Master's Programme in Economic Growth, Population and Development

Track: Economic Development

Better Together:

How Improved Gender Development and Inclusion May Strengthen Social Capabilities and Economic Resilience

by

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In this paper, I strove to connect the dots between gender gaps in human development, the advancement of social capabilities, and resilience to shrinkage. To analyse this, I developed an extended and improved version of the United Nation's Gender Development Index in which I broadened the economic opportunity aspect and provided 20 years of additional data. By applying this analysis to Chile, Mexico, and Brazil, I found that whilst gender development and social capability only improved simultaneously for one country, my index was a better determinant of development of social capabilities than the United Nation's Gender Development Index.

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CCT	Conditional Cash Transfer
FLFP	Female Labour Force Participation
GDI	Gender Development Index
GDP	Gross Domestic Product
GDPPC	Gross Domestic Product Per Capita
GDPPCG	Gross Domestic Product Per Capita Growth
GNI	Gross National Income
GWG	Gender Wage Gap
HGDI	Holistic Gender Development Index
HDI	Human Development Index
HDR	Human Development Report
ILO	International Labour Organisation
IPE	Institutional Political Economy
IPV	Intimate Partner Violence
LFP	Labour Force Participation
NIE	New Institutional Economics
OECD	Organisation for Economic Co-operation and Development
SCI	Social Capability Index
UN	United Nations
WBL	Women, Business and the Law

1   Introduction

Thus far, research in the discipline of economic development has been primarily focused on sustaining economic growth (Andersson, 2018). Recipes and formulae for growth have been developed time and time again, however, for many developing countries, periods of sustained growth have often been followed by periods of frequent and large incidences of shrinkage, which is when income, or GDP per capita, contracts from one year to the next (Andersson, 2018). In recent years, some researchers have opted to divert their attention away from focusing on sustaining growth, to instead understand how to build up economic resilience and thus avoid economic shrinkage (Andersson, Julia & Palacio, 2021). Since 1970, Latin America has been plagued by economic shrinkage, crises such as *La Década Perdida*, and some of the highest inequality rates in the world, resulting in great divergence between Latin America and world leader economies (Bértola, 2016:162; Andersson, Palacio & von Borries, 2022). Whilst some countries have managed to build up economic resilience, many still fluctuate between periods of growth and periods of contraction (Andersson, Palacio & von Borries, 2022).

Andersson's social capability theory has made quantifying economic resilience possible (Andersson, 2018). Thus, analysing the developments of capabilities of different Latin American countries through his framework may provide invaluable insights for policymakers wondering how to improve their nation's economic resilience. However, one pressing economic and social issue in the region is inequality (Gómez Ramírez, 2022). Latin America has some of the world's worst income inequality scores, however, a very pressing issue is gender inequality (Gómez Ramírez, 2022; World Economic Forum, 2022). General violence, but also Intimate Partner Violence, is most prevalent in Latin America (Álvarez-Garavito & Acosta-González, 2021; Gómez Ramírez, 2022). Women often earn less, work less, and don't have the same rights as their male counterparts (World Bank, 2023). Thus, research into the improvement in general and gender inequality is vital.

Indices for measuring gender inequality have been developed, but some are deeply flawed with even their founders using them incorrectly (Schüler, 2006). An example of such is the United Nation's (UN) Gender Development Index (GDI). This measure places a negligible amount of weight on earnings, thus ignoring other important variables which affect

women's economic opportunities (Hirway & Mahadevia, 1996). By basing economic opportunity solely on income, this measure overlooks crucial economic barriers such as unequal asset ownership rights and discrimination in access to credit, therefore revealing the need for a more broad-based index which considers legal economic barriers to gender parity in human development.

Improvements in a nation's social capabilities is hypothesised to result in greater resilience to economic shrinkage, however, it is likely that improvements in social capabilities cannot be made without improvements in a nation's gender gap in human development. Thus, my research question is: "How do gender gaps in human development and social capabilities interact to foster economic resilience to shrinkage?". From this research question, I derived two hypotheses: Improvements in gender gaps in human development and improvements in social capabilities should happen simultaneously, thus allowing for increases in economic resilience, and the Holistic Gender Development Index (HGDI) will be a better measure of gender disparity in human development than the UN's GDI. My findings are that my first hypothesis was supported by one of my studied countries, thus suggesting that future research could strengthen this hypothesised relationship. My second hypothesis was also supported in my results further highlighting the flaws of the GDI.

In this paper, I will investigate the relationships between gender gaps in development, social capabilities and economic resilience. To do this, I will construct a modified and extended version of the UN's GDI and compare this to Andersson et al.'s Social Capability Index (SCI). My alteration of this index will result in 20 additional years of data and a more holistic measure of women's economic opportunity. Further, this is the first paper of my knowledge to apply research on gender inequality to social capability development.

This thesis is structured as follows. In the next section, I will provide context on the topic of economic resilience, the three countries which I will study: Chile, Mexico and Brazil, and the current issues of gender inequality in Latin America. I will close this section with the research gap and my aim.

Next, I will delve into theories and criticisms, with relevant previous research to provide a background. Following this, I will describe my data and methodology, followed by my empirical analysis. I will then enter the discussion and limitations aspect of this paper, which will be followed by my conclusion.

2   Context

The Latin American region has developed a reputation for its persistent trends of economic shrinkage (Andersson, 2018). Despite the term economic shrinkage not being coined by Andersson, I will use his definition due to the use of other elements of his work in this paper. Andersson defines economic shrinkage as when income, or GDP per capita, contracts from one year to the next (Andersson, 2018:2). Thus, economic resilience is a measure of the ability an economy has to both avoid and absorb an economic shock to evade economic shrinking (Andersson, Palacio & von Borries, 2022). In this thesis, I have opted to study Chile, Mexico and Brazil, which is a choice that is neither random nor unjustified. Studying the whole continent would be an unviable undertaking in this project, thus I opted for three countries that have had varied experiences with economic resilience (Briguglio, 2016). The relevance of this is that economic shrinking has been considered to be one of the critical reasons why Latin America has not been able to sustain economic development and thus develop into a region with open-access states (Andersson, Palacio & von Borries, 2022). Further, these three countries represent Euro-America (Chile), Indo-America (Mexico), and Afro-America (Brazil) (Bértola, 2016:163-165; Bértola & Williamson, 2017:2-3). The reason for choosing countries from three different sub-regions is so that I can understand the different experiences with economic resilience alongside three different histories of colonialism (Bértola & Williamson, 2017:2-3).

At the end of the export-led growth era in the 1930s, the Euro-American subsection, which loosely includes Chile, had developed the greatest amount of state capabilities (Bértola, 2016:165). Further, they had built up some of the most diversified domestic economies in the region (Bértola, 2016:165). Social policies were developed and domestic inequalities were reduced during this period of economic diversification, however, nations such as Chile failed to sustain high growth and therefore could not catch up with the world leaders who experienced the Golden Age until the 1970s (Bértola, 2016:165-166). Economic troubles which began before the 1980s debt crisis due to increasingly protectionist policies led to post-democratic dictatorships in the Euro-American subsection of Latin America (Bértola, 2016:166). These dictatorships focused on breaking down welfare policies and expanding economic opportunities using natural resources, such as copper in Chile (Bértola, 2016:166).

This period saw increased economic volatility and divergence; however, Chile was the most successful partially due to its natural resource endowment (Bértola, 2016:166).

The Indo-American countries, of which Mexico was a region, were some of the most advanced pre-colonisation, with civilisations such as the Mayans being regarded as some of the most developed for their time (Acemoglu, Johnson and Robinson, 2002). As some of these countries contained inhabitable conditions for settlers, low disease risk, and vast amounts of natural resources which were already being extracted, colonisers opted to settle and take control of these extractive industries, thus creating extractive states (Acemoglu, Johnson and Robinson, 2001). It was these countries which had pre-existing extractive industries that fared worse from colonisation as the settlers took control of the resources, imposed work on natives and developed 'bad' institutions (Acemoglu, Johnson and Robinson, 2001). By contrast, in less populated nations with low disease risk, more colonisers decided to settle there and thus developed 'good' institutions which allowed for economic growth, aptly referred to as Neo-Europes (Acemoglu, Johnson and Robinson, 2001; 2002). It is debated whether these unfavourable institutions have persisted until the present day, and if this is why many Latin American states suffer from persistent 'bad' institutions and economic volatility (Sokoloff & Engerman, 2000; Coatsworth, 2005). After independence, the Indo-American states were left economically poor, fragmented and volatile (Bértola, 2016:164). For the small Indo-American countries, the end of the export-led growth era caused volatility as they were not able to replace foreign demand with domestic demand (Bértola, 2016:164). Mexico, however, was one of the most fortunate states due to its large size allowing for the expansion of production for domestic consumption during the mid-twentieth century (Bértola, 2016:164). However, despite the 1950s and early 1960s being a positive period for Mexico's economy due to low inflation and exchange rate stability, the mid-1960s brought on an extended period of poor economic performance due to issues such as growing public deficits and inflation (Campos-Vazquez, Domínguez Flores & Márquez, 2017:92).

