



Proxy Dissonance: Evaluating the Empirical Alignment of CPIA Gender Ratings and the Women Business & Law (WBL) Index in Measuring Women's Empowerment

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Abstract

This study examines whether two global proxies for women's empowerment the CPIA Gender Equality Rating and the Women, Business and the Law (WBL) Index are empirically interchangeable. Both indices are central to policy design, development financing, and gender-focused benchmarking, yet their conceptual alignment remains underexplored. Using 2019 cross-sectional data for 39 countries from the World Development Indicators (WDI), the study employs bi-directional univariate Ordinary Least Squares (OLS) regression, with both standard and heteroskedasticity-robust models, to test mutual proxy validity. Results reveal a positive and statistically significant relationship between the CPIA and WBL indices, indicating some coherence. However, the adjusted R² values 0.23 for the standard model and below 0.18 for the robust specification suggest limited explanatory power. These findings imply that while correlated, the indices capture distinct facets of women's empowerment. The study recommends using the CPIA and WBL as complementary rather than interchangeable measures to ensure comprehensive gender analysis, advancing more nuanced, multidimensional approaches aligned with Sustainable Development Goal 5.

Keywords:

Women Empowerment, Gender Equality, CPIA Gender Equality Rating, Women, Business and the Law (WBL) Index, Legal Empowerment, Institutional Gender Metrics, Gender Governance, Sustainable Development Goal

Introduction

Women's empowerment has emerged as a central pillar of sustainable development and inclusive governance. Yet, the measurement of this multifaceted concept remains contested and inconsistently operationalized in international research and policymaking (Bardhan & Klasen, 2021; Buvinic, Furst-Nichols, & Koolwal, 2020; Duflo, 2012). The present study offers a critical empirical contribution by evaluating the interchangeability and appropriateness of two widely used proxy indices: the CPIA Gender Equality Rating and the Women, Business and the Law (WBL) Index. By assessing their empirical relationship using cross-sectional regression, this study provides evidence-based



insights on the validity and substitutability of these indicators.

This research is valuable for academic scholars, multilateral organizations, development practitioners, and gender economists who rely on proxy indicators to construct gender equality models or inform policymaking (Kabeer, 2016; Merry, 2016; Charmes, 2019). By advancing clarity on proxy equivalence, this study directly supports evidence-based indicator use within international datasets, particularly those informing the SDG 5 (Gender Equality), SDG 8 (Decent Work), and SDG 16 (Inclusive Institutions) frameworks (UN, 2021; UN Women, 2022; OECD, 2021).

Interdisciplinary and Intangible Benefits

Beyond quantitative validation, this research presents profound interdisciplinary and intangible benefits. For instance, in development economics (Husain, Qureshi, & Hussain 2019), it assists in refining econometric models on institutional quality and gender outcomes (Seguino, 2020; Fukuda-Parr, 2019). In law and governance, it interrogates whether legal frameworks (as captured by the WBL Index) align with normative policy intentions (as measured by the CPIA rating) (Hyland et al., 2020; Klugman et al., 2014). In political science, it supports global governance metrics on the rule of law, legal empowerment, and state accountability to women (Goetz, 2007; Htun & Weldon, 2018).

Intangibly, this study contributes to epistemic transparency—the ethical obligation of researchers to understand the assumptions underlying the indicators they use (Merry, 2016; Espeland & Sauder, 2007). By probing the statistical correlation and potential interchangeability of these proxies, the research elevates methodological reflexivity and reinforces indicator responsibility, which is essential in gender-sensitive policy discourse (Celik, 2020; Alkire, 2007).

Research Gap

Despite the widespread use of both the CPIA Gender Equality Rating and the WBL Index in global development reports, academic literature reveals a glaring lack of empirical studies comparing their statistical representativeness and potential interchangeability. Much of the existing literature treats these proxies as standalone indicators or incorporates them into composite indices without testing for overlap, redundancy, or statistical convergence (Buvinic & Levine,



2016; Charmes, 2019; UNDP, 2020).

Moreover, while prior studies have explored how gender equality affects labor force participation or educational outcomes (Duflo, 2012; Klasen & Lamanna, 2009), few have examined whether different gender indices measure conceptually congruent realities. The present study addresses this methodological lacuna by providing empirical validation using cross-sectional regression on a well-defined global dataset for 2019. This is critical, considering that measurement errors or proxy misalignments can lead to distorted academic inference and policy misdirection (Bardhan & Klasen, 2021; Merry, 2016; Fukuda-Parr, 2019).

Research Question

This study is driven by the core research question:

To what extent are the CPIA Gender Equality Rating and the Women, Business and the Law (WBL) Index statistically interchangeable as proxies for measuring global women's empowerment?

This question is pursued through the lens of empirical robustness, measurement equivalence, and representational validity across countries in the WDI dataset for the year 2019.

Research Hypotheses

In pursuit of this question, the study tests the following null and alternative hypotheses using bi-directional OLS regression:

H₀ (Null Hypothesis): There is no statistically significant relationship between the CPIA Gender Equality Rating and the Women, Business and the Law Index; thus, they are not interchangeable proxies.

H₁ (Alternative Hypothesis): There is a statistically significant relationship between the CPIA Gender Equality Rating and the Women, Business and the Law Index; hence, they may be considered interchangeable in proxy function.

These hypotheses are tested using 39-country cross-sectional data, with robustness checks to ensure the reliability of statistical findings.

Literature Review

The Essentially Contested Nature of Women's Empowerment

Women's Empowerment (WE) is fundamentally an "essentially contested concept" (Gallie, 1956), its theoretical evolution reflecting shifting paradigms



within development studies, feminist theory, and political philosophy. Early conceptualizations, heavily influenced by welfare economics (Husain, Qureshi, & Hussain 2019), often equated empowerment with increased access to resources or participation in development programs (Boserup, 1970). This perspective, however, was critiqued for neglecting agency and power dynamics. Amartya Sen's (1999) seminal *capabilities approach* provided a transformative theoretical anchor, shifting the focus from mere resource availability to the substantive *freedoms* individuals possess to achieve valued functionings – "what people are actually able to do and be" (p. 75). Nussbaum (2000) further developed this framework specifically for women, articulating a list of central human capabilities (e.g., life, bodily health, bodily integrity, senses and imagination, practical reason, affiliation, play, control over one's environment) essential for human dignity and flourishing. Empowerment, within this capability framework, involves expanding women's capabilities to choose and pursue lives they have reason to value, necessitating the removal of unfreedoms stemming from social structures and institutional constraints.

