## Table of Contents

Women in International Public Leadership: Impacting Foreign Direct Investment by Reducing Corruption and Increasing Healthcare Investment ................................................................. 49

S. Catherine Cole, Larry M. Dooley, Judy R. Sandlin, & Elsa A. Murano ................................................................. 49
Women in International Public Leadership: Impacting Foreign Direct Investment by Reducing Corruption and Increasing Healthcare Investment

S. Catherine Cole, Larry M. Dooley, Judy R. Sandlin, & Elsa A. Murano

A potential solution for an economic challenge – increasing needed foreign direct investment (FDI) – is proposed using a human resource development perspective: equally investing in the development of men and women to serve in public leadership. This cross-sectional, nonexperimental study addressed a void in the literature by examining the impact of women in public leadership on FDI through lowered perceived corruption and increased national investment in healthcare. Structural equation modeling using a simple path model was used to test relationships between observable variables. Results included statistically significant relationships between the number of women in public leadership and lower levels of perceived corruption, between lower levels of perceived corruption and greater national investment in healthcare, and between greater national investment in healthcare and increased FDI countries received. Additionally, a fully mediated, indirect relationship between the number of women in public leadership and FDI countries received was statistically significant. That is, as the number of women increased within governments, levels of perceived corruption decreased, national investment in healthcare increased, and FDI increased. Ultimately, this study provides empirical results professionals and institutions can use to advocate for gender equitable vertically integrated human resource development, particularly within developing countries, to promote FDI and its related benefits.

Keywords: women, public leadership, corruption, foreign direct investment, healthcare

Introduction


Particularly important for developing countries, foreign direct investment (FDI) creates an inflow of needed financial resources (Buchanan, Le, & Meenakshi, 2011, Delgado, McCloud & Kumbhakar, 2014; Moran, 1998; Van Vuuren, 2002). However, not all countries receive their desired level of FDI. Not only does corruption take resources from the world’s most vulnerable people, it also creates avoidance in foreign investors to finance future ventures in those countries (Habib & Zurawicki, 2002). Ultimately, corruption may discourage needed FDI.
Problem Statement, Purpose of Study, and Research Question

Although adequate research about women and corruption was identified, a vacuum in studies examining the effects of women in public leadership on corruption, national investment in healthcare, and FDI existed. The purpose of this quantitative study was to fill a gap in the scholarly literature regarding the effects of women in public leadership on corruption, national investment in healthcare, and FDI. Variables used included the number of women in public leadership (WP), corruption as represented by a perceptions index (CPI), national investment in healthcare (HE), and foreign direct investment (FDI). The research question was: What were the effects of women in public leadership on corruption, national investment in healthcare, and foreign direct investment.

Study Design

Structural equation modeling (SEM) software was chosen to test the conceptual framework within a simple path model. The hypothesized, directional relationships between and among observable variables were tested using Mplus Version 7. Observations, and in this case the population, \( N = 183 \), were tested using one dependent variable (FDI).

Conceptual Framework

Based on dissertation research, this study began with a framework including three variables (WP, CPI, and FDI). Relationships between those three variables were tested. Statistically significant results were limited to the relationship between WP and CPI \( (p = 0.000) \). As Kline (2015) explained, it is rarely the case when the scope of research is narrow enough to accept or reject one model based on its correspondence to the data. Therefore, the framework was modified to include four variables (WP, CPI, HE, and FDI).

HE was added to the framework because there was sufficient evidence that women make different policy decisions than men (Svaleryd, 2009). Women tend to value socially focused policy and allocate budget for those policies (Svaleryd, 2009).

Women and men have different biases regarding economic matters (Migheli, 2014). The modified framework tested six relationships. These included WP and CPI, WP and HE, CPI and HE, CPI and FDI, HE and HDI, and WP and FDI. Statistically significant results included WP and CPI \( (p = 0.000) \), CPI and HE \( (p = 0.013) \), and HE and FDI \( (p = 0.000) \). Because relationships between WP and HE and between CPI and FDI were not significant, they were eliminated from the framework.