Unlike the Indo-American states, the Afro-American states, such as Brazil, did not suffer so much from the collapse of colonisation (Bértola, 2016:164). Despite sharing similar negative economic experiences with the Indo-American countries' independence period, they managed to benefit during the post-war period from the export of tropical goods which could not be grown in Europe (Bértola, 2016:164). One negative long-term result of this tropical produce sector is that the legacy of colonial-era slave labour, which originally allowed for large-scale tropical fruit produce, has lived on resulting in substantial inequality in the Afro-American countries today (Bértola, 2016:164). During the lost decades, Brazil saw a reversal

of its growth fortunes which resulted in the nation's early 2000s GDP per capita being on par with pre-boom levels (Axelsson & Martins, 2023).

Despite their social and structural transformations, Brazil and Mexico developed large inequality levels with features such as income and land concentration in the upper classes of society and thus large wealth inequality (Bértola, 2016:173). One example of efforts to improve wealth redistribution is the adoption of conditional cash transfers (CCTs) (Sugiyama, 2011). These programmes have been praised internationally for their positive impact on both children's and women's well-being, however, significant challenges remain in the domain of gender equality in Latin America (Bourguignon, 2004; Ravallion, 2011; World Economic Forum, 2022). Intimate Partner Violence (IPV) in many forms is a problem, but the region has a large issue with the most extreme form of such which is femicide (Álvarez-Garavito & Acosta-González, 2021). This can be seen through Latin America having the second-highest rate of femicides in the world (Álvarez-Garavito & Acosta-González, 2021). This issue is largely due to the prevailing *machismo* culture which can be found across the continent (Álvarez-Garavito & Acosta-González, 2021). This behaviour has been described as hyper-masculinity combined with aggressive behaviour which may be observed through the beliefs by men that women are subordinate to them and that they may be financially, socially and physically controlled by their husbands (Álvarez-Garavito & Acosta-González, 2021:20-21). These views of women being subordinate flow into other aspects of society, such as corruption. Women are more frequently targeted by corruption due to their weaker ability to fight for accountability, and a gender-specific form of corruption, known as sextortion, is one of the primary ways in which corruption negatively impacts Latin American women (Chêne & Rheinbay, 2016). Sextortion typically entails sexual acts being used as a form of currency in a corrupt exchange, and it is largely underreported due to the shame attached to being a victim (Chêne & Rheinbay, 2016). In Latin America and the Caribbean, studies have found that one in five citizens either have experienced or know someone who has experienced sextortion, as well as 71% believing that sextortion occurs at least occasionally (Duri, 2020). Another example of gender inequality in Latin America is the gender wage gap (GWG), with between 11% to 19% of Brazil's GWG being credited to differences in education or experience, and the majority of the remaining gap being due to gender discrimination and social norms (Agénor & Canuto, 2015). Some wonder why we should care about inequality in general, but it has large impacts on economic growth. Lower-income and skill levels are observed in individuals whose parents received lower quality and less education, thus, inequality negatively impacts economic growth through failures in human capital

development (Cingano, 2014). In the case of gender inequality, the way in which it affects economic development can be seen through aspects such as misuse of human capital due to lower female participation in the labour market or women assuming less skilled labour due to lower educational attainment, less access to credit for female entrepreneurs limiting innovation in an economy, or even a lack of female political representation thus reducing the inclusivity of economic development (Chen, 2004; Deere & Leon, 2003). However, the way in which gender equality can improve social capabilities is less clear, and thus I will elaborate on this further in this thesis.

2.1 Research Gap and Aim

As the number of studies on social capabilities and their role in building economic resilience grows, the role that gender inequality plays in this cannot be ignored. Latin America is improving its gender equality, whilst also improving its social capabilities (Camou & Maubrigades, 2017:220; Andersson, Palacio & von Borries, 2022). In some countries, a decrease in the magnitude and frequency of economic shrinking suggests improved economic resilience since the 1970s (Andersson, Palacio & von Borries, 2022). Further, the role that 'good' institutions play in this shift towards greater economic resilience is worth researching. Thus far, little to no research has been carried out analysing the role of gender equality in human development in the improvement of social capabilities and thus stronger institutions and economic resilience. This, therefore, reveals a gap in the existing research. Because of this, I believe that this paper, which will investigate these linkages through the development of a new GDI which takes a more holistic view of women's economic opportunities as well as being extended back 20 years further than the GDI, will provide a large contribution to the existing research on gender inequality in Latin America, the up and coming social capability theory, and the existing research on gender indices. In the next section, I will delve further into the theoretical aspects of economic development, institutions, social capability theory and gender in development whilst also accompanying these theories with relevant research.

3 Theory and previous research

In the previous section, I discussed the economic development and current circumstances around gender inequality in Latin America. Now, I will further explore these topics alongside additional theories and research on economic development, institutions, and end with social capability theory.

In economic development research, the focus on growth has been far greater than the focus on shrinkage (Andersson, 2018; Axelsson & Martins, 2023). The prevailing belief has been that if a country could support sustained economic growth, it could eventually 'catch up' with the larger developed economies (Andersson, 2018). This is due to the Solow convergence theory, which states that poorer economies can experience faster growth than richer countries due to their larger marginal returns to capital (Solow, 1956). However, for many nations, this theory of unconditional convergence hasn't been the case. Other growth theorists have instead proposed conditional convergence, stating that other factors such as institutional quality and human capital differences impact convergence (Hall & Jones, 1999). However, more recent research suggests that economic shrinkage and economic resilience may be equally as important, if not even more important, than economic growth for the transition from a developing to a developed nation (Broadberry & Wallis, 2017; Andersson, 2018; Axelsson & Martins, 2023). More attention began to be paid to economic shrinkage in the 1990s when researchers began to highlight how periods of economic shrinking kept poor countries poor (Broadberry & Wallis, 2017). In the last decade, even greater attention has been devoted to economic shrinking through the works of researchers such as Broadberry, Wallis and Andersson (Broadberry & Wallis, 2017; Andersson, 2018).

Speculated requirements for economic growth and resilience to shrinking have varied through the decades. Some recent concentrations have been on institutions, and even resilience through the development of social capabilities (Broadberry & Wallis, 2017; Andersson, 2018). More traditional growth guidelines, such as the Washington Consensus, were linked to weak economic growth at best as they ignored market failures and presumed too much of governments (Coatsworth, 2005; Lin, 2011; Rodrik, 2014). Other traditional explanations for development include geography, culture and even genetics, but these have been largely dismissed (Lewis, 1954; Acemoglu, Johnson & Robinson, 2004). The economic

miracles experienced by the East Asian tigers have reignited curiosity on what the recipes for modern economic growth truly are, with some now stating that it was in fact the resilience to shrinking present in these countries which helped them to grow so effectively (Andersson, Julia, & Palacio, 2021). This has led to claims that the reasons for Latin America's failure to follow the same trajectory as the East Asian tigers are largely down to its lack of social capabilities and lack of strong institutions (Andersson & Axelsson, 2016:273). Given that social capabilities such as market inclusion and transformation of the economic structure largely affect women through unemployment and being pushed into the informal sector, analysis of Latin American institutions is vital for understanding the current state of gender equality in the region (Horn, 2010; McMillan & Rodrik, 2011).

3.1   Economic Development Theory

Arthur Lewis provided one early relevant theory on structural change and economic development (Lewis, 1954). Now known as the Lewis Curve, he theorised that in many economies, there is unlimited surplus labour that is available at subsistence wages and that in order for an economy to advance, a capitalist class must be developed thus running the risk of increasing inequality (Lewis, 1954). This capitalist class allows for investment in the development of capital, be it advancements in human capital or even technology (Lewis, 1954). Despite his claim of this theory of surplus labour not being applicable in some Latin American countries due to the lack of male surplus labour, evidence has shown that twentieth-century development in the Latin American sub-regions of Indo- and Afro-America have followed Lewis's path of an unlimited labour supply (Lewis, 1954; Bértola & Williamson, 2017:5). However, another theory suggests that advancements in technology need not be done domestically.