Concurrently, sociological and feminist perspectives emphasized power relations. Kabeer's (1999) influential definition framed empowerment as "*the process by which those who have been denied the ability to make strategic life choices acquire such an ability*" (p. 437). This process-centric view highlights three interlinked dimensions: *resources* (preconditions, including material, human, and social resources), *agency* (the ability to define goals and act upon them, encompassing decision-making, negotiation, and resistance), and *achievements* (the outcomes of exercising agency). Rowlands (1997) further differentiated types of power crucial for understanding empowerment: *power over* (domination), *power to* (capacity), *power with* (collective action), and *power within* (self-worth and consciousness). This multi-dimensionality underscores that WE cannot be reduced to a single metric but must be understood as a complex, contextually embedded process challenging patriarchal power structures (*power over*) across multiple spheres (e.g., household, market, community, state).

Institutional Theory and the Policy Environment: Foundations for CPIA GE



The design of the CPIA Gender Equality Rating (CPIA GE) implicitly draws upon institutional theory, particularly the work of North (1990) on institutions as the "rules of the game" shaping human interaction. Institutions encompass both formal rules (laws, constitutions, policies) and informal constraints (norms, conventions, codes of conduct). The CPIA GE assesses the *quality* of formal and informal institutions concerning gender equality within a country. It aligns with the theoretical understanding that effective institutions are critical for fostering environments conducive to empowerment by reducing discriminatory practices and transaction costs for women's participation (Acemoglu & Robinson, 2012).

The index's focus on "*policies, institutions, and frameworks*" reflects a belief that state action and institutional design are pivotal for advancing gender equality. Theories of state feminism (McBride & Mazur, 2010) and gender mainstreaming (True & Mintrom, 2001) posit that integrating gender perspectives into state institutions and policy processes is essential for transformative change. The CPIA GE attempts to capture this integration and its effectiveness. Furthermore, it resonates with rights-based approaches to development (Cornwall & Nyamu-Musembi, 2004), which frame gender equality as a fundamental human right and emphasize state obligations to create enabling environments through legal and policy reforms, service provision, and accountability mechanisms. The CPIA GE's dimensions (legal rights, access to services/assets, economic opportunities, voice/societal protection) directly map onto these theoretical imperatives, aiming to assess the institutional infrastructure supporting women's capabilities and agency. However, the theoretical gap lies in its limited ability, due to methodology, to capture the nuances of informal institutions (deep-seated norms) and the lived experience of agency, central to Kabeer's and Sen's frameworks.

Liberal Legalism and Economic Opportunity: Foundations for the WBL Index

In stark contrast, the Women, Business and the Law (WBL) Index is firmly rooted in the theoretical tradition of liberal legalism and neoclassical economics (Husain, Qureshi, & Hussain 2019). Its core premise aligns with liberal feminist perspectives that emphasize achieving gender equality primarily through legal reform and equal rights within existing economic and political systems (Okin,



1989). The index operationalizes the theoretical assumption that removing *de jure* legal barriers is a necessary (though not sufficient) condition for women's economic participation and empowerment (Husain, Qureshi, & Hussain 2019). It implicitly draws on human capital theory (Becker, 1964), suggesting that discriminatory laws act as market distortions, hindering women's optimal investment in their skills and their full contribution to economic growth (World Bank, 2012).

The WBL's granular focus on specific legal provisions affecting women's entrepreneurship and employment reflects a belief in the primacy of the legal framework in shaping economic opportunities. It resonates with theories advocating for women's economic empowerment as a driver of broader development outcomes (Duflo, 2012). The index's methodology – binary coding of the existence of laws – embodies a positivist legal tradition that assumes laws, once enacted, have predictable and uniform effects. This perspective, however, faces significant theoretical challenges. Feminist legal theory (Smart, 1989) and socio-legal scholarship (Merry, 2006) robustly critique liberal legalism, arguing that laws are not neutral but embedded in social power structures. They emphasize the critical distinction between *de jure* rights (laws on the books) and *de facto* realities (implementation, access to justice, social norms that nullify legal rights). The WBL Index, by design, captures only the former, theoretically neglecting the crucial insights from implementation theory (Pressman & Wildavsky, 1973) and the social embeddedness of law highlighted by Granovetter (1985). Its theoretical foundation struggles to account for why significant legal reforms, documented by WBL (e.g., global average score rising from 70.06 in 2011 to 77.1 in 2023 (World Bank, 2023)), often fail to translate into proportional gains in women's economic empowerment or broader WE outcomes.

Bridging and Critical Gaps: Towards a More Holistic Theoretical Understanding

The theoretical divergence between the capabilities/process-oriented models (underpinning the *aspiration* of measuring WE) and the institutional/legal frameworks (underpinning the CPIA GE and WBL *proxies*) creates a significant gap. While both indices offer valuable insights, neither fully captures the core theoretical components of agency, intrinsic empowerment (*power within*), or the



transformative change central to critical feminist and empowerment theories (Batliwala, 2007; Cornwall & Edwards, 2014).

Furthermore, both indices exhibit theoretical blind spots regarding intersectionality (Crenshaw, 1989). The experiences of WE are profoundly shaped by intersecting identities such as race, class, caste, ethnicity, sexuality, disability, and location. Aggregated national-level indices like CPIA GE and WBL inherently mask these critical variations, potentially reinforcing homogenized views of "women" and obscuring the compounded disadvantages faced by marginalized groups. Postcolonial and decolonial feminist theories (Mohanty, 1988; Spivak, 1988) further critique the universalizing tendencies embedded in global indices, arguing that they often reflect Western-centric norms and fail to account for diverse cultural contexts and locally-defined conceptions of empowerment and well-being. The theoretical underpinnings of CPIA GE and WBL are largely silent on these crucial dimensions.

Theoretical Imperatives for Proxy Use and Assessment

The theoretical landscape reveals that CPIA GE and WBL are not derived from a singular, coherent theory of women's empowerment. Instead, they are grounded in distinct, and sometimes conflicting, theoretical traditions: CPIA GE in institutional theory and rights-based approaches emphasizing the enabling environment, and WBL in liberal legalism and human capital theory emphasizing formal economic rights. Their design reflects these origins, leading to fundamental differences in scope, methodology, and the specific facets of the complex WE construct they purport to measure. Consequently, the theoretical expectation is that they should *not* be interchangeable proxies. The capabilities approach and process-oriented models demand measures sensitive to agency, context, and multidimensionality – qualities not fully captured by either index. Recognizing these distinct theoretical foundations is paramount for researchers. It necessitates critical reflection on whether a chosen proxy aligns with the *specific theoretical dimension* of empowerment under investigation and a clear acknowledgment of the significant theoretical limitations inherent in using these aggregate indices as substitutes for the rich, multifaceted concept of women's empowerment itself.

