towards work, in addition to gender roles, are an important part of a woman's decision to join the labor force" (p.22).

Cultural and economic attitudes affect not only the outcomes for women, but for nations. Gender inequality in areas like education have been highly correlated with poorer economic outcomes for nations, including economic growth, and other analysis of microeconomic factors have shown a relationship between reducing gender inequality at the level of the firm and the household, and improved economic outcomes for these firms and households (Klasen 2018). This study was performed using a systematic review of over 250 studies relating to gender inequality, performed over the period 20 years prior to the study. This study discovered discrepancies between outcomes using macroeconomic and microeconomic analysis of the factors, concluding that it is important to address gender inequality issues on both the macro and micro level in future studies.

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According to Nicole M. Fortin (2005), “Anti-egalitarian views are found to display the strongest negative association with female employment rates and the gender pay gap”. Fortin reached this conclusion by creating three separate models with women’s labor outcomes as the dependent variable, using the 25 OECD nations. The first model looks at women's labor outcomes in terms of hours and wages, as determined by a set of cultural factors, the second model looks at the relationship between the gender employment gap and societal norms, and the gender pay gap and cultural factors. It follows logically from these two correlations that nations with an increased proportion of anti-egalitarian attitudes, can be expected to have worse economic outcomes than a nation with a larger proportion of egalitarian attitudes, *ceteris paribus*.

### Consideration for Motherhood

When observing the cultural attitudes towards women and the effect of these attitudes on outcomes for women and the nations in which they reside, it is important to consider motherhood, and its impact on economic outcomes. While motherhood has been associated with more negative economic outcomes for women, not all of this variation can be explained by micro-level differences between working mothers and women who are not mothers (Boeckmann, Misra, & Budig 2014). To quantify this difference in outcomes, a macroeconomic analysis of cultural attitudes must be utilized. According to Boeckmann, Misra, and Budig (2014), “Work-family policies and cultural contexts are crucial for understanding how children shape women’s employment”.

### Case Examples of Women in the Labor Force

In cases of economic growth, there are three forms the women's labor force participation rate commonly exhibits, over the period of economic growth; a concave U shape, linear growth, or linear decline. Examples of these women's labor force participation outcomes can be observed in the United States, Japan, and India, respectively.

The United States experienced a period of consistent WLFPR growth from the 1880s up until nearly the 2000s, at which point the women’s labor force participation rate began to slowly

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decline (Fernández 2013). Social shifts around attitudes towards women and mothers, including legal and cultural shifts, helped to bring about this initial increase in the women's labor force participation rate (Fernández 2013). According to Raquel Fernández (2013), “This social transformation can be seen everywhere, from changes in laws governing women’s work ... to the depiction of married women in literature and the popular press”. Fernández (2013) addresses a specific cultural question, which seems to be highly correlated with the increase in women’s labor force participation from 1940 all the way up to the year 2000, “Do you approve of a married woman earning money in a business or industry if she has a husband capable of supporting her?”(p. 473) As the proportion of those who answered yes to this question increased, the labor force participation rate of women also increased in the United States. After the year 2000 the labor force participation rate of women slowly declined by over 3% up until the year 2016 (Black, Schanzenbach, & Breitwieser 2017). The study finds that women are receiving more educational attainment than at any point in history, and this makes them less tied to the labor force, but the study was unable to find a viable conclusion for why this decrease has happened across all types of women, including women 25-54 (Black, Schanzenbach, & Breitwieser 2017).

In Japan, women's labor force participation has increased in a linear fashion since the 1970s, while Japan has experienced economic growth. Two cultural shifts have been attributed to a portion of this growth, which occurred from the 1990s through the 2000s in Japan. The first of the cultural shifts that have contributed to this growth include, “an increasing fraction of Japanese respondents who believed that working mothers (in comparison to non-working mothers) could establish relationships with their children that were just as secure... the fraction rose from 78 percent to 86 percent” (Shambaugh, Nunn, & Portman 2017) (p.7). The second was a shift in the attitudes of Japanese citizens towards income contributions to households from both the husband and the wife, “[T]he fraction who agreed that both husbands and wives should contribute to household income increased from 31 percent to 39 percent” (Shambaugh, Nunn, & Portman 2017).