In 1962, Alexander Gerschenkron continued this investigation into the research of technological and human capital advancement (Gerschenkron, 1962). He theorised that an economically backwards country could benefit from borrowed technology from more economically advanced countries, thus aiding it in a more rapid economic 'catch up' (Gerschenkron, 1962). One of his examples focused on how Germany was able to benefit from industrialising after England, as they placed more emphasis on the connections between banks and industry. This may be applied to the case of Latin America as through the region's

lack of economic resilience, it is justifiable to consider it economically backwards (Coatsworth, 2008). However, in order to benefit from adopted technology, adequate education and human capital is required to allow for the transition into more structurally advanced roles (Kuznets, 1973). Simon Kuznets stated in his 1973 paper that for a nation to grow, a stable political and social framework capable of conflict resolution without harming its integrity, and proving its ability to facilitate rapid structural change, is required (Kuznets, 1973). The ability to facilitate rapid structural change is important, as economically backward countries typically have higher shares of employment in agriculture and the informal sector (McMillan & Rodrik, 2011). For Latin America, the development of a stable political and social framework has been challenging. The region has the world's highest rates of violence and crime, and in recent years, government support has been falling due to the perception of growing corruption and a weak rule of law for elites (Gómez Ramírez, 2022). Thus, this suggests that the requirements for development are certainly more than achieving growth and the adoption of technology. In 1986, Moses Abramovitz hypothesised that for a nation to benefit from being technologically backward, it needed to be socially advanced (Abramovitz, 1986). Such 'social capabilities' were defined as the ability to absorb more advanced technologies (Abramovitz, 1986:405). They were not measured clearly, however, Abramovitz suggested analysing elements such as education, institutional quality, and openness to competition (Abramovitz, 1986). The consulted theory on human capital development, technological advancement and social capabilities suggests that if a country wishes to develop, it may be economically backward but it should not be socially backward and that capabilities such as openness to competition and good institutions are required. Openness to competition may be intuitive, but the definition of a good institution is not. Thus far, researchers have not been able to settle on what exactly an institution is, nor what its role should be (Searle, 2005; Williamson, 2000).

3.2   Institutional Theory

The two schools of thought I will consider in this thesis are the Institutional Political Economy (IPE) and the New Institutional Economics (NIE) perspectives. Researchers such as Chang and Rutherford have contributed to the IPE perspective (Chang, 2006; Rutherford, 2001). This school of thought believes that we are born into pre-existing institutions and that

human agency plays a greater role in the changing of institutions than simply through game-theoretic economic conditions (Castellano & García-Quero, 2012; Chang, 2007:8). Alternatively, researchers such as North and Acemoglu, have contributed to the NIE perspective (North, 1991; Acemoglu, Johnson & Robinson, 2004). This school of thought believes that institutions are humanly devised limitations that are the 'rules of the game' and that individuals act rationally, consistently choosing the most wealth-maximising option (North, 1990:3; Castellano & García-Quero, 2012).

Douglass North has described institutions as being "The humanly devised constraints that structure economic and social interaction" (North, 1991 : 97). In 2006, North wrote a paper with Wallis and Weingast in which the scholars outlined three social orders: primitive access, limited access, and the open access state (North, Wallis & Weingast, 2006). These social orders are categories by which a nation can be classified based on its institutional development (North, Wallis & Weingast, 2006). Most nations belong under primitive and limited access, also considered the natural state (North, Wallis & Weingast, 2006). Since World War Two, the ascension into open access has been achieved by very few countries as certain 'doorstep conditions' must be met in order to transition from limited to open-access (North, Wallis & Weingast, 2006). Currently, the majority of Latin American countries are considered to be mature natural states, however, none have yet managed to develop into open-access states (Andersson, Palacio & von Borries, 2022).

The doorstep conditions outlined by North, Wallis and Weingast are 1) Rule of law for elites, 2) Perpetual forms of organizations for elites (including the state itself), and 3) Political control of the military (North, Wallis & Weingast, 2006:52). Rule of law for elites is considered an essential element in development as the creation of a legal system which is capable of unbiasedly enforcing contracts and securing property rights reduces the risk of interference from elite vested interests (North, Wallis & Weingast, 2006). Perpetual forms of organisations for elites are important as they require a form of impersonal exchange which improves the stability of the organisation (North, Wallis & Weingast, 2006). Political control of the military allows for the reduction of violence, and greater protection of contracts and property rights (North, Wallis & Weingast, 2006). As no Latin American country has managed to transition from a mature natural state to an open-access economy, it is likely that they have not sufficiently fulfilled each of the doorstep conditions. Perpetual forms of organisations for elites require impersonal exchange (North, Wallis & Weingast, 2006). Personalistic exchange inherited from Spain has been blamed for some of the unstable economic growth in Latin America alongside economic and political instability and the lack

of adequate use of modern technology (North, Wallis & Weingast, 2006). Impersonal exchange removes the role of identity rules thus reducing the level of instability when elite roles within the organisation change (Broadberry & Wallis, 2017). This matters as these changes can also reduce specialisation, division of labour and output thus increasing the likelihood that an economy may shrink (North, Wallis & Weingast, 2006; Broadberry & Wallis, 2017). Further, as previously mentioned, the whole region suffers from weak rule of law for elites which is evident through corruption perception (Gómez Ramírez, 2022; Transparency International, 2022). Political control of the military has been mixed throughout history, with the twentieth century being a time of many military coups and dictatorships in Latin America such as in Brazil, Argentina and Chile (Bértola & Williamson, 2017:6; Astorga Junquera, 2017:30). These doorstep conditions are inter-reliant (North, Wallis & Weingast, 2006). Rule of law is required for political control of the military and perpetual life of organisations, a perpetual organisation requires rule of law for its protection, and political control of the military is needed to protect these organisations, property rights and contracts (North, Wallis & Weingast, 2006). By achieving each of these conditions, North Wallis and Weingast believe that a state becomes wealthier and provides incentives which allow the state to ascend into an open-access order (North, Wallis & Weingast, 2006).

However, North, Wallis and Weingast are not the only theorists on what is required for sustained economic growth. The aforementioned claims that geography, culture and even genetics are the reasons why some countries are rich whilst some are poor have been ruled out by Acemoglu, Johnson and Robinson as key determinants of development due to the cases of North and South Korea, and Haiti and the Dominican Republic (Lewis, 1954; Acemoglu, Johnson & Robinson, 2004). Instead, they have claimed that the true driver of development is institutions (Acemoglu, Johnson & Robinson, 2004). Their theory is that economic institutions define an individual's incentives and that these economic institutions also work alongside political institutions as a mode for conflict resolution is required (Acemoglu, Johnson & Robinson, 2004). One of their primary arguments is that these political institutions assign *de jure* political power, whereas *de facto* political power is assumed by those with greater economic influence (Acemoglu, Johnson & Robinson, 2004). Thus, Acemoglu, Johnson and Robinson believe that economic institutions can allow for economic growth so long as political institutions ensure the protection of property rights, minimise the rents that may be harnessed by power holders, and enforce effective constraints on these power holders (Acemoglu, Johnson & Robinson, 2004). All three of these benchmarks for effective institutions may be undermined by corruption, a common feature in Latin America (Gómez

Ramírez, 2022). Further, in some Latin American countries such as Chile, existing legal gender discrimination in credit access and asset ownership prevents equal access to the possession of property thus perpetuating inequality in property ownership and rights (World Bank, 2023).

As with North, Wallis, and Weingast, organisational persistence is highlighted as an important factor in development by Acemoglu, Johnson and Robinson. They both believe that if the perpetual life of organisations is to be achieved, these relevant political and economic institutions will need to be willing to adapt to change over time (Acemoglu, Johnson & Robinson, 2004; North, Wallis & Weingast, 2006). However, the existence of personalistic exchange in Latin America threatens the ability of organisations in this region to achieve perpetual life (North, Wallis & Weingast, 2006).

Ha-Joon Chang, a proponent of the IPE, discusses how institutions matter, but perhaps not in the way that proponents of the NIE claim (Chang, 2007:1-2, 13). He has argued that too many attempts have been made by developed countries to apply a harmonised global standard set of institutions to developing countries (Chang, 2006; Chang, 2007:2). These are problematic as they inherently ignore what institutions are required in each individual context due to their requirement to adapt to, and collaborate with, local institutions (Chang, 2006; Rodrik, 2008). Further, he argues against some of the prerequisites for growth put forward by the NIE. First, he claims that strong protection of property rights in the form of patents may hinder innovation and economic development rather than promote it (Chang, 2007:10). In addition, he argues that the protection of property rights is not always a requirement for growth. In East Asia, for example, land reform, which infringed on individuals' property rights, has been strongly linked to the subsequent economic development of this region (Chang, 2006). Amendola, Easaw and Savoia agree with Chang's argument, as they found that stronger property rights protection was linked to higher rates of inequality, particularly in countries with low-democracy environments (Amendola, Easaw & Savoia, 2013). This is particularly applicable to Latin America due to it being a highly unequal region which struggles to protect democracy (Gómez Ramírez, 2022).