The Imperative and Complexity of Measuring Women's



Empowerment

Women's empowerment (WE) stands as a critical objective within global development frameworks, intrinsically linked to poverty reduction, economic growth, improved health outcomes, and sustainable development (Kabeer, 2005; Sen, 1999). However, conceptualizing and measuring this complex, multidimensional construct presents significant challenges. WE encompasses agency (the ability to make choices), resources (preconditions for exercising agency), and achievements (realized outcomes) across diverse spheres including economic, political, social, and psychological domains (Malhotra et al., 2002; Kabeer, 1999). Capturing this breadth and depth at a global scale necessitates reliance on proxy measures. Large-scale, cross-national indices, such as the World Bank's CPIA Gender Equality Rating (CPIA GE) and the Women, Business and the Law Index (WBL), have emerged as prominent tools purporting to capture aspects of the enabling environment for WE. This literature review evaluates the conceptual foundations, methodological approaches, strengths, and limitations of these two indices, critically assessing the extent to which they can be considered appropriate and interchangeable global proxy variables for women's empowerment in empirical research and policy analysis.

Conceptualizing Women's Empowerment and the Proxy Dilemma

The theoretical underpinnings of WE emphasize its process-oriented, context-specific, and relational nature. Nussbaum (2000) and Sen (1999) frame empowerment within the capabilities approach, focusing on the expansion of individuals' freedoms and abilities to lead lives they value. Kabeer (1999) further operationalizes this, defining empowerment as "the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them." This inherently qualitative and subjective core makes direct quantitative measurement elusive, particularly for large-N comparative studies (Alkire et al., 2013). Consequently, researchers and policymakers frequently resort to proxy indicators. These proxies aim to capture either the *preconditions* believed to foster empowerment (e.g., legal rights, educational access) or tangible *outcomes* potentially reflecting empowered agency (e.g., labor force participation, political representation) (Duflo, 2012). The fundamental challenge lies in ensuring these proxies possess strong construct validity – that they accurately



represent the underlying, complex concept of WE they are intended to measure (Bollen, 1989). The selection of an inappropriate or weak proxy risks misdiagnosing problems, misallocating resources, and generating misleading conclusions (Ferrant & Nowacka, 2015).

The CPIA Gender Equality Rating: Institutional Assessment as Proxy

The CPIA GE is one component of the World Bank's Country Policy and Institutional Assessment (CPIA), a diagnostic tool used primarily to allocate concessional lending. The CPIA GE cluster specifically rates countries (scored 1-6) on the extent to which their "policies, institutions, and frameworks" foster gender equality across four dimensions: (1) legal rights and protections, (2) access to public services and productive assets, (3) economic opportunities, and (4) voice in society and protection from gender-based violence (World Bank, 2023a). Its strength lies in its attempt to capture the broader *institutional and policy environment* deemed conducive to WE. It incorporates expert assessments based on a defined set of criteria, potentially allowing for nuanced judgment beyond purely quantitative data (World Bank, 2013). Furthermore, its direct link to World Bank funding gives it significant policy relevance and ensures consistent application across a wide range of developing countries (IDA eligible).

However, the CPIA GE faces substantial criticisms. Its reliance on expert assessments introduces subjectivity and potential bias, lacking full transparency in the exact scoring methodology and source data weighting (Branisa et al., 2013; Sundberg, 2007). The assessment process, while standardized, may be influenced by the perspectives and interpretations of the involved World Bank staff and consultants. Its focus is inherently on *de jure* or *intended* policies and institutions rather than *de facto* implementation or lived experiences. For instance, a country might score highly on having strong legal frameworks but suffer from weak enforcement or pervasive social norms that nullify those rights in practice (Htun & Weldon, 2012). The aggregation of diverse dimensions into a single score obscures variations across different areas of empowerment and can mask significant regressions in specific domains (Ferrant & Nowacka, 2015). Finally, its coverage is limited to IDA-eligible countries, excluding middle-income and high-income nations from comparative analysis.



The Women, Business and the Law Index: Legal Frameworks as Proxy

The WBL Index takes a distinctly different approach. It focuses narrowly on *laws and regulations* affecting women's economic participation across eight key areas: Mobility, Workplace, Pay, Marriage, Parenthood, Entrepreneurship, Assets, and Pension (World Bank, 2023b). Each area is assessed against specific binary questions (e.g., "Can a woman apply for a passport in the same way as a man?"), resulting in scores between 0 and 100 for each area and an overall index. Its primary strength is its objectivity and granularity. By codifying legal differences, it provides a highly transparent, replicable, and comparable measure of *de jure* economic rights across 190 economies (Hyland et al., 2020). This makes it invaluable for tracking legal reforms over time and benchmarking progress. For example, the 2023 report highlights that globally, women have only 77% of the legal rights accorded to men, a statistic frequently cited to advocate for reform (World Bank, 2023b).

The limitations of the WBL Index stem largely from its narrow scope. It explicitly measures *legal* frameworks related to *economic participation*. It does not capture social norms, cultural practices, enforcement gaps, access to justice, or women's actual ability to utilize these rights (Hallward-Driemeier & Hasan, 2013; Dugarova, 2015). A country can score perfectly on WBL while women face significant social barriers to working, owning property, or accessing finance. Furthermore, it overlooks critical non-economic dimensions of empowerment such as political participation, freedom from violence, bodily autonomy, and voice within the household (Htun & Weldon, 2018). Its binary scoring (yes/no) also lacks nuance, failing to capture the quality or effectiveness of laws, or partial reforms (Branisa et al., 2014). While highly valuable for its specific purpose, its narrow focus makes it an incomplete proxy for the multidimensional concept of WE.

The Interchangeability Debate: Convergence, Divergence, and Limitations

The central question is whether CPIA GE and WBL, despite their different methodologies and scopes, capture sufficiently overlapping aspects of the WE environment to be used interchangeably as aggregate proxies in empirical



research. Empirical evidence suggests both points of convergence and significant divergence.

Studies examining correlations often find moderate positive relationships, particularly concerning economic dimensions. Countries scoring higher on legal equality in WBL often (but not always) also receive higher CPIA GE ratings, reflecting that strong legal frameworks are a component assessed within CPIA GE (Hyland et al., 2020; Dugarova, 2015). This convergence suggests they might capture a similar underlying dimension related to formal institutions supporting women's economic agency.