In India, a linear trend of decreasing women’s labor force participation rate can be observed alongside their recent economic growth. A large amount of this growth is attributed to the



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services sector in India, which has caused a disconnect between economic growth and labor growth (Lahoti & Swaminathan 2016). As labor has seen little growth, and many women in India lack the necessary skills to fill these new roles, the women's labor force participation rate has suffered (Lahoti & Swaminathan 2016). Although much of this change can be attributed to India's specific type of economic growth, societal and cultural attitudes have also been noted as having a significant role in women's employment in India, "Societal norms and attitudes exert a powerful influence but are not easily amenable to policy interventions, at least in the short term. Changing social perceptions regarding gender roles is a long-term agenda and one that cannot be confined only to labor market outcomes" (Lahoti & Swaminathan 2016) (p.191).

### Determinants of Economic Growth

Measuring economic growth and determining the factors that contribute to economic growth is a challenge faced by many economists over the past several decades. One of the largest challenges faced is the issue that different countries have different determinants of economic growth. One-way economists deal with this issue is by dividing countries into several groups, developing nations, developed nations, and the nations of Southeast Asia and Central Europe, which take on a middle ground role between the developed and developing nations.

In a study from Anyanwu (2014), using data from 53 African nations over 3-year periods between 1996 and 2010, and data from China from 1980 to 2010, creates a model of economic growth for developing nations, and compares these factors with the factors that have influenced China's massive economic growth over a three-decade period. The model utilized was a log-log model, with GDP per capita growth as the dependent variable and initial real GDP per capita, government consumption expenditure as a percentage of GDP, the investment rate, official development aid as percentage of GDP, foreign direct investment as a percentage of GDP, total trade a percentage of GDP, external debt as percentage of GDP, secondary school enrolment, inflation rate, institutionalized political regime, government effectiveness, urban population, domestic credit to the private sector as a percentage of GDP, agricultural materials price index, metals price index, oil price index, and the industrial materials price index as independent variables. The study found domestic investment, ODA to

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GDP, secondary school enrollment, government effectiveness, urban population, and metal price index to be statistically significantly related to GDP per capita growth for the African sample (Anyanwu 2014). When using pooled OLS regression, Domestic investment to GDP, ODA to GDP, secondary education enrollment, gov effectiveness, urban population, and the metal price index to be statistically significantly positively related controls.

In a study from Checherita-Westphal and Rother (2012), using data from 12 countries that use the Euro over the time period from 1970-2008, found that governmental issues, like debt levels, trade openness, and government savings are positively and significantly related to GDP per capita growth for developed nations. The empirical model used for developed nations included GDP per capita growth as the dependent variable, and government debt, government balance, private savings, and trade openness as the independent variables of interest for the study, along with a plethora of economic control variables (Checherita-Westphal & Rother 2012).

In a study from Fetahi-Vehapi, Sadiku, and Petkovski (2015), a model is created to attempt to relate trade openness to economic growth in southeastern European nations, when controlling for other economic variables. The control variables used in this study, when compared to models of economic growth for developing and developed nations, are slightly different as follows; human capital, gross fixed capital formation (GFCF), Active Population, and the FDI (Fetahi-Vehapi, Sadiku, & Petkovski 2015). One interesting conclusion of this study to keep in mind is that population was found to be negatively and significantly correlated with economic growth for these southeastern European countries. The study also found GDP per capita in the prior year, gross fixed capital formation, and human capital to be statically significant and positively related to economic growth.

A study from Barlow (1994) finds no correlation between levels of population growth and economic growth and suggests that there is most likely not a relationship between the two variables. This study does not explore the relationship when looking at the population growth metrics lagged by the length of a generation, which may have some relationship, given the relationship between increased population and increased human capital. This relationship must be further investigated in order to truly understand it.