The conclusion from both perspectives above is that institutions matter (Rutherford, 2001; Amendola, Easaw & Savoia, 2013). Despite the problem of what constitutes a 'good' institution which allows for growth and the development of social capabilities remaining unresolved, the theory discussed has provided a deeper insight into what may be required for strengthening economic resilience.

3.3   Social Capability Theory

The previous theoretical exploration guides us to more recent research on the role of social capabilities in building economic resilience. Institutional change has been advocated for as the ultimate factor behind the reduction in economic shrinking (Broadberry & Wallis, 2017). As with the NIE proponents, Broadberry and Wallis also researched the role of personal and impersonal rules in elite organisations (Broadberry & Wallis, 2017). They claim that when impersonal rules lead to individuals being treated equally, this paves the way for a fairer legal system, therefore, reducing social conflict, increasing food security allowing for a transition away from dependency on agriculture, and an increase in incentives for experimentation leading to greater technological innovation which, in turn, may lead to demographic change due to an increased need for human capital (Broadberry & Wallis, 2017). Thus, impersonal rules and exchange, with all else equal, will reduce inequality, including gender inequality, as it will no longer require previous personal relationships.

This work by Broadberry and Wallis fed into the work of Andersson, where based on research into economic shrinkage and social capabilities, he outlined five interconnected social capabilities: Engagement in more complex and transformative economic activities, inclusive and broad-based economic growth (inclusive regardless of class, ethnicity or gender), generation of social arrangements for conflict resolution, the state's autonomy against vested interests, and the state's accountability in delivering public goods (Andersson, 2018 : 1). Throughout this paper, these social capabilities will be referred to as: 1) Transformation of the Economic Structure, 2) Market Inclusion, 3) Social Stability, 4) Autonomy, and 5) Accountability (Andersson, 2018; Andersson, Julia & Palacio, 2021:3).

The first element, the transformation of the economic structure, refers to the transition from a focus on agriculture to industry and services (Andersson, 2018). This transformation first concentrates on providing food security domestically. Then, economic complexity improves as workers move from the agrarian sectors into more complex areas such as industry and services (Andersson, Julia & Palacio, 2021). Economic structure transformation is considered an element of the social capabilities as when a country's output diversifies, it becomes less dependent on individual resources such as oil or gold and thus the economy is less impacted by fluctuating prices or demand changes (Andersson, Julia & Palacio, 2021). Chile, Mexico and Brazil each rely considerably on natural resources such as oil and copper, thus diversification into other sectors is relevant in their development of greater social

capabilities (Papyrakis & Pellegrini, 2019). Further, women frequently work less skilled jobs so the inclusion of women in this structural transformation is crucial for inclusive development (Camou & Maubrigades, 2017:221).

The role of women in structural change can be linked to the second element of social capability, market inclusion. This refers to how the population is included in the transformation of the economic structure, in turn increasing capabilities across the general population (Andersson, 2018). As a country shifts its economic focus from agriculture to more complex sectors, it is crucial that those who worked in the agrarian sector develop adequate knowledge so that they are not left behind (Andersson, Julia & Palacio, 2021). If this is done, inequality within the country should be lower than if knowledge was not dispersed (Andersson, Julia & Palacio, 2021). Further, by not including this lower-skilled group, a country is not harnessing their human capital capabilities thus negatively impacting its output, growth and increasing inequality (Andersson, Julia & Palacio, 2021). A lack of inclusion may be observed through a larger informal sector, or lower labour force participation rates of excluded groups such as low-skill women (Domínguez, Icaza, Quintero, López & Stenman, 2010; McMillan & Rodrik, 2011). Market inclusion also allows for the development of greater domestic competition thus incentivising innovation (Andersson, 2018; Andersson, Julia & Palacio, 2021). Market inclusion is a clear form of pro-poor growth (Andersson, Julia & Palacio, 2021). Pro-poor growth is crucial for Latin America as it is the continent with the worst income inequality, containing 15 of the 26 most unequal countries in the world (Gómez Ramírez, 2022:4).

Social stability is the third factor of social capability theory. This element, which focuses on the provisions for conflict resolution, is naturally linked to the institutional role of containment of violence (North, Wallis and Weingast, 2006; Andersson, 2018). Social stability may be improved through the adoption of rule of law for elites, perpetual forms of organizations for elites (including the state itself), political control of the military, enforcement of contracts and secure property rights (North, Wallis and Weingast, 2006). When there is frequent social unrest or even civil war, social stability is difficult to maintain (Andersson, Julia & Palacio, 2021). The incidence of violence may in itself reduce economic resilience; however, it also suggests that the government may place more emphasis on reducing violence than on pro-growth or resilience policies (Andersson, Julia & Palacio, 2021). Additionally, it may reduce willingness to invest which will negatively impact growth (Andersson, 2018). The role social stability plays in economic resilience has been highlighted by Rodrik as he found that countries with greater inequality and social conflict were

considerably worse at handling their macroeconomy, which holds strong relevance for the Latin American region due to high inequality, unrest and violence rates across the continent (Rodrik, 1999; Gómez Ramírez, 2022). Management of the macroeconomy is particularly important for women's well-being as when economic crises strike, their livelihoods are under threat due to the sudden saturation of the informal sector (Horn, 2010). Further, IPV has been shown to increase during periods of economic and health crises such as during the COVID-19 pandemic, which is particularly troubling given that Latin America is already the region with the second-highest femicide rate (Lyons & Brewer, 2022).

The fourth element of social capability is autonomy. An autonomous government is one which can keep vested interests at bay i.e., keeping corruption under control and staying committed to and aligned with investors, all whilst imposing progressive taxation and implementing development policies with a positive impact (Andersson, Julia & Palacio, 2021). Under institutional theory, this may be linked to rule of law for elites (Andersson, 2018). The ability to contain vested interests from elites is vital for ensuring the implementation of pro-poor growth policies (Andersson, Julia & Palacio, 2021). Limiting corruption is crucial for the well-being of Latin American women due to the high prevalence of sextortion amongst other forms of corruption in the region (Duri, 2020).

The dispersion of pro-poor transfers may also be linked to a state's accountability, the final element of social capability theory. This is essentially the measure of the quality of governance and dispersion of public goods in a country (Andersson, 2018; Andersson, Julia & Palacio, 2021). The economic outcomes of a state rely heavily on the well-being and development of its individuals; thus, accountability may be observed through variables such as education and healthcare expenditure (Andersson, Julia & Palacio, 2021). Investment in the latter will increase the life expectancy and human capital value of the population (Andersson, Julia & Palacio, 2021). Therefore, it is a worthwhile investment for Latin American countries as it may attract individuals from the informal into the formal sector or even from unemployment into the labour force.

As with the doorstep conditions, these social capabilities are interrelated and therefore a change in one affects the others (Andersson, Julia & Palacio, 2021). One example of this is the issue of food security. For a country to experience a transition from an agrarian-focused economy to a more diversified economy, food supply must be certain. This also reduces the risk of social unrest, thus the elements of transformation of the economic structure and social stability are co-dependent (Andersson, 2018). Further, a certain food supply allows for greater stability of food prices which is crucial for the poor (Milanovic, 2006). Another

example is how a lack of market inclusion may lead to increased conflict (Andersson, Palacio & von Borries, 2022). By excluding a large subsection of society from structural transformation, violence may occur due to increased poverty rates and a lack of employment (Andersson, Julia & Palacio, 2021; Andersson, Palacio & von Borries, 2022). This highlights how social capabilities are not a checklist, but elements which must be developed simultaneously (Andersson, 2018; Axelsson & Martins, 2023).

3.4 Gender Development Index

In this section, I will discuss why I do not consider the common pre-existing measures of gender equality in development to be sufficient. In 1990, the UN developed the Human Development Index (HDI) (United Nations, 1990:14). The purpose of this was to measure national achievement of basic human capabilities (United Nations, 1990:19; Melikidze, Stancliffe & Tarkhan-Mouravi, 1995:5). Based on this, the UN also developed the GDI which was intended to be a gender-disparity adjusted HDI (Melikidze, Stancliffe & Tarkhan-Mouravi, 1995:73). However, this measure has been widely misused (Schüler, 2006). The UN has released documents with an incorrect interpretation of their index, using it as a measure of gender inequality instead of a gender gap in human development measure (Schüler, 2006). However, there are reasons why this measure is insufficient. First, it places too much emphasis on earnings when analysing human development in the wider context of development (Hirway & Mahadevia, 1996). The GWG is of course important to analyse, however, it is not the sole determinant of differences in economic opportunity between men and women. Increased earnings offer women more economic opportunities, but the effect of diminishes greatly when they lack the legal rights to own assets and apply for credit the same way men can. Further, this measure does not extend far enough into history to get a sufficient long-term view of the gender gap in human development in Latin America.