However, substantial divergence is frequently observed, highlighting their non-interchangeability. Firstly, scope mismatch: WBL focuses exclusively on economic law, while CPIA GE incorporates broader social and political dimensions (voice, violence, public services). A country excelling in economic laws (high WBL) but failing to protect women from violence or ensure political participation would score lower on CPIA GE. Secondly, methodology gap: WBL's objective legal coding contrasts sharply with CPIA GE's expert assessment. The latter incorporates perceptions of implementation and effectiveness, leading to potential discrepancies where laws exist on paper (high WBL) but are poorly enforced or countered by norms (lower CPIA GE) (Hallward-Driemeier & Hasan, 2013). Thirdly, normative vs. positive focus: WBL primarily measures the existence of laws (a normative input). CPIA GE attempts, albeit imperfectly, to assess the effectiveness of the broader environment (closer to a positive outcome). Fourthly, coverage difference: WBL covers nearly all countries globally, while CPIA GE is restricted to poorer nations.

Research by Branisa et al. (2013, 2014) comparing various gender indices consistently highlights significant variations in country rankings depending on the index used, underscoring that the choice of proxy fundamentally shapes the analytical results and policy conclusions. Ferrant and Nowacka (2015) emphasize that relying solely on either index risks overlooking critical dimensions: WBL misses non-economic factors entirely, while CPIA GE's subjectivity and opacity limit its reliability for fine-grained comparisons.

Complementary but not Interchangeable Proxies

The literature clearly demonstrates that while the CPIA Gender Equality Rating



and the Women, Business and the Law Index are valuable tools for assessing aspects of the environment relevant to women's empowerment, they are not interchangeable global aggregate proxy variables. Their distinct conceptual underpinnings, methodological approaches (expert assessment vs. legal coding), scope (broad institutional environment vs. narrow economic laws), and coverage (IDA countries vs. global) mean they capture different facets of a complex reality. WBL excels in providing objective, granular data on *de jure* economic rights globally. CPIA GE offers a broader, though more subjective, assessment of the institutional and policy environment fostering gender equality in developing countries. Their moderate correlation reflects overlapping concerns, particularly regarding economic rights frameworks, but their significant divergences highlight their unique strengths and weaknesses.

Therefore, researchers must exercise caution in selecting a proxy. The choice should be driven by the *specific research question* and the *dimension of empowerment* under investigation. Using WBL as a proxy for *economic opportunity* frameworks is valid; using it as a proxy for *overall women's empowerment* is not. Similarly, CPIA GE offers insights into the *policy and institutional environment* in developing countries but is a weak proxy for *actual empowerment outcomes* and lacks global coverage. For comprehensive analyses, researchers should consider using these indices *complementarily* alongside other data sources (e.g., survey data on individual agency, social norms metrics like the SIGI) or explore composite indices that more explicitly aim for multidimensionality (e.g., the Gender Development Index, Gender Inequality Index, albeit with their own limitations). Acknowledging the inherent limitations and non-interchangeability of these prominent proxies is crucial for robust and meaningful research on global women's empowerment.

Methodology

Research Design and Purpose

This study adopts a quantitative, empirical approach through cross-sectional regression analysis to evaluate the appropriateness and interchangeability of two key proxy indicators—CPIA Gender Equality Rating and the World Bank's Women, Business and the Law (WBL) Index—as representative variables for global women's empowerment. The year 2019 is selected as the temporal



boundary, utilizing country-level cross-sectional data for 39 countries, obtained from the World Development Indicators (WDI) database.

The research aims to address the statistical representativeness, directional correlation, and interchangeability of both indicators using Ordinary Least Squares (OLS) regression in a bi-directional univariate modeling approach. The decision to focus on 2019 is grounded in its policy-relevant immediacy prior to the COVID-19 disruption, providing an uncontaminated baseline for institutional gender data (UN Women, 2020; World Bank, 2020a).

Data Sources and Variables

The dataset consists of 39 countries for which both CPIA Gender Equality and WBL Index values are simultaneously available in the WDI database for 2019 (World Bank, 2020b). The CPIA Gender Equality Rating, measured on a scale of 1 to 6, captures the extent to which a country has institutional frameworks promoting gender equality in human capital development (World Bank, 2020c). The WBL Index, scored from 0 to 100, assesses legal gender disparities across eight dimensions, including mobility, workplace, pay, marriage, parenthood, entrepreneurship, assets, and pension rights (World Bank, 2020d; Hyland, Djankov, & Goldberg, 2020).

Both variables are treated as dependent and independent variables in separate regressions to ascertain the direction and strength of their relationship, thereby empirically testing their proxy interchangeability. The research tests $H_0: \beta = 0$ and $H_1: \beta \neq 0$, with a 5% level of significance, for each bi-directional regression model.

Justification for Cross-sectional OLS Regression

Cross-sectional OLS regression is selected due to its robustness in evaluating associative relationships between continuous variables at a fixed point in time (Gujarati & Porter, 2009; Wooldridge, 2013). Given the limited sample ($n = 39$), this approach remains appropriate and statistically valid for initial inference-based analysis, despite the absence of time-series data (Stock & Watson, 2015). OLS provides linear best-fitting estimators under classical assumptions, which are tested in this study for multicollinearity, heteroskedasticity, and normality of residuals (Baltagi, 2011; Kennedy, 2008).

The low likelihood of endogeneity, as both variables are institutionally



determined proxies not subject to reverse causation in this model, supports the appropriateness of the OLS framework (Angrist & Pischke, 2009; Greene, 2012).

Statistical Procedures and Diagnostics

To test directional interchangeability, two univariate OLS models are constructed with the results tabulated (in Table 1 & Table 2):

1. Model A: CPIA Gender Equality = $\beta_0 + \beta_1(\text{WBL Index}) + \varepsilon$
2. Model B: WBL Index = $\beta_0 + \beta_1(\text{CPIA Gender Equality}) + \varepsilon$

By comparing R^2 values, significance of coefficients, and confidence intervals, the research empirically evaluates whether either index can serve as a statistically reliable proxy for the other. In doing so, the study tests both structural equivalence and proxy substitutability (Bollen & Bauldry, 2011; Babbie, 2020).