The final framework including four relationships is illustrated in Figure 1. It included the percent of women in public leadership (WP), the levels of perceived corruption per country (CPI), the amount spent nationally on healthcare per country (HE), and the amount of foreign direct investment each country received (FDI).

![Figure 1. Relationships between variables in the final tested conceptual framework.](image)

Methods

Driven by the research question – what were the effects of women in public leadership on corruption, national investment in healthcare, and FDI – a quantitative method was chosen to complete a cross-sectional, nonexperimental study. A quantitative method allowed the study variables, represented by databases, to be tested and reported in an empirical way. Data, sampling, assumptions, and conceptual definitions are presented.

Data. This study investigated data extracted from datasets from the Corruption Perceptions Index (CPI) and the Human Development Report (HDR), both published in 2014.

Corruption perceptions index (CPI). The CPI is an index developed and maintained by TI since 1995 (Saisana & Saltelli, 2012). It is “a composite indicator that measures perceptions of corruption in the public sector” (Saisana & Saltelli, 2012, p. 3). It scored countries scores from 92 to eight, with 92 as least corrupt. The CPI aggregated data from various respected institutions including the African Development Bank, the Economist Intelligence Unit, the World Bank, and the World Justice Project, (Saisana & Saltelli, 2012). The CPI country scores were used as a mediating variable. It is important for the reader to be aware that the higher the CPI score, the lower that country’s perceived levels of corruption.

Human development report (HDR). The HDR is published by the United Nations Development Programme (UNDP) (Malik, 2014). It is a composite measure determining life expectancy, educational attainment, and command over the resources needed for a decent living, among others (Malik, 2014). Elements of the composite index used included seats in national parliament (WP), national investment in healthcare (HE), and FDI.

For WP, the HDR operationally accounts the number of women elected to that country’s legislature as share of seats in parliament. This percentage is reported within the Gender Inequity Index and is defined as the “proportion of seats held by women in the national parliament, expressed as percentage of total seats. For countries with bicameral legislative systems, the share of seats is calculated based on both houses” (Malik, 2014, p. 175). For the purpose of this research WP is comprised of elected legislators.
Sampling. This study examined data from countries worldwide. Data were extracted from two databases: the HDR and the CPI. These databases differed in reported countries (both in names and in numbers of countries). The names of countries listed on the HDR (the source of the independent or exogenous variable WP) were used. Countries listed on the CPI were manually merged with it using an Excel spreadsheet, \( (N = 197) \).

The HDR contained information on WP for 183 countries. The cases without data on WP were not included in the analysis. This reduced the population by seven cases, \( (N = 190) \). In addition, the data included seven more cases where all information except WP was missing. These cases were not included in the analysis. This reduced the population to \( N = 183 \).

The ultimate number of cases or observations tested was 183, just under the typical sample size expected for SEM \( (N = 200) \) (Kline, 2015). However, this population is limited in nature, as there are less than 200 countries worldwide. Justification can also be made that the population size tested is adequate because tested models were simple. In addition, Kline (2015) also reported that a ratio can be applied to determine adequacy of sample size. This included accepting a minimum size in terms of the cases \( \left( N \right) \) to the number of model parameters that are estimated \( (q) \). Kline (2015) stated an ideal size-to-parameters ratio is 20:1. In this study parameters estimated were 4. Therefore, \( q = 4 \) and \( 4 \times 20 = 80 \). The sample, or in the case of this study the population size, \( (N = 183) \) exceeded the recommended ratio minimum.

Assumptions. Accepting secondary data on corruption, it is assumed the CPI is a valid and reliable index. Although researchers including Van Vuuren (2002) have questioned the validity of the index, it was recently improved by TI. In fact, a report issued by the European Commission Joint Research Centre stated the index, while not perfect, “may be more reliable than each source taken separately” (Saisana & Saltelli, 2012, p. 21). The CPI is also the most frequently cited in the academic literature (Atalas et al., 2009; Gyimah-Brempong, 2002; Habib & Zurawicki, 2002; Ralston et al., 2006; Swamy et al., 2001; and Tabish & Jha, 2011).