Thus, in the following section, I will describe the data which I will use to construct an improved and extended version of the GDI which I have called the Holistic Gender Development Index (HGDI). Further, I will discuss the data I will use to measure economic growth and shrinkage as well as the SCI.

4 Data

In this section, I will discuss the data points that I use in my analysis of the gender gap in human development, economic growth and social capabilities. The construction and applications of my HGDI are discussed in depth in the following methodology section.

In the UN's GDI, variables are chosen under the dimensions of 1) long and healthy life, 2) knowledge, and 3) standard of living (United Nations, 2021). These three dimensions are then developed into sub-indices called 1) Life expectancy index, 2) Education index, and 3) Economic opportunity index (United Nations, 2021). To measure a long and healthy life, life expectancy is used. For knowledge, the index uses expected years of schooling and mean years of schooling. To measure standard of living, Gross National Income (GNI) per capita purchasing power parity (PPP) is used (United Nations, 2021). However, in the previous section, I explained how GNI per capita PPP is not a sufficient measure of economic opportunity. Further, finding consistent data on earnings by gender or data on the GWG before 1990 is challenging. Perhaps if I were analysing data-rich countries of the West such as Britain or France, I would easily be able to obtain the relevant data to independently extend the GDI using the same indicators. However, working with data from Latin America makes this far more difficult. This region is notorious for its lack of consistent historical data meaning that I have had to proxy certain variables in order to replicate and alter the GDI (Delgado-Bello, Sáchez & Ubeda, 2023).

For the long and healthy life dimension of my index, I use the life expectancy at birth variable, with this data being sourced from the World Bank (World Bank, 2021d). Under the knowledge dimension, I use average years of schooling for the population aged 15-64. This data is sourced from the Barro Lee database (Barro & Lee, 2013). Unfortunately, expected years of schooling is not available for my selected countries in this time period therefore I must omit this variable, however, I do not expect it to significantly impact my results. My greatest challenge in data sourcing for this index was finding data for female and male wages from 1970 to today. However, the considerable issue of the GDI placing too much emphasis on earnings allowed me to replace this element with a broader variable. To analyse standard of living, I use the Women, Business and the Law (WBL) index from the World Bank (World Bank, 2023). This index begins in 1970 and it measures women's economic opportunity

through laws and regulations. This index ranges from 0-100 with a score of 100 representing equal economic opportunity between women and men (World Bank, 2023). This index's sub-indices focus on mobility, workplace, pay, marriage, parenthood, entrepreneurship, assets and pension, therefore, providing a more in-depth measure of women's economic opportunity than earnings (World Bank, 2023). Together, these variables construct my index to measure the gender gap in relation to human development in Chile, Mexico and Brazil. The broad coverage of this index is why I named it the Holistic Gender Development Index (HGDI). Information on the construction of this index can be found in the methodology section.

In order to analyse the relationship between the HGDI and economic resilience, I use GDP per capita growth. This data was sourced from the World Bank (World Bank, 2022). By using these variables, I can compare the frequency and magnitude of economic growth and shrinking with developments in the HGDI.

The frequency and magnitude of economic shrinking may suggest a lack of social capabilities or economic resilience within a state, however, to truly gain a deeper insight into each country's social capabilities, more than just GDP per capita annual growth is required. Therefore, I also compare the HGDI with Andersson, Julia and Palacio's SCI values for Chile, Mexico and Brazil (Andersson, Julia & Palacio, 2021). In their 2021 paper, they calculated index values from the 1960s to the 2010s, thus providing SCI values for each decade of my study. The index was calculated using one variable for each pillar of the framework (Andersson, Julia & Palacio, 2021). Transformation of the economic structure was measured using the Economic Complexity Index from the Economic Complexity Observatory. This is a valuable measure of structural transformation as economic complexity measures provide information on how much productive knowledge is in an economy (Axelsson & Martins, 2023). Further, countries which score higher on these indices tend to experience fewer episodes of economic shrinking (Axelsson & Martins, 2023). Market inclusion was measured using the disposable income GINI coefficient from Solt's (2020) Harvard Database. This Gini coefficient provides a suitable measure of general wealth inequality in a state (Axelsson & Martins, 2023). Social stability was measured using the Polity 5 Index from the Centre for Systemic Peace. The Polity measure, which emphasises political freedom, is the most widely used resource by researchers for tracking regime change and authority (Murphy, 2016; Marshall & Gurr, 2020). When tested against Freedom House, Heritage, and Fraser, PolityIV, another Polity measure, was one of the best in terms of statistical significance for explaining the link between the HDI and economic freedom (Murphy, 2016). Autonomy was measured using the inflation rate from the International

Monetary Fund. Inflation is a good measure of autonomy as it captures to some extent the autonomy of institutions within the state due to the central bank's autonomy requirement (Axelsson & Martins, 2023). Accountability was measured using life expectancy from the World Bank's World Development Index. Life expectancy has been considered to be one of the greatest measures of accountability, as it is essentially a measure of the government's success (Andersson, Julia & Palacio, 2021). It displays the real outcomes in human health, educational quality and attainment, and quality of infrastructure (Sen, 1998).

In this study, 26 countries from Africa, Asia and Latin America were measured. An index value of 26 represents the worst social capabilities of the country sample, whereas a value of 1 represents the best (Andersson, Julia & Palacio, 2021). The values for each decade can be found in Table 1 below.

Table 1: SCI Scores

Decade	Chile	Mexico	Brazil
1970s	15	10	19
1980s	16	14	17
1990s	11	12	15
2000s	6	3	13
2010s	4	7	11

Source: Andersson, M., Julia, J.P., & Palacio, A. (2021)

By using the HGDI, GDP per capita growth, and the SCI, I can track how the trajectory of my index interacts with each country's development of social capabilities, which will in turn provide a deeper insight into the relationship between gender gaps in human development, social capabilities and economic resilience. In the next section, I will explain the calculations and construction of the HGDI.

5 Methodology

In this section, I will explain the HGDI's calculation and construction. As the GDI is insufficient in its estimation of economic opportunity, I have opted to develop a new index which improves the economic opportunity aspect of the GDI. Further, as the GDI is only recorded from 1990, I have opted to extend my index back 20 years further, to 1970, so that a greater historical insight into the measure of gender gaps can be made whilst also comparing these findings to the development of social capabilities and the strengthening of economic resilience through important decades such as the 1980s.

5.1 Index Construction

To be somewhat comparable to the GDI, I opted to construct the HGDI in a similar manner. The GDI assigns equal weight to each dimension. The first step of the calculation requires carefully selecting maximum and minimum values for each variable by gender. These values for each element of my index are as follows:

Table 2: Maximum and Minimum values of each dimension of the HGDI

Dimension	Indicator	Minimum	Maximum
Long and healthy life	Life expectancy at birth, Female	12.72	88
Long and healthy life	Life expectancy at birth, Male	10.05	82.9
Knowledge	Average years of schooling, Female	0.03	13.35
Knowledge	Average years of schooling, Male	0.1	13.26
Standard of living	Women, Business and the Law Index, Female	0	100
Standard of living	Women, Business and the Law Index, Male	100	100

Sources: Dimensions are sourced from United Nations, 2021. Life expectancy at birth is sourced from World Bank, 2021d. Average years of schooling is sourced from Barro & Lee, 2013. The Women, Business and the Law Index is sourced from World Bank, 2023.

Naturally, justification of each minimum and maximum value is required.

Long and healthy life

Within the technical notes guide on constructing indices such as the HDI and GDI, the UN claims that it is justifiable to set the natural zero of life expectancy at 20 given that in the 20th century, no country had a life expectancy at birth of less than 20 (United Nations, 2021). However, within my dataset from the World Bank of life expectancy across all countries recorded from 1970 to the present day, the lowest life expectancy at birth was 12.72 years thus I opted for this as my minimum value (World Bank, 2021d). The maximum life expectancy recorded in the dataset for the selected time period was 88 thus I opted for that as my maximum value.

Knowledge

The technical notes guide assigns a minimum value of 0 for both expected years of schooling and mean years of schooling, with the maximum values being 18 and 15, respectively (United Nations, 2021). Their reasoning for this is that 18 years of schooling is the equivalent of a master's degree in many countries therefore it should be set as the maximum expected value (United Nations, 2021). For mean years of schooling, the maximum is set to 15 as that is the projected maximum mean years of schooling for 2025 (United Nations, 2021). However, I am only using average years of schooling. In the Barro and Lee dataset, I found the minimum value for women to be 0.03 years of schooling, whereas the maximum recorded was 13.35. For men, the minimum recorded value was 0.1 whereas the maximum recorded value was 13.26 years of schooling (Barro & Lee, 2013). I opted to use these recorded maximum and minimum values from the Barro Lee dataset as my maximum and minimum values in my index.