Proxy Indicator Validity and Conceptual Representation

The study is grounded in the growing debate around measurement validity in global development, particularly the use of proxy variables for complex multidimensional constructs like gender equality and empowerment (Merry, 2016; Fukuda-Parr, 2019). Researchers argue that while the WBL Index provides a legal-institutional focus, the CPIA captures normative development policy alignment (Kabeer, 2018; Klugman et al., 2014). Thus, assessing the statistical interchangeability of these indices offers both empirical and conceptual insights. Moreover, both indices are widely used in empirical policy modeling, but rarely juxtaposed for proxy validity testing in global cross-national analysis (Buvinic & Levine, 2016). This methodological gap necessitates rigorous statistical scrutiny to avoid flawed inferences or double-counting in gender-development econometric models (UNDP, 2020; Sen, 1999).

Ethical Considerations and Limitations

All data used in this study are secondary and publicly available, requiring no ethical approval. However, limitations include the restricted sample size ($n = 39$), potential sampling bias due to missing country data, and the cross-sectional constraint, which prohibits causal inference (Bryman, 2016). The study acknowledges these limitations and emphasizes the need for future longitudinal panel-based validation across multiple years (OECD, 2021).

The risk of indicator oversimplification is also noted, recognizing that proxy



variables may mask important contextual nuances of women’s lived experiences, especially in non-legal domains (Nussbaum, 2003; Goetz, 2007). Nonetheless, by statistically evaluating representativeness, this research contributes to a more methodologically sound basis for comparative gender metrics.

Proxy Dissonance: Evaluating the Empirical Alignment of CPIA Gender Ratings & the Women Business & Law (WBL) Index in Measuring Women's Empowerment

TABLE 1: Cross Sectional Regressional (2019)

Dependent Variable: Women Business & Law Index				
Independent Variable	Coefficient	T-Stats	Prob	Comment
const	35.274	3.332	0.000	Significant, but low change explained
CPIA Gender Equality	10.799	3.58	0.001	
F-Stat	12.817	F-Prob	0.001	
Adjusted R-Square	0.232	Observation(n)	39	
Dependent Variable: CPIA Gender Equality				
Independent Variable	Coefficient	T-Stats	Prob	Comment
const	1.678	3.284	0.002	Significant, but low change explained
Women Business & Law Index	0.023	3.345	0.002	
F-Stat	11.187	F-Prob	0.002	
Adjusted R-Square	0.232	Observation(n)	39	

Research Results and Findings

Overview of Regression Outcomes

The empirical results from the bi-directional univariate cross-sectional Ordinary Least Squares (OLS) regressions reveal a statistically significant and positive relationship between the CPIA Gender Equality Rating and the Women, Business and the Law (WBL) Index, based on the 2019 dataset for 39 countries. In both model specifications—Model A (CPIA as the dependent variable) and Model B (WBL as the dependent variable)—the p-values for the slope coefficients are below 0.05, indicating strong evidence against the null hypothesis of no relationship. These findings hold under both conventional OLS and heteroskedasticity-robust standard error estimations, demonstrating consistency in statistical significance across both specifications (Greene, 2012; Wooldridge, 2013; Stock & Watson, 2015).

However, while the significance is robust, the adjusted R² values are relatively weak, with the OLS model yielding an adjusted R² of approximately 0.23 and the



heteroskedasticity-corrected model showing a further decline to below 0.18. This suggests that although there is a positive and statistically significant correlation, only 18–23% of the variation in one index can be explained by the other, thereby raising important questions about the completeness and mutual substitutability of these proxies as standalone measures of women's empowerment (Kennedy, 2008; Gujarati & Porter, 2009; Angrist & Pischke, 2009).

Proxy Dissurance: Evaluating the Empirical Alignment of CPIA Gender Ratings & the Women Business & Law (WBL) Index in Measuring Women's Empowerment				
TABLE 2: Heteroskedasticity-Corrected Model (2019)				
Dependent Variable: Women Business & Law Index				
Independent Variable	Coefficient	T-Stats	Prob	Comment
const	41.734	3.950	0.000	Significant, but low change explained
CPIA Gender Equality	8.869	3.042	0.004	
F-Stat	9.253	F-Prob	0.004	
Adjusted R-Square	0.178	Observation(n)	39	
Dependent Variable: CPIA Gender Equality				
Independent Variable	Coefficient	T-Stats	Prob	Comment
const	1.858	3.284	0.003	Significant, but low change explained
Women Business & Law Index	0.021	3.345	0.011	
F-Stat	7.213	F-Prob	0.011	
Adjusted R-Square	0.141	Observation(n)	39	

Source: WDI (2019), Authors estimation

Interpretation of Statistical Significance and Weak Explanatory Power

The statistically significant coefficients affirm that institutional and legal indicators of gender equality are correlated to some degree. This aligns with the theoretical expectation that countries with strong gender-equality policies (as reflected in CPIA) are also likely to have gender-responsive legal frameworks (as reflected in the WBL Index) (Hyland, Djankov, & Goldberg, 2020; Klugman et al., 2014). However, the low explanatory power of the models underscores a divergence in what these two indices fundamentally measure. The CPIA Gender Equality indicator evaluates the degree to which national policies promote equal access to education, health, and labor markets, largely from a development policy lens (World Bank, 2020). In contrast, the WBL Index provides a detailed



assessment of formal legal rights and restrictions for women across eight life-cycle domains (World Bank, 2020; UN Women, 2022).

This divergence is further supported by theory. Sen's (1999) capabilities approach argues that legal frameworks and policy outcomes are distinct but interrelated domains of empowerment, requiring both legal recognition and practical realization to produce substantive equality. Similarly, Nussbaum (2003) stresses the importance of structural agency, beyond legal provisions, in fostering actual freedoms. Thus, the weak adjusted R^2 values should not be interpreted as a failure of the models but rather as empirical evidence that these indicators, while related, capture different dimensions of a complex multidimensional phenomenon.

Theoretical and Empirical Reflection

From a theoretical standpoint, the findings support the view that proxy measures must be interpreted within their ontological and methodological boundaries (Merry, 2016; Espeland & Sauder, 2007; Bollen & Bauldry, 2011). The moderate correlation found in the data suggests that the WBL and CPIA indices are not interchangeable but rather complementary in capturing different aspects of women's empowerment. This aligns with Bardhan and Klasen (2021), who argue that combining legal, social, and institutional indicators is essential for a more nuanced understanding of gendered outcomes.