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The theory of convergence, which is suggested by the findings of Barro (2003), suggests that countries with lower GDP per capita will grow faster than countries with high GDP per capita. Under this theory, smaller economies will grow at higher rates, relative to their larger economic counterparts, leading to all economies theoretically converging into one size. This suggests that wealth will have an impact on growth outcomes.

### **DATA AND METHODOLOGY**

#### Introduction to the Data

This empirical research was conducted using cross sectional data from the World Values Survey 2017-2020 and USAID data from 2017-2020. The data was analyzed using multiple regression analysis in STATA and summary statistics for each of the variables are listed below in Figures 1 and 2. Figure 1 includes the summary statistics for the components of the Women's Index, as well as the Women's Index itself. Figure 2 includes the summary statistics for the dependent variables, as well as the economic independent control variables, the three dependent variables being listed in bold.

<b>Variable</b>	<b>Question</b>	<b>Average</b>	<b>Standard Dev.</b>	<b>Min</b>	<b>Max</b>
Q28	Pre-school child suffers with a working mother	0.4335	0.1937	0.088	0.877
Q29	Men make better political leaders than women do	0.3392	0.2068	0.052	0.812
Q30	University is more important for boys than girls	0.1736	0.1272	0.008	0.595

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Q31	Men make better business executives than women do	0.3049	0.1905	0.034	0.763
Q33	Job Scarce - Men should have more right to a job than a woman	0.326	0.2316	0.014	0.894
Q37	Duty towards society to have children	0.4274	0.2169	0.036	0.892
Q249	Democracy: Women have the same rights as men	0.1757	0.0888	0.026	0.492
Women's Index	Basic Average of Other Values	0.3115	0.156	0.061	0.681

*Figure 1 – Women's Index Components Summary Statistics*

<b>Variable</b>	<b>Average</b>	<b>Standard Dev.</b>	<b>Min</b>	<b>Max</b>
Population Growth	0.4997	1.0201	-3.13	3.2
GDP (b)	1080.474	2953.308	3.218	19479.620
GDP (b) (y-1)	1014.242	2770.306	3	18695.111
Capital Formation (%GDP)	21.4304	5.6859	3.5	42.84
Corruption	51.6567	20.17015	10	89
Infant Mortality	10.2148	11.5162	1.6	63.3

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Education	76.5641	16.7512	23.47	97.9
Patent Applications	34820.85	176012	1	1393815
<b>GDP per Capita</b>	<b>23184.01</b>	<b>22315.38</b>	<b>1678.04</b>	<b>86197.37</b>
<b>Women's Labor Force Participation Rate</b>	<b>0.5082</b>	<b>0.1334</b>	<b>0.1118</b>	<b>0.7022</b>
<b>Economic Growth</b>	<b>0.0713</b>	<b>0.0589</b>	<b>-9.374</b>	<b>23.294</b>

*Figure 2 – Dependent Variables and Economic Controls; Summary Statistics*

Q28, Q29, Q30, Q31, Q33, Q37, and Q249, are questions regarding the cultural attitudes of the nation towards women. Each question is represented on a 0-1 scale, with higher numbers representing more negative attitudes towards women. The values of all of these responses were averaged together to create the Women's Index, which will be referred to as WI. Population growth is expressed as a percentage, GDP is in billion 2022 US dollars, and GDP prior year is the GDP in the previous year, also in billions of 2022 US dollars. Capital Formation is the gross fixed capital formation rate as a percentage of GDP, and corruption is a measure of perceptions of corruption in the country, on a scale of 1-100. Health is represented by infant mortality per 1,000 live births, and Education is the secondary school graduation rate. Patent applications is the number of patent applications by residents throughout the year and is a proxy for the innovation variable. GDP per capita is in current US dollars and is a proxy variable for wealth levels in the country. The dependent variables are Economic Growth, the growth rate calculated using the GDP and the GDP prior year for each country, as well as the Women's Labor Force Participation Rate, which is the percentage of women who are either seeking jobs or are employed in the country.