Conceptual definitions. Conceptual definitions of corruption and FDI are presented.

Corruption. Historically, reported Danon (2011), corruption was a question of morality. It later involved judicial, sociological, and economic explanations. Walton (2014) defined corruption in the context of developing countries. This included abuse of public office for personal gain and the general abuse of power. More specifically, Habib and Zurawicki (2002) defined corruption as comprising bribes, bureaucratic inefficiencies, and political instability.

The AFCE (2014) included conflicts of interest, bribery, illegal gratuities, and economic distortion in their definition of corruption. Blackburn, Bose, and Haque (2006) defined public sector corruption as “the abuse of authority by bureaucratic officials who exploit their powers of discretion, delegated to them by the government, to further their own interests by engaging in illegal, or unauthorized, rent seeking activities” (p. 2448). For the purpose of this study, the following definition was used: “the misuse of authority and public resources for private gain” (Vijayalakshmi, 2008, p. 1262).

Foreign direct investment (FDI). Delgado, McCloud, and Kumbhaker (2014) describe FDI as “the investments of large multinational corporations” (p. 298). It is through these investments that developing countries may have access to “advanced technologies, management practices, and research and development” (Delgado et al., 2014). Because human resource development (HRD) has evolved from a primary focus on the corporate world to include international development, it makes sense that FDI may enable progress (McLean, 2006). Specifically, foreign direct investors may provide development and training for local employees (Delgado et al., 2014). For the purpose of this study, the definition of FDI from the UNDP (2014) was used: the “sum of equity capital, reinvestment of earnings, other long-term capital and short-term capital, expressed as a percentage of GDP” (Malik, 2014, p. 211).

Hypotheses

As mentioned previously, the final conceptual framework tested four relationships between observable variables in the form of a simple path model. The four hypotheses are presented.

- **H1**: WP and CPI
  - \( H_0 \): There was no statistically significant relationship between WP and CPI
  - \( H_a \): As WP increased, CPI increased (a higher CPI score indicates lower perceived corruption)

- **H2**: CPI and HE
  - \( H_0 \): There was no statistically significant relationship between CPI and HE
  - \( H_a \): As CPI increased (a higher CPI score indicates lower perceived corruption), HE increased

- **H3**: HE and FDI
  - \( H_0 \): There was no statistically significant relationship between HE and FDI
  - \( H_a \): As HE increased, FDI increased

- **H4**: WP and FDI
  - \( H_0 \): There was no statistically significant relationship between WP and FDI
  - \( H_a \): WP indirectly impacted FDI

Results

Paths were tested between WP and CPI, CPI and HE, HE and FDI, and WP and FDI. Results from the path analysis are presented. These include descriptive statistics, fit statistics, missing data, and parameter estimates.
Descriptive Statistics

Using Excel, the mean, median, and standard deviations (SD) were calculated for WP, CPI, HE, and FDI. Table 1 lists descriptive statistics.

Table 1
Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP</td>
<td>190</td>
<td>20</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>CPI</td>
<td>175</td>
<td>$4,593,200,890</td>
<td>$369,731,168</td>
<td>$22,790,462,208</td>
</tr>
<tr>
<td>HE</td>
<td>175</td>
<td>$1,218,305,626</td>
<td>$196,494,769</td>
<td>$4,058,102,249</td>
</tr>
<tr>
<td>FDI</td>
<td>177</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: WP is a percentage of women to men, CPI is a score, and HE and FDI are reported as real dollars.