Standard of Living

The GDI uses GNI per capita (PPP) as their sole measure of standard of living (United Nations, 2021). However, given that more factors than income affect women's economic opportunity and that one of my aims with this study was to extend this index back from 1990 to 1970, I opted to replace GNI with the World Bank's WBL Index. In this, the minimum value possible for women is 0 and the maximum is 100. For men, the minimum and maximum values are set to 100 as the index measures to what extent a woman can have the same economic opportunity as a man (World Bank, 2023). Therefore, my maximum and minimum values for women and men in my index are 100 and 0 for women and 100 represents both maximum and minimum for men.

To provide more clarity, a visual construction of my index can be seen in Table 3 below.

Table 3: Construction of the Holistic Gender Development Index (HGDI)

	Female			Male		
	Long and healthy life	**Knowledge**	**Standard of Living**	**Long and healthy life**	**Knowledge**	**Standard of Living**
Dimension	Long and healthy life	Knowledge	Standard of Living	Long and healthy life	Knowledge	Standard of Living
Indicators	Life Expectancy	Average years of schooling	Women, Business and the Law Index	Life Expectancy	Average years of schooling	Women, Business and the Law Index
	⇓	⇓	⇓	⇓	⇓	⇓
Dimension Index	Life expectancy Index	Education Index	Economic Opportunity Index	Life expectancy Index	Education Index	Economic Opportunity Index
	⇓	⇓	⇓	⇓	⇓	⇓
	Holistic Human Development Index (Female)			Holistic Human Development Index (Male)		
	⇘			⇙		
	Holistic Gender Development Index (HGDI)					

Sources: Dimensions and structure are sourced from United Nations, 2021. Life expectancy is sourced from World Bank, 2021d. Average years of schooling is sourced from Barro & Lee, 2013. The Women, Business and the Law Index is sourced from World Bank, 2023.

This index construction is the same as the GDI, however, I removed expected years of schooling and replaced GNI per capita with the WBL index. This allows me to add a deeper insight into women's economic opportunity, and 20 additional years of data which is both beneficial in this study and for future research on the topic of gender in human development.

In order to calculate the HGDI, each variable must first be normalised within the maximum and minimum values and thus calculated into each respective dimension index. The method I used, which is the same as the method used for the GDI, is as follows:

Equation 1: Formula for the Dimension Index

$$Dimension\ index = \frac{Actual\ value - Minimum\ value}{Maximum\ value - Minimum\ value}$$

Source: United Nations, 2021

Using this method, I constructed dimension indices for Life Expectancy, Education and Economic Opportunity for both men and women. To construct a Holistic HDI from this, the same formula for the regular HDI was used:

Equation 2: Formula for the Holistic Human Development Indices

$$HHDI_f = (I_{Life\ Expectancy_f} * I_{Education_f} * I_{Economic\ Opportunity_f})^{\frac{1}{3}}$$

$$HHDI_m = (I_{Life\ Expectancy_m} * I_{Education_m} * I_{Economic\ Opportunity_m})^{\frac{1}{3}}$$

Source: United Nations, 2021

Finally, to derive the HGDI from each HHDI, I divided the female HHDI by the male HHDI:

Equation 3: Formula for the Holistic Gender Development Index

$$HGDI = \frac{HHDI_f}{HHDI_m}$$

Source: United Nations, 2021

With the creation of this index, I can now analyse the relationship between gender gaps in human development, social capabilities and economic growth. In the literature review, I revealed how despite efforts being made to improve pro-poor growth and women's well-being, challenges remain (de la Brière & Rawlings, 2006; World Economic Forum, 2022). Further, the fact that corruption and economic crises often hurt women more than men suggests that we may see worse gender gaps in countries with less economic resilience (Duri, 2020; Lyons & Brewer, 2022). Finally, given that the informal sector is primarily female, we may see large gender gaps in human development remaining in countries with larger informal sectors (Horn, 2010). Thus, after analysing the existing theories and literature, my hypotheses are as follows:

1. Improvements in gender gaps in human development and improvements in social capabilities should happen simultaneously, thus allowing for increases in economic resilience.

2. The HGDI will be a better measure of gender disparity in human development than the UN's GDI.

The next section of this thesis provides visualisations of the ways in which these three variables interact.

6 Empirical Analysis

6.1 Results

In the previous section, I explained the construction of the HGDI and made some predictions on what we may see based on the consulted literature. Now, I will visually present and explain the trajectories of the HGDI, the SCI and economic growth for Chile, Mexico and Brazil from 1970 to 2021. To do this, I will first explore shrinkage episodes and growth in each country, following this, there will be a visualisation of the SCI growth paths. After, the HGDI values for each country will be presented and I will close off the results section with visualising economic growth, the HGDI and the SCI on a single graph for each country to clarify their interrelations, and finally with a table of results. By doing this, how each country compares to another, and how the elements interplay on a national level, will be elucidated.

To analyse the relationship between social capabilities, gender gaps in human development and economic resilience, we must first assess the shrinkage frequency in my selected countries. In Table 4 below, we can view the shrinkage frequency by decade in each country.

Table 4: Shrinkage episodes by decade

Year	Chile	Mexico	Brazil
1970s	3	0	0
1980s	2	5	4
1990s	1	2	5
2000s	1	5	2
2010s	2	1	3
2020-22	1	1	1
Total	10	14	15

Source: World Bank (2022)

Chile has clearly had the lowest incidence of shrinking over the 52-year period with 10 incidences, followed by Mexico with 14 incidences and Brazil with 15 incidences. Thus, the

Chilean economy exhibits the strongest resilience to shrinking. In the 1970s, Chile saw the greatest frequency, with this decade also being its worst, closely followed by the lost decade of the 1980s and the 2010s. Mexico's worst period was the 1980s alongside the 2000s. Brazil suffered the most during the 1990s shortly followed by the 1980s. However, shrinkage magnitude is also hypothesised to have a negative impact on economic resilience (Andersson, 2018). Thus, we cannot ignore the magnitude of shrinkage, nor should we ignore the fluctuations between extreme growth and shrinkage.

Figure 1: Chile GDP Per Capita Growth (Annual %), 1970-2021
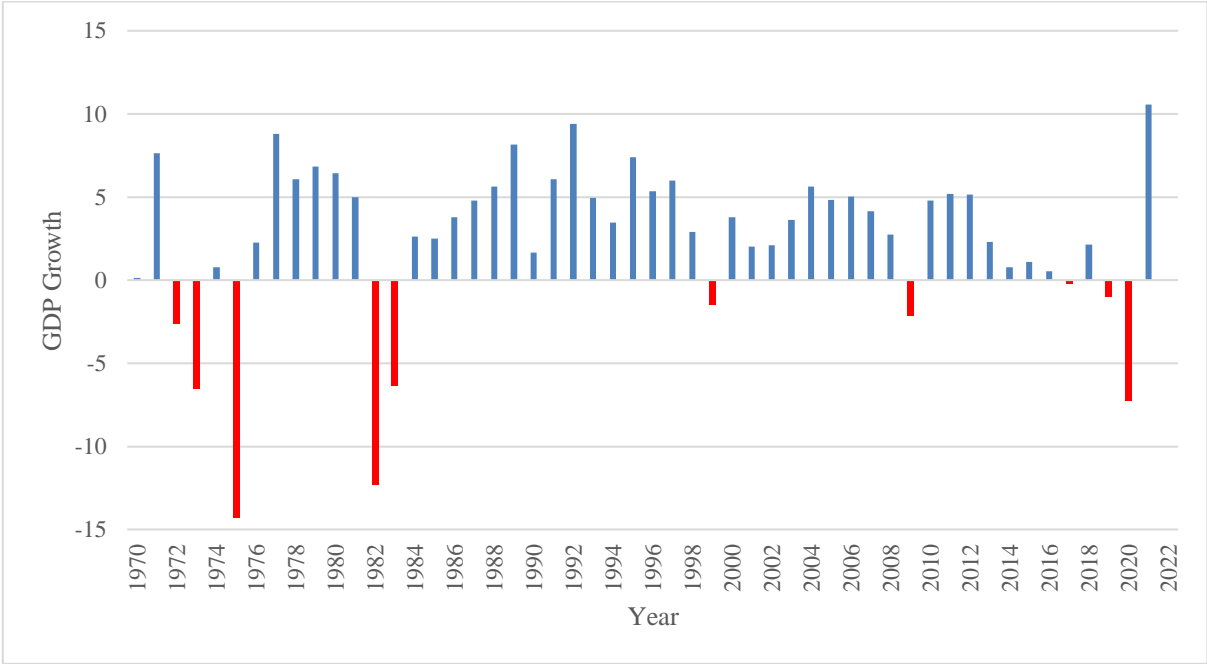
Source: World Bank (2022)

The above bar chart shows the rate of economic growth and shrinkage in Chile. As mentioned in Table 4 above, the 1970s, 1980s and 2010s were the worst decades for Chile in terms of shrinkage frequency, however, shrinkage magnitude was not as bad in the 2010s as in the other two decades. Further, the rate of GDP growth also reduced from years when growth frequently rose above 5% in the late 1980s and 1990s to averaging between 5% and 1% in more recent years. This reduced volatility suggests greater economic resilience in the last two decades.