Economic Models

The first economic model created for this study was a standard OLS regression where controls for economic growth will be included, along with the women's index, is as follows:

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$$\text{GDP growth} = \beta_0 + \beta_1 \text{ WomensIndex} + \beta_2 \ln \text{GDP}(y-1)_{it} + \beta_3 \text{ PopulationGrowth}_{it} + \beta_4 \ln \text{PatentApplications}_{it} + \beta_5 \text{ Corruption}_{it} + \beta_6 \text{ Education}_{it} + \beta_7 \text{ InfantMort}_{it} + \beta_8 \text{ CapitalFormationRate}_{it} + \beta_9 \text{ YearDummies} + e_{it}$$

The Year Dummies represent dummy variables to account for differences between 2017, 2018, and 2019.

After the initial analysis using GDP growth as the dependent variable, additional regressions were run to relate the Women's Index with the women's labor force participation rate and GDP per capita, when controlling for economic variables. The models were constructed as follows:

$$\text{GDP Per Capita} = \beta_0 + \beta_1 \text{ WomensIndex} + \beta_2 \text{ PopulationGrowth}_{it} + \beta_3 \ln \text{PatentApplications}_{it} + \beta_4 \text{ Corruption}_{it} + \beta_5 \text{ Education}_{it} + \beta_6 \text{ InfantMort}_{it} + \beta_7 \text{ CapitalFormationRate}_{it} + \beta_8 \text{ YearDummies} + e_{it}$$

$$\text{WLFPR} = \beta_0 + \beta_1 \text{ WomensIndex} + \beta_2 \text{ PopulationGrowth}_{it} + \beta_3 \text{ Education}_{it} + \beta_4 \text{ InfantMort}_{it} + \beta_5 \text{ YearDummies} + e_{it}$$

Similar to the first model presented, the YearDummies variable represents the three years present in the dataset to be controlled for; 2017, 2018, and 2019.

#### Discussion of Data Sources

The World Values Survey provides data on cultural and economic attitudes and more, for several different countries in three-year waves. The most recent survey recorded at the time of this study is the WVS wave 7 from 2017 to 2020. This wave includes 92 different countries, although some do not have an appropriate amount of data to be included in the regression. The survey asks participants approximately 600 questions, but many of these are missing data, so only certain questions will be utilized.

In addition to the use of cultural data from the World Values Survey, The USAID query system will be utilized for economic data collection. This data archive has a plethora of economic data from several different sources, including the World Bank, all brought together in one place.

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**RESULTS**

The results of the three finalized models can be observed in Figure 3 below. The women's index displayed a significant relationship with the women's labor force participation rate and the GDP per capita but did not display a significant relationship with economic growth. The coefficient is negative in both cases of significance, which is logical for women's labor force participation, as an increase in negative attitudes towards women, would logically lead to fewer women participating in the labor force. The relationship with GDP per capita is a bit more complex and may suggest that either; countries with more negative attitudes towards women tend to have lower GDP per capitass or that these negative attitudes may be directly related to positive economic outcomes for these nations, although results surrounding growth are inconclusive.

Variable	Economic Growth	GDP per Capita	Women's Labor Force Participation Rate
Women's Index	0.0165 (.0809)	-50331.16*** (17594.3)	-.317* (.1875)
Population Growth	.0118 (.008)	1189.852 (1844.081)	-.0055 (.0249)
lnGDP prior year	-.0208** (.0085)		
Capital Formation Rate	.0001 (.0012)	-108.7871 (294.1625)	
Corruption	-.0005 (.0005)	694.6448*** (113.9151)	
Infant Mortality	-.0013 (.001)	-15.91 (229.0193)	-.0003 (.0027)
Education	-.0003 (.0005)	-166.5691 (123.0046)	-.001 (.0015)