Fit Statistics

The model revealed a model fit, $\chi^2(2) = 0.295$, $p > .05$. According to Suhr (n.d.), a chi-square value close to zero with a probability level greater than 0.05, indicates little difference between expected and observed covariance matrices. RMSEA = 0.000, lower bound = 0.000 and upper bound = 0.077. Ideal thresholds for RMSEA, according to Kline (2015), include an estimate value close to zero, lower bound confidence intervals at zero, and upper bound lower than 0.100. Additionally, the RMSEA results are consistent with each other. That is, all values indicate a good fit, even with a less-than-ideal $N = 183$. In addition, CFI = 1.000. Hu and Bentler (1999) concluded a CFI value of 0.90 or greater is acceptable. SRMR = 0.011. Ideally at zero (Kline, 2015), this statistic is a measure of the mean absolute correlation residual. That is, the overall dissimilarity in the observed and expected correlations. Complete fit statistics are reported in Table 2.

Table 2
Model fit statistics

<table>
<thead>
<tr>
<th>Test</th>
<th>Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Free Parameters</td>
<td>10</td>
</tr>
<tr>
<td>Chi-Square Test of Model Fit</td>
<td>0.295</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>2</td>
</tr>
<tr>
<td>P-Value</td>
<td>0.8629</td>
</tr>
<tr>
<td>RMSEA (Root Mean Square Error Of Approximation)</td>
<td>0.000</td>
</tr>
<tr>
<td>90 Percent C.I.</td>
<td>0.000 - 0.077</td>
</tr>
<tr>
<td>Probability RMSEA &lt;= 0.05</td>
<td>0.910</td>
</tr>
<tr>
<td>CFI</td>
<td>1.000</td>
</tr>
<tr>
<td>SRMR (Standardized Root Mean Square Residual)</td>
<td>0.011</td>
</tr>
</tbody>
</table>

Missing Data

Mplus recognizes patterns of missing data and reports it as covariance coverage. The amount of data used to generate each input covariance for the analysis is reported. The lowest reported coverage was 0.874, well above the requirement of 0.100.

Parameter Estimates

Parameter estimates are presented in Figure 2.

Figure 2. *The relationships between WP and CPI, CPI and HE, and HE and FDI were all statistically significant, $p = 0.000$, $p = 0.014$, and $p = 0.000$, respectively.

Explanation of parameter estimates are reported per hypothesis.

H1: WP and CPI. The tested path model resulted in a statistically significant relationship between WP and CPI ($p = 0.000$). The null hypothesis was rejected. That is, as the number of women in public leadership increased, perceived corruption decreased. Ultimately, when WP increased one SD unit from its mean, CPI increased by .260 SD unit from its mean.

H2: CPI and HE. A statistically significant relationship was identified between CPI and HE ($p = 0.014$). The null hypothesis was rejected. That is, as CPI increased, HE increased. Ultimately, when CPI increased by one SD unit from its mean, HE increased by .182 SD units from its mean.

H3: HE and FDI. A statistically significant relationship was identified between HE and FDI ($p = 0.000$). The null hypothesis was rejected. That is, as HE increased, FDI increased. In other words, when HE increased by one SD unit from its mean, FDI increased .618 SD from its mean.

H4: WP and FDI. A statistically significant indirect relationship was identified between WP and FDI ($p = 0.049$). The null hypothesis was rejected. That is, WP was found to exert an effect on FDI through CPI and HE. Therefore this model is fully mediated.

Discussion

Findings from this study both confirmed and contradicted previous researchers’ conclusions.

As the Number of Women in Governments Increased, Corruption Decreased

Swamy et al. (2001) and Dollar et al. (2001) may not have known how right hey were concluding women may be less corrupt than men. Although naysayers existed (Alatas,
Advancing Women in Leadership

Cameron, Chaudhuri, Erkal, & Gangadhara, 2009; Goetz, 2007; Sung, 2003), most researchers after 2001 agreed that women tended, for whatever reason, to engage in corrupt behavior less. This research was consistent. It built on previous research with a more robust CPI, and resulted in similar findings. This included a statistically significant direct relationship between the number of women in public leadership and lower perceived levels of corruption.