Moreover, the result is consistent with prior evidence that legal change does not automatically translate into gender equality outcomes unless accompanied by institutional enforcement, cultural shifts, and access to services (Htun & Weldon, 2018; Buvinic & Levine, 2016; Goetz, 2007). A country may score highly on the WBL Index due to progressive legal codes, yet have poor implementation or weak normative alignment, thereby scoring lower on the CPIA. This underscores the limits of relying on a single proxy indicator to inform international development policy or track Sustainable Development Goal (SDG) 5 progress (UNDP, 2020; OECD, 2021).

Policy Relevance and Measurement Implications

The policy implications of these findings are profound. Given that international development agencies often rely on either the CPIA or WBL as stand-alone indicators in their monitoring and evaluation frameworks, the empirical



evidence here challenges that practice. The weak explanatory overlap suggests that exclusive reliance on one indicator may provide an incomplete or biased picture of a country's gender policy landscape. These results encourage a multidimensional approach to gender empowerment metrics, supporting the UN Women (2022) call for triangulation of legal, policy, and outcome-based indicators in SDG tracking.

Furthermore, the weak adjusted R^2 in the heteroskedasticity-corrected model (<18%) adds another layer of caution. It suggests that country-specific heterogeneity—such as regional legal traditions, informal norms, or differential enforcement—dilutes the predictive power of the indicators when stripped of error structure assumptions (Cameron & Trivedi, 2005; Kleinbaum et al., 2013). Hence, researchers and policy analysts should consider integrating qualitative context or latent variable modeling when attempting to develop or compare empowerment metrics across diverse jurisdictions.

Summary of Key Empirical Insight

In summary, the study's findings validate the presence of a statistically significant but only moderately explanatory association between the CPIA Gender Equality and the WBL Index. The evidence suggests that the indicators should not be used interchangeably without caveat, as they measure overlapping but distinct conceptual domains of women's empowerment. This study thus contributes to a more refined and cautious application of proxy variables in gender-focused empirical research and policy evaluation.

The Imperative of Contextual and Methodological Scrutiny

The statistically significant yet substantively weak association (Adjusted $R^2 \approx 0.23$ OLS, <0.18 robust) between the CPIA Gender Equality Rating (CPIA GE) and the Women, Business and the Law Index (WBL) demands rigorous, multi-faceted analysis beyond the initial regression findings. While confirming non-interchangeability, this limited explanatory power signals profound complexities in capturing women's empowerment (WE) through institutional proxies, necessitating investigation into mediating pathways, contextual contingencies, and methodological refinements. Drawing insights from diverse research domains highlights critical avenues for deeper inquiry.

Interrogating Measurement Validity and Construct Nuance



The low shared variance underscores fundamental questions about what each index *truly* captures vis-à-vis the multifaceted WE construct. As Mahboob (2022) demonstrates in corporate governance, proxies must align precisely with the underlying theoretical concept to avoid misleading conclusions about phenomena like profitability or ethical performance. Similarly, the weak CPIA GE-WBL linkage suggests neither index adequately represents the core agency dimension central to Kabeer's (1999) and Sen's (1999) WE frameworks. Mahboob, Dahri, et al. (2021) emphasize that governance reforms often fail if they address symptoms rather than root causes; likewise, CPIA GE and WBL may measure institutional *inputs* (policies, laws) rather than empowerment *outcomes* or processes. Further analysis must decompose the indices, examining how specific sub-components (e.g., WBL's "Assets" vs. CPIA GE's "Voice in Society") correlate or diverge, akin to how Ahmed, Aleem, et al. (2023) dissect high-performance work systems to identify specific mediators like human capital impacting innovation. The significant coefficient but low R^2 echoes findings in Mahboob (2020) where traditional financial metrics (like dividends) proved poor proxies for underlying investment efficiency puzzles, necessitating more granular or alternative measures.

Unveiling Contextual Moderators and Omitted Pathways

The unexplained variance (77-82%) strongly implies the presence of powerful moderating or mediating variables omitted from the univariate model. Research across fields consistently shows contextual factors drastically alter relationships. Ahmed, Hamid, et al. (2022b) reveal how agricultural insurance and pollution interact complexly to influence productivity, suggesting similar interactions might exist between legal frameworks (WBL), institutional quality (CPIA GE), and unmeasured factors like social norms or enforcement capacity in shaping WE outcomes. Brohi et al. (2024b) demonstrate how environmentally specific servant leadership influences green competitive advantage *through* mediating pathways like green knowledge sharing and capacities. Analogously, the relationship between de jure rights (WBL) and the broader institutional environment (CPIA GE) likely operates through mediators such as women's collective mobilization (power *with*, Rowlands, 1997), access to justice mechanisms, or the quality of public service delivery – factors not captured in



either index. Ahmed, Sheikh, et al. (2022c) highlight how energy diversification's impact on growth depends on regional context; similarly, the CPIA GE-WBL relationship likely varies significantly across regions, income levels, or political regimes. Future research must explicitly model these moderators (e.g., using SIGI for norms, World Justice Project Rule of Law Index) and mediators (e.g., survey data on women's perceived access to justice).

Addressing Methodological Limitations and Exploring Advanced Techniques

The reliance on a single-year cross-section of 39 countries (inherently limited by CPIA GE's IDA coverage) constrains causal inference and generalizability. Ahmed, Mahboob, et al. (2022a) utilize longitudinal data to explore the nuclear energy-carbon footprint nexus, revealing dynamics invisible in cross-sections. Similarly, panel data analysis tracking changes in CPIA GE and WBL scores alongside potential mediators/moderators over time is crucial to understand the dynamics of institutional change and empowerment. The univariate OLS approach, while establishing association strength, is insufficiently equipped to handle the inherent complexity. Luo et al. (2022) employ sophisticated techniques to understand how SMEs leverage IT for competitive advantage; similarly, structural equation modeling (SEM) or panel vector autoregression (VAR) models, as used in Ahmed, Hamid, et al. (2022b), could simultaneously test the direct CPIA GE-WBL link, the influence of moderators (e.g., level of democracy, prevailing gender norms), and mediating pathways (e.g., female entrepreneurship rates, political participation). Mahboob, Qureshi, et al. (2022) discuss the evolution of complex governance frameworks; measuring WE demands similarly sophisticated, multi-level modeling approaches that bridge macro-indicators with micro-level agency data.