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<b>lnPatent Applications</b>	<b>.0109** (.0054)</b>	<b>21.7115 (599.1163)</b>	
<b>2017 Dummy</b>	<b>.0966*** (.0235)</b>	<b>-2770.215 (5578.11)</b>	<b>-.0328 (.0645)</b>
<b>2018 Dummy</b>	<b>.0796*** (.0207)</b>	<b>-1785.435 (4864.945)</b>	<b>.0206 (.0549)</b>
<b>Adj R Squared</b>	<b>0.1798</b>	<b>0.6752</b>	<b>-0.0102</b>
<b>F-Statistic</b>	<b>2.45**</b>	<b>16.25***</b>	<b>0.91</b>
<b>N</b>	<b>67</b>	<b>67</b>	<b>53</b>

*Figure 3 – Regression Output; Three main Models*

Population growth was found to not be significantly related to any of the dependent variables, which aligns with the findings of a study from Barlow (1994). The natural log transformation of GDP in the prior year was found to have a significant negative relationship with economic growth, which lends credibility to the theory of convergence as suggested by Barro (2003). Capital formation rate was not found to be significant in any of the regressions, which is a perplexing result as a study from Fetahi-Vehapi et al. (2015) found capital formation to be an important determinant of economic growth.

Corruption perceptions were found to have a statistically significant relationship with wealth outcomes, suggesting that decreased rates of corruption are associated with increased rates of wealth, or GDP per capita.

The natural log of patent applications was found to be significantly positively related to economic growth, which agrees with the findings of Fetahi-Vehapi et al. (2015), which concluded that innovation is a significant factor of economic growth.

Each of the year dummy variables for 2017 and 2018 respectively, were found to be significantly related to economic growth, which is logical as the global economic situation and business cycle can impact economic growth independent of all other factors. These



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factors were not found to be significant in the regressions for GDP per capita or Women’s Labor Force participation, although this may be partially a result of the small pool of observations.

Both health and education were found to be insignificant in all regressions when all variables were included in the model. Despite this result, each variable was statistically significantly related to GDP per capita when regressed on their own, with betas having the expected directional indicators; infant mortality being negatively related and education being positively related. The results of these individual regressions can be seen below in Figure 4.

Variable	GDP per capita (1)	GDP per capita (2)
Infant Mortality	-937.3064*** (210.3593)	
Education		371.3077** (158.657)
Adj R Squared	0.2222	0.0635
F-Statistic	19.85***	5.48**
N	67	67

*Figure 4 – Infant Mortality and Education vs GDP per capita; individually*

Following the idea that the Women’s Index was significantly related to GDP per capita and women’s labor force participation rate outcomes, each individual factor of the women’s index was also regressed with the same controls in place of the women’s index. The only result which proved significant in this case was when question thirty-seven (refer to Figure 1) was regressed with GDP per capita as the dependent variable. This result can be observed in Figure 5. This shows that an increased duty towards society to have children for women is related to lower GDP per capita outcomes when controlling for other variables.

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Variable	GDP per capita
Question 37	-34519.94*** (11081.92)
Population Growth	920.7752 (1826.479)
Capital Formation Rate	-46.0502 (293.5685)
Corruption	695.1759*** (110.6946)
Infant Mortality	-43.6048 (221.3882)
Education	-159.3825 (120.7648)
lnPatent Applications	-68.0976 (689.2618)
2017 Dummy	-2692.314 (5479.37)
2018 Dummy	-3604.562 (4904.411)
Adj R Squared	0.6826
F-Statistic	16.77***
N	67

*Figure 5 – Q37: Duty towards society to have children vs GDP per capita*

**CONCLUSION**

This study attempts to expand upon existing literature regarding the economic impacts of cultural attitudes towards women on a macro scale. The major contribution of this study is the positive relationship discovered between positive attitudes towards women and GDP per capita outcomes, along with the positive relationship discovered between cultural attitudes

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towards women, and their decision to participate in the labor force. This study was limited by the amount of data available surrounding the cultural values of countries, including not only the difficulty of a small sample size of countries that could be used, but also a small pool of questions, which may not be fully representative of the cultural landscape of the nation.

Future research should examine the relationship between women's labor force participation and economic growth, as this may be the jump required in order to observe this relationship. Policy makers should use the data provided here as justification for exploring policies which promote gender equality in order to reap economic benefits.

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