**Corruption and FDI**

Several researchers studying FDI concluded that the level of perceived corruption affects individual countries’ ability to attract FDI (Danon, 2011; Delgado et al., 2014; Forsyth, 2005). While indeed this makes sense, it was not fully supported by this study. Surprisingly, no significant direct relationship between corruption and FDI was identified. Although this study identified an indirect effect of corruption on FDI, it challenges the conventional wisdom that levels of perceived corruption have a direct effect on the FDI countries receive.

**National Investment in Healthcare**

Because previous researchers concluded women tend to prioritize programmatic healthcare, it was hypothesized that the higher the number of women making budgetary allocation decisions within governments would be a direct influence on healthcare expenses. The lack of a statistically significant direct relationship between the number of women in governments and national investment in healthcare was unexpected.

The point is further complicated because healthcare expenses were mediated by levels of perceived corruption. To put it another way, the number of women in public leadership affected corruption, and corruption in turn affected the amount of resources allocated to healthcare. Perhaps the interpretation of investment in healthcare should be closer to one of a financial indicator versus programmatic. That is, the lower perceived corruption is, the greater amount of resources a country can both allocate and attract to invest in healthcare. In addition, health affects productivity (Padgett & Warnecke, 2011). In this logic, it make sense that investment in healthcare was significantly related to FDI.

**Women and FDI**

Traditionally seen as beneficiaries from interventions (Chen, 2013), this study found higher numbers of women in public leadership contributed indirectly but significantly to higher levels of FDI. That is, as the number of women increased within governments, levels of corruption decreased, national investment in healthcare increased, and FDI was in turn affected in a significant, albeit, indirect way. This study used women as the exogenous/independent variable and tested their impact versus studying how potential interventions might affect them.

**Implications**

In direct opposition to the pervasive belief that extra capital is the answer to their economic growth challenges, Schultz (1961) noted poor countries are unable to effectively use large amounts of financial capital. The complex relationships among the tested variables in this study are consistent with human capital theory. That is, improving economic indicators may be much more complicated than simply “throwing money at the problem.” With that said, for countries desiring to attract additional FDI, even tackling the perceived levels of corruption may not be enough.

Because the number of women in public leadership is related to perceived corruption, healthcare investment, and ultimately FDI, improving economic indicators may be more a function of human resource development versus simple resource provision. Therefore the primary implication from this research is consistent with human capital theory: Improving desired levels of FDI may require a strategic investment in a developing country’s human resources to ensure boys and girls, men and women, are equally prepared for public leadership. In other words, when countries develop their female human resources, they may benefit from lowered perceived corruption, greater investment in healthcare, and increased FDI. Having said that, nothing in this research implies increasing the number of women in public leadership, decreasing corruption, increasing the allocation of national investment in healthcare, and increasing FDI will be easy, fast, or cheap. Achieving economic results from human resource development must be a long-term, strategic effort.

This means efforts to develop women (and men) should be vertically integrated. This requires governments to assess needed skills, identify anticipated shortages, and create applicable policies (Mishra, 2014). That is, for an adequate pool of girls to enter primary education, an adequate number of girls must have had good nutrition and early educational opportunities. For an adequate pool of girls to be available for secondary school, an adequate pool of girls must have successfully completed primary school. For an adequate pool of women to be available for tertiary training, an adequate pool of women must have graduated from secondary school, and so on.

Maximizing their FDI may lead to increased investments in research and development, training programs, and improved technology management (Delgado et al., 2014) within developing countries. Furthermore, this finding should be of interest to donor countries as well. Donor countries, the U.S. and other developed nations, provide foreign aid to developing countries. With empirical evidence greater levels of women in public leadership was related to perceived corruption, national investment in healthcare, and FDI, donor countries may encourage recipient countries to proactively invest in their female human resources as conditions for further assistance.
Limitations, Delimitations, and Recommendations for Further Research

Study limitations, delimitations, and recommendations for further research are identified.

Limitations

Although the CPI is widely cited by scholars, Gyimah-Brempong (2002) pointed out its limitations. Chiefly, corruption itself is near impossible to measure and not easily quantifiable. Therefore, researchers are left with measurements of perceived corruption. In addition, CPI scores did not include African countries until after 1997 (Gyimah-Brempong, 2002).