Integrating Micro-Level Agency and Behavioral Insights

A critical weakness of both CPIA GE and WBL is their disconnect from women's lived experiences and agency. Brohi et al. (2018a, 2018b) explore how leadership styles (servant leadership) induce positive behaviors through psychological states (psychological safety, psychological capital). This underscores the need to investigate how macro-level institutional proxies translate (or fail to translate) into micro-level psychological empowerment (*power within*, Rowlands, 1997)



and behavioral agency. Ahmed et al. (2020) show how CSR triggers impact employee green behavior *via* employee well-being, highlighting a crucial mediator often missing in macro-models. Research must integrate nationally representative survey data capturing women's decision-making power, control over resources, freedom from violence, and participation in community/societal organizations (e.g., data from SWPER, DHS, or WEAI modules) to assess the extent to which CPIA GE and WBL scores predict *actual* agency outcomes. Rehman, Mehboob, et al. (2023) examine how technology (blockchain) moderates' remittance impacts; technology access could similarly moderate how effectively women leverage legal rights (WBL) or benefit from institutional environments (CPIA GE).

Leveraging Qualitative Insights for Depth and Mechanism Identification

Quantitative analysis alone cannot fully unravel the "why" behind the weak linkage. Brohi et al. (2024a) investigate the nuanced pathways through which toxic leadership influences counterproductive work behavior, a complexity demanding qualitative insight. Similarly, in-depth case studies, expert interviews, and focus group discussions are essential to understand the mechanisms linking legal reforms (high WBL) to institutional assessments (CPIA GE), and identifying the barriers causing the substantial disconnect. Why do countries with strong laws on paper (high WBL) sometimes receive low CPIA GE scores (indicating weak institutional environment for equality)? Is it due to implementation gaps, conflicting social norms, lack of state capacity, or political resistance? Qualitative research, guided by frameworks like those in Ahmed, Zehou, et al. (2020) exploring employee well-being mediators, is vital to uncover these context-specific pathways and provide meaning to the quantitative variance. Brahmi et al. (2025) analyze how CSR influences brand image through reputation and quality; similarly, qualitative work can explore how the "reputation" of a country's gender equality institutions (partly reflected in CPIA GE) interacts with the reality of its laws (WBL).

Towards a Multi-Method, Multi-Level Research Agenda

The weak empirical link between CPIA GE and WBL, despite its statistical significance, is not merely a methodological footnote; it is a profound indicator of



the conceptual and operational complexities inherent in measuring women's empowerment through aggregate institutional proxies. Moving beyond univariate correlations demands a concerted research agenda that:

1. Employs longitudinal and panel data designs to capture dynamics (Ahmed, Mahboob, et al., 2022a; Ahmed, Hamid, et al., 2022b).
2. Integrates advanced multivariate techniques (SEM, VAR) to model moderators and mediators (Luo et al., 2022; Brohi et al., 2024b).
3. Incorporates micro-level survey data on women's agency and well-being to bridge the macro-micro gap (Ahmed et al., 2020; Donald et al., 2017).
4. Utilizes robust qualitative methods to uncover context-specific mechanisms and implementation barriers (Brohi et al., 2024a; Cornwall & Edwards, 2014).
5. Develops and tests more nuanced, multi-dimensional composite indicators or dashboards that explicitly incorporate agency and context (Permanyer, 2013; Alkire & Foster, 2011).

Only through such a comprehensive, interdisciplinary, and methodologically pluralistic approach can researchers truly unpack the relationship between institutional environments and women's empowerment, moving beyond the limitations of interchangeable proxies towards meaningful measurement that informs effective action. The significant unexplained variance is not a dead end, but a compelling call for deeper, more sophisticated investigation.

Research Conclusion, Recommendations, and Implications

Synthesizing Empirical Findings and Theoretical Expectations

This study empirically evaluated the interchangeability of the CPIA Gender Equality Rating (CPIA GE) and the Women, Business and the Law Index (WBL) as global proxy variables for women's empowerment (WE) using a cross-sectional OLS regression analysis of 39 countries for 2019. The bi-directional univariate regression yielded statistically significant positive coefficients in both directions (CPIA GE regressed on WBL and WBL regressed on CPIA GE). This finding aligns partially with the theoretical expectation of *some* conceptual overlap, particularly concerning the assessment of formal frameworks impacting women's economic opportunities, as both indices incorporate elements of legal rights and economic environment (World Bank, 2023a; World Bank, 2023b; Hyland et al., 2020). The significance suggests that countries scoring higher on



one index tend, *on average*, to score higher on the other.

However, the critically low Adjusted R-squared values – approximately 0.23 in the basic OLS model and below 0.18 in the heteroskedasticity-corrected model – reveal the stark limitations of this relationship. This indicates that the WBL index explains only about 18-23% of the variation observed in the CPIA GE score, and vice versa. The vast majority of the variance (77-82%) remains unexplained by the other index. This empirically robust finding resonates powerfully with the theoretical critiques and conceptual distinctions established in the literature review and theoretical background. As Kabeer (1999) and Sen (1999) emphasize, WE is a profoundly complex, multidimensional construct rooted in agency, resources, and achievements across diverse spheres. The weak explanatory power underscores that CPIA GE and WBL, while both relevant to aspects of the WE environment, capture fundamentally *different* dimensions and are influenced by distinct underlying factors (Branisa et al., 2013; Ferrant & Nowacka, 2015; Htun & Weldon, 2018). The results confirm the theoretical assertion that their distinct methodological foundations (expert assessment of a broad institutional environment vs. binary coding of specific economic laws) and differing scopes (broad social, political, economic, and violence dimensions vs. narrow economic legal frameworks) lead them to reflect non-overlapping realities to a large extent (Batliwala, 2007; Merry, 2006). The significant but weak association reflects partial convergence on formal economic rights frameworks but profound divergence elsewhere.

Conclusion: Non-Interchangeability Confirmed

Therefore, based on the empirical evidence and its alignment with established theoretical frameworks, this study conclusively finds that the CPIA Gender Equality Rating and the Women, Business and the Law Index are not appropriate interchangeable or substitutable research proxy variables for women's empowerment in global comparative analyses. While a statistically significant positive correlation exists, its substantive strength is demonstrably weak. The low Adjusted R-squared values decisively indicate that one index cannot reliably predict or stand in for the other. Using them interchangeably, as this analysis shows, would obscure approximately 80% of the variance in the construct the other index purports to measure, leading to significant measurement error,



potential model misspecification, and misleading conclusions about the state of women's empowerment globally. This reinforces the argument that the choice of proxy must be driven by the specific dimension of empowerment under investigation, acknowledging the unique – and limited – scope of each index (Alkire et al., 2013; Goetz, 2007).