Figure 2: Mexico GDP Per Capita Growth (Annual %), 1970-2021
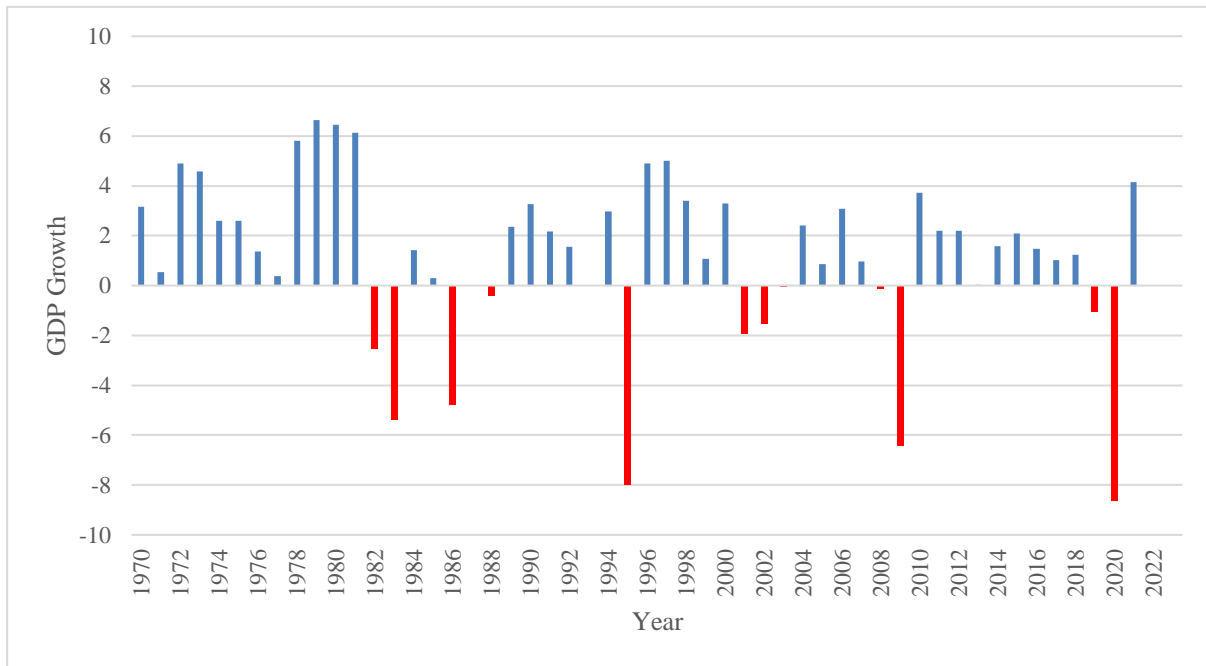
Source: World Bank (2022)

In Mexico's bar chart, we can see how high growth rates were common until the 1980s debt crisis struck resulting in lower growth rates and frequent shrinkage with magnitudes of above 5%. Volatility in growth and shrinkage has not seemed to slow down due to each decade since the 1980s featuring shrinkage and some incidences with great magnitude such as 1995 with -8%, 2009 with -6% and 2020 with -8.6%. This history of growth and shrinkage suggests that thus far, Mexico has not been successful in building up resilience to shrinkage.

*Figure 3: Brazil GDP Per Capita Growth (Annual %), 1970-2021*
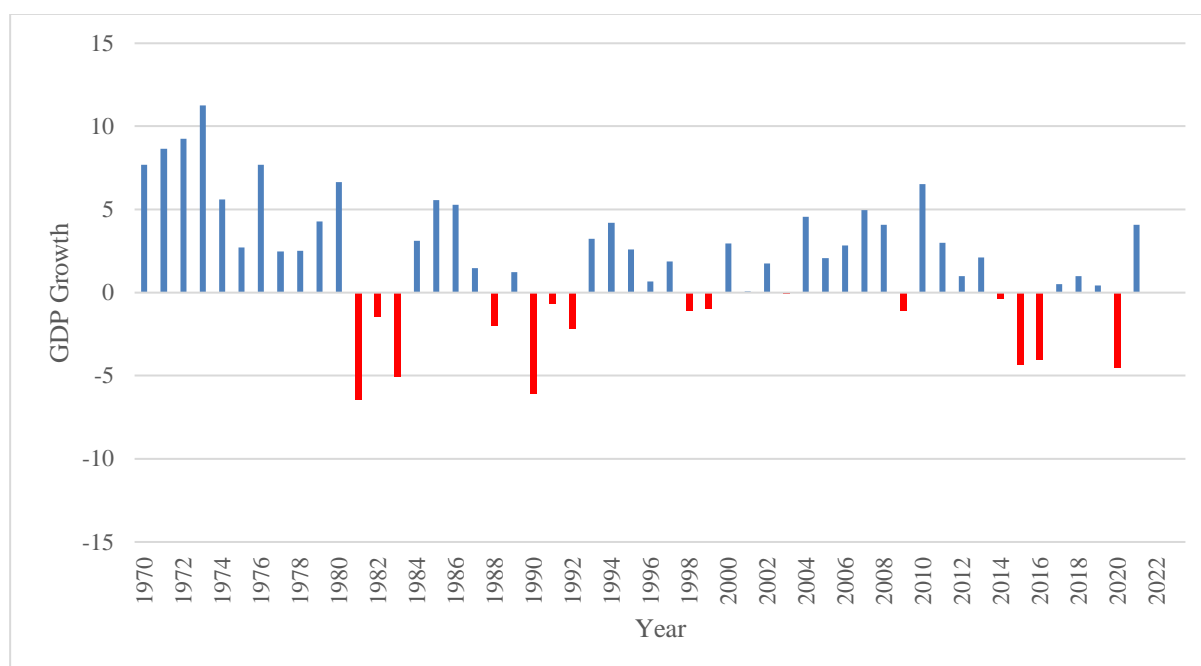
Source: World Bank (2022)

Brazil showed strong, persistent economic growth through the 1970s, however, the 1980s was the beginning of a period of lower growth rates and frequent shrinkage with a considerable magnitude of up to -6.5%. At first glance, one may attribute the transition from high growth to shrinkage as being a result of these economies growing so rapidly during the 1970s, however, the remaining gaps between these countries and leading economies suggests that there is still plenty of room for these economies to grow (Bértola, 2016:162). This period of volatility continued through the 2000s, when the frequency and magnitude of shrinking reduced. This period of more consistent economic growth continued until the 2010s, however, a period of low growth and more frequent shrinkage began in 2014 and has persisted ever since. The recent increase in frequency and magnitude of economic shrinking suggests that Brazil has not yet built up its resilience to shrinking.

Economic resilience has been hypothesised to be built up by social capabilities (Andersson, 2018). In the data section of this paper, I described and presented the SCI developed by Andersson, Julia and Palacio (2021) which included long-term values for Chile, Mexico and Brazil. Figure 4 below visualises these values.