The databases used in this study (the CPI and HDR) did not report the same number of countries. Reporting entities have differed on what geopolitical areas are considered countries. For example, in this study Palestine was not disaggregated from Israel and Kosovo was not disaggregated from Serbia. This limits available disaggregated data. Also, these databases were macro in nature. They included all countries and all regions of the world. Interpretations about specific regions or countries should be made with caution.

Statistically, structural equation modeling (SEM) was used. SEM has previously been referred to as causal modeling, but this term is outdated. Furthermore, the results of an SEM analysis cannot generally be interpreted as causal effects (Kline, 2015). The models tested were simple path models, and the primary analysis was regression. Readers should be aware of the limitations of interpretation in regards to causation.

Finally, this research regarding the percent of women in governments is inherently limited, as women generally make up less than 50% of governments worldwide. Exceptions to this included Rwanda and Andorra with 52% and 50% of women occupying seats in parliament respectively. Therefore, it is impossible to study the implications of female dominated legislative branches.

Delimitations

Secondary macro-level data was used and all variables were treated as observable. Even though corruption may be thought of initially as a latent variable because of its difficulty in measurement, it was used in this study as an observable variable. The CPI was used to represent corruption and is a robust measurement. This treatment of the corruption variable is acceptable (Moon, personal communication, October 8, 2015). TI’s CPI is a widely cited and accepted index throughout the scholarly literature (Gyimah-Brempong, 2002), therefore scores for corruption were exclusively delimited to the CPI.

Recommendations for Future Research

Although this research begins to address a void in scholarly literature, future research opportunities are unlimited. To begin with, future studies may attempt to explain the unexplained variance between current variables tested. Of particular interest is the unexplained variance between the number of women in public leadership and corruption. Although this research confirmed and built on previous research regarding women and corruption, it explained a limited amount of variance. For example, Ionescu (2011) discussed corruption and “open networks of social capital” (p. 405). Perhaps women are less likely to participate in corrupt activities because they have less access to unchecked social capital (Ionescu, 2011). Vijayalakshmi (2008) tested the relationship between educational levels and attitudes toward corruption. Future research exploring variables such as access to social networks and educational levels may identify other influences on corruption.

Migheli (2014), in studying gender-based preferences in economies, concluded that women prefer greater regulatory measures than men. “While women’s representation in policy-making roles appears to matter, there is little agreement about what determines it” (Mavisakalan, 2014, p. 301). Perhaps part of the reason the greater number of women in governments is statistically related to lowered corruption is not because women are more virtuous. Maybe it is more related to women’s desire for more government regulation.

Other research may include analyzing the tested variables in different ways. These ways could include looking at different geographic regions such as Sub-Saharan Africa, Latin America and the Caribbean, Middle East and North Africa, Western Europe, and Asia independently. Additionally, the same variables may be analyzed by development level as categorized by the HDR. Analyses could be done for those countries identified as low development through higher development.

Conclusion

Women can no longer be seen as just beneficiaries of economic development. They must be acknowledged as potential contributors to their own national economic improvements. This research has demonstrated the higher number of women in public leadership was associated with lowered perceived corruption, lower perceived corruption was associated with increased national investment in healthcare, increased investment in healthcare was associated with higher levels of FDI, and that higher levels of women were indirectly related to higher levels of FDI. Women are a vital human resource to contribute to economic improvements within their national governments.

However, for women to effectively contribute to economic improvements, they must be developed. Opportunities exist for practitioners to contribute to “transitioning societies” by helping to reduce existing social and economic disparities among nations (McLean, 2006, p. 3). Professionals and institutions have empirical evidence on which to base national human resource development investments. These may include crafting and implementing vertically integrated human resource development strategies that equally prepare both boys and girls.
to become potentially viable public leaders within their governments. A potential solution for an economic challenge – increasing FDI – is proposed from a human resource development perspective: a gender equitable vertically integrated HRD model with investment in the development of men and women to equally serve in public leadership.

References