Recommendations for Research and Policy

The findings necessitate specific recommendations for diverse stakeholders:

1. For Researchers: Exercise extreme caution when selecting and applying these indices. *Never* assume interchangeability. Carefully align the chosen index with the *specific theoretical dimension* of empowerment being studied:
 - Use WBL when the research focus is explicitly on *de jure legal frameworks governing women's economic participation* (entrepreneurship, employment, asset ownership). Recognize its limitation to formal laws and economic spheres (Hallward-Driemeier & Hasan, 2013).
 - Use CPIA GE when the focus is on a *broader assessment of the policy and institutional environment* fostering gender equality in *developing countries (IDA-eligible)*, encompassing legal, economic, social service, and protection dimensions. Acknowledge its subjectivity, lack of global coverage, and focus on inputs/environment rather than outcomes (Sundberg, 2007; World Bank, 2013).
 - Prioritize Complementary Use: Whenever feasible, use both indices *complementarily* alongside other data sources (e.g., survey-based measures of agency like the SWPER or WEAI components, social norms metrics like SIGI, or outcome indicators like female labor force participation or political representation) to triangulate findings and capture a more holistic, albeit still incomplete, picture (Donald et al., 2017; Mosedale, 2005).
 - Acknowledge Limitations Explicitly: Rigorously discuss the specific limitations of the chosen proxy(ies) in relation to the theoretical concept of WE within the research design and findings sections. Quantify uncertainty where possible (e.g., noting the low shared variance found here).



2. For Policymakers and International Organizations: Interpret index scores with a deep understanding of their scope and limitations:
 - Avoid Over-Reliance: Do not use a high WBL score as evidence of broad WE achievements, nor a low CPIA GE score as solely indicative of poor economic laws. Understand what each index *actually* measures (Permanyer & Smits, 2019).
 - Demand Context: Supplement index scores with qualitative and context-specific data to understand the lived experiences of women, implementation gaps, and the role of social norms (Cornwall & Edwards, 2014). A WBL score of 100 signifies legal equality on paper, but says nothing about enforcement or cultural barriers (Merry, 2006).
 - Target Interventions Based on Index Purpose: Use WBL data to target *legal reforms* in specific economic areas. Use CPIA GE assessments (where available) to inform broader *institutional strengthening* and *policy dialogue* on gender equality.
3. For Index Creators (World Bank): Enhance the transparency, methodological rigor, and scope of these valuable, yet limited, tools:
 - CPIA GE: Increase transparency in the scoring methodology, source data used, and weighting scheme. Explore possibilities for incorporating more objective, verifiable data points alongside expert assessments. Consider developing sub-scores for its different dimensions to allow for more nuanced analysis (Branisa et al., 2014).
 - WBL: Acknowledge more explicitly the gap between *de jure* and *de facto* rights in reporting. Explore the feasibility of developing complementary modules or indices focusing on *implementation* and *enforcement* of existing laws, potentially leveraging administrative data or expert/survey assessments on enforcement quality (World Bank, 2012). Consider incorporating non-economic legal domains relevant to WE (e.g., laws on violence against women, political participation) to broaden its conceptual relevance, while maintaining clarity on distinct domains.

Theoretical and Practical Implications

The study carries significant implications:



- 1. Theoretical Implications:** It empirically validates theoretical critiques regarding the inability of single-dimensional or institutionally-focused indices to capture the complex, multi-faceted, and agency-centric nature of women's empowerment as defined by Sen, Nussbaum, and Kabeer (Sen, 1999; Nussbaum, 2000; Kabeer, 1999). The weak shared variance underscores the theoretical gap between measuring enabling environments (inputs) and measuring empowerment itself (a process/outcome involving agency). It highlights the enduring relevance of critiques from feminist institutionalism and socio-legal studies concerning the limitations of formal indicators (Goetz, 2007; Merry, 2006).
- 2. Measurement Implications:** The findings serve as a stark warning against the uncritical use of popular aggregate indices as interchangeable proxies in quantitative research. They demonstrate that such practices introduce substantial measurement error and compromise the validity of findings. Researchers must justify proxy selection based on strong conceptual alignment.
- 3. Policy Implications:** Misinterpreting or conflating these indices can lead to ineffective or misdirected policy interventions. Investing heavily in legal reforms (boosting WBL) without addressing implementation or underlying social norms may yield limited empowerment gains. Conversely, focusing solely on broader institutional assessments (CPIA GE) without tackling specific discriminatory laws hinders progress. Policies must be multifaceted, targeting both formal institutions and informal social structures (Htun & Weldon, 2018).

Directions for Future Research

This study points to several fruitful avenues for future inquiry:

- 1. Expanded Empirical Validation:** Replicate this analysis with larger datasets, including more countries (especially middle- and high-income for CPIA GE coverage gaps) and multiple years (panel data) to assess the stability of the relationship over time and across different development contexts. Investigate the relationship *within* specific regions or country groups.
- 2. Multidimensional Proxy Modeling:** Develop and test more sophisticated empirical models that explicitly treat CPIA GE and WBL as distinct,



complementary predictors alongside other relevant proxies (e.g., SIGI, female secondary education, maternal mortality ratios) within structural equation models (SEM) or other multivariate frameworks to better approximate the latent WE construct (Alkire & Foster, 2011; Permanyer, 2013).

3. **Bridging the De Jure-De Facto Divide:** Design and implement studies that quantitatively or qualitatively link WBL scores to measures of *actual implementation* and women's *reported ability to exercise* the rights codified in law, potentially creating "implementation gap" metrics.
4. **Incorporating Agency Metrics:** Prioritize research that integrates survey-based measures of women's agency (decision-making, mobility, freedom from violence, political participation) with country-level indices like CPIA GE and WBL to empirically assess how well these environmental proxies predict *actual empowerment outcomes* at the individual or household level (Donald et al., 2017).
5. **Intersectional Analysis:** Explore methodologies for incorporating intersectional perspectives into the analysis of these indices, perhaps by combining them with sub-national data or other indicators reflecting disparities based on class, ethnicity, location, etc. (Crenshaw, 1989).

In conclusion, while CPIA GE and WBL provide valuable, standardized snapshots of specific aspects relevant to women's empowerment, this research definitively demonstrates they are not interchangeable lenses. Their weak mutual explanatory power is an empirical testament to the theoretical and conceptual complexity of empowerment itself. Advancing both knowledge and practice requires acknowledging their distinct roles, using them judiciously and complementarily, and continually striving for more nuanced, contextually grounded, and agency-sensitive approaches to measuring the multifaceted journey towards women's empowerment globally.



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