Figure 4: SCI, 1970-2010
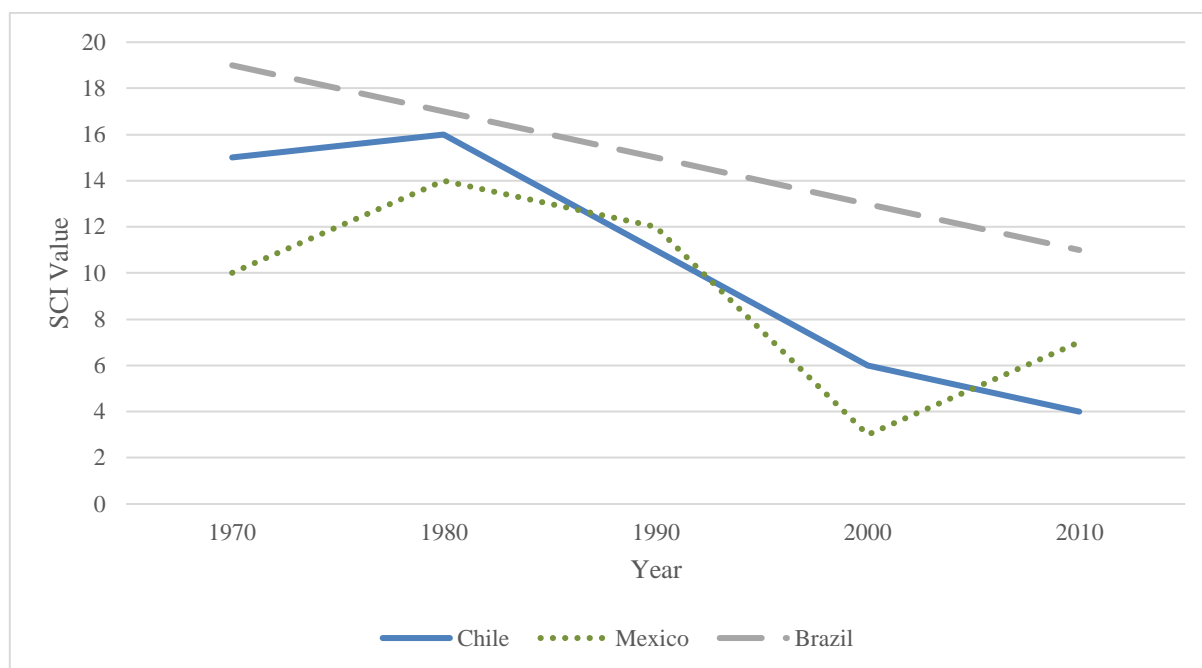
This index classifies a lower score as being a signal of greater social capability (Andersson, Julia & Palacio, 2021). Chile's worst periods for economic shrinkage were the 1970s, 1980s and 2010s, however, more modest growth and shrinkage were experienced in the 2010s. The index above shows a steady increase in Chile's social capabilities from the second worst position to the best position, suggesting that Chile has the strongest social capabilities of each of my chosen countries. Mexico experienced its worst periods of economic shrinkage in the 1980s and 2010s, however, volatility in economic growth and incidences of large shrinkage are still a common feature in the Mexican economy. In the 1970s, Mexico had the best SCI score of my three countries. However, this took a turn in the 1980s when it worsened until finally falling to a low level in the 2000s. In the 2010s, this score once again increased suggesting that Mexico's social capabilities are largely fluctuating further supporting the current evidence of Mexico lacking economic resilience. Brazil saw its greatest deal of shrinking in the 1990s, with a slightly lower rate in the 1980s. The 2010s saw another increase in economic shrinking alongside low levels of economic growth. The index above placed Brazil in the worst position during the 1970s, however, it has steadily improved through the decades. Despite these improvements, it has still consistently ranked the lowest in each decade suggesting a lack of social capabilities and economic resilience.

In the Data and Methodology sections above, I described the variables I would use for the HGDI, and how I structured and calculated the index. Table 5 below contains the HGDI values of each country.
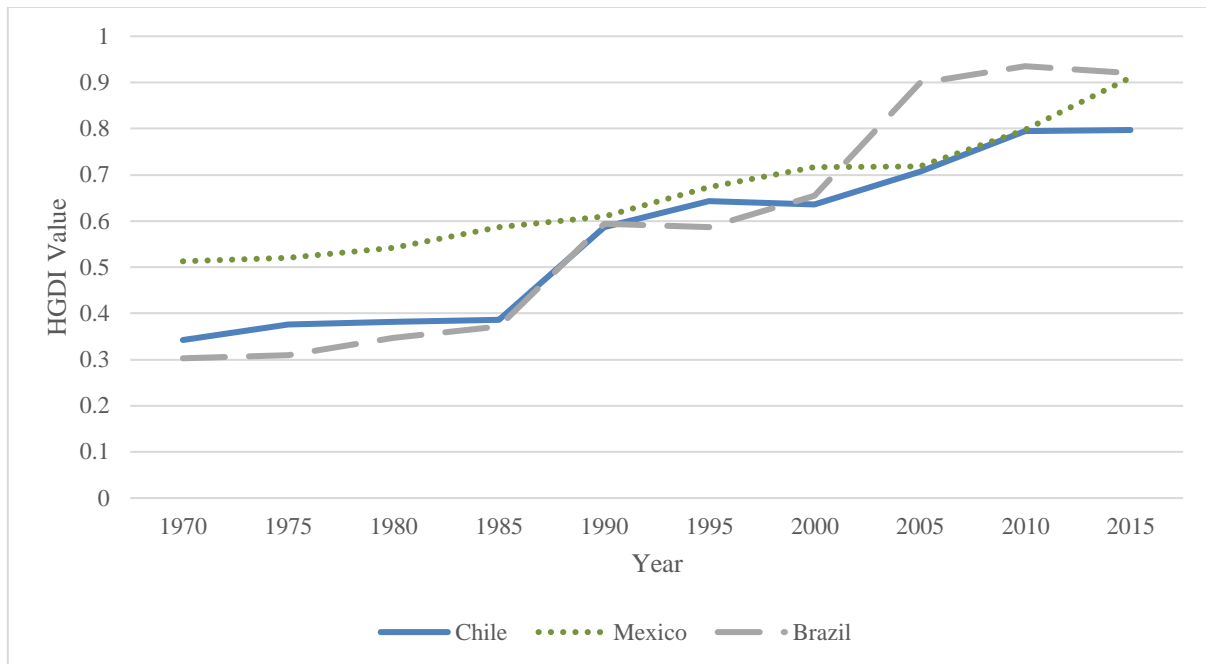
Table 5: HGDI Scores for Chile, Mexico and Brazil, 1970-2015

Year	Chile	Mexico	Brazil
1970	0.34	0.51	0.30
1975	0.38	0.52	0.31
1980	0.38	0.54	0.35
1985	0.39	0.59	0.37
1990	0.59	0.61	0.59
1995	0.64	0.67	0.59
2000	0.64	0.72	0.66
2005	0.71	0.72	0.90
2010	0.79	0.80	0.94
2015	0.80	0.91	0.92
Total Improvement	0.46	0.40	0.62

Sources: Formulae for the Index are sourced from United Nations, 2021. Life expectancy is sourced from World Bank, 2021d. Average years of schooling is sourced from Barro & Lee, 2013. The Women, Business and the Law Index is sourced from World Bank, 2023.

My calculations have suggested that in 1970, of my selected countries, Mexico had the greatest amount of gender equality in human development. From 1970 through to my most recent data point, 2015, Mexico's ranking has only increased. Chile started in 1970 from the second highest point. It has mostly increased, despite a slight drop between 1995 and 2000, with a large jump of .2 between 1985 and 1990. In 2015, however, Chile ranked the lowest of my three countries. Brazil began with the worst score of 0.3 in 1970, however, it has also only increased experiencing large jumps of .22 between 1985 and 1990 and .24 between 2000 and 2005. As with the SCI, Figure 5 below shows the HGDI trajectories of each country over time.

Figure 5: HGDI, 1970-2015

Sources: See Table 5

In the above line chart, we can see how Brazil has made by far the greatest improvements in gender equality in human development. It improved by 206.67% between 1970 and 2015 followed by Chile with an improvement of 135.29%, thus leaving Mexico with the worst, but still a considerable improvement, of 78.43%.

To get a better picture of the interrelated changes between economic growth and shrinkage, the SCI and the HGDI, we will observe each of them on one graph per country.

*Figure 6: Economic Growth, SCI and HGDI, Chile 1970-2021*

In the above graph, we can see the paths over time for economic growth and shrinkage, the SCI and the HGDI for Chile. In this and the following two graphs, GDP per capita growth and the SCI are measured on the left axis, whereas the HGDI is measured on the right axis. Further, as mentioned previously, lower SCI scores represent greater social capabilities whereas a higher HGDI represents a lower gender gap in human development.

Figure 6 above shows a large frequency and magnitude of shrinking throughout the 1970s and early 1980s. However, Chile's SCI score improves in 1980, shrinkage halts after 1983, and Chile's HGDI score improves between 1985 and 1990. In 1990/1991, we see an adjustment in the rate of change for both the SCI and HGDI. A plateau is reached for HGDI through the late 1990s, until shrinkage occurs in 1999 and in 2000, once again there is an alteration of the rate of SCI and HGDI. As both SCI and HGDI have been improving, we can see how both the frequency and magnitude of economic shrinking have reduced, with the exception of 2019 and 2020. By visually analysing this graph, we can see how Chile's rate of economic shrinking has reduced as its HGDI and SCI have improved.

Figure 7: Economic Growth, SCI and HGDI, Mexico 1970-2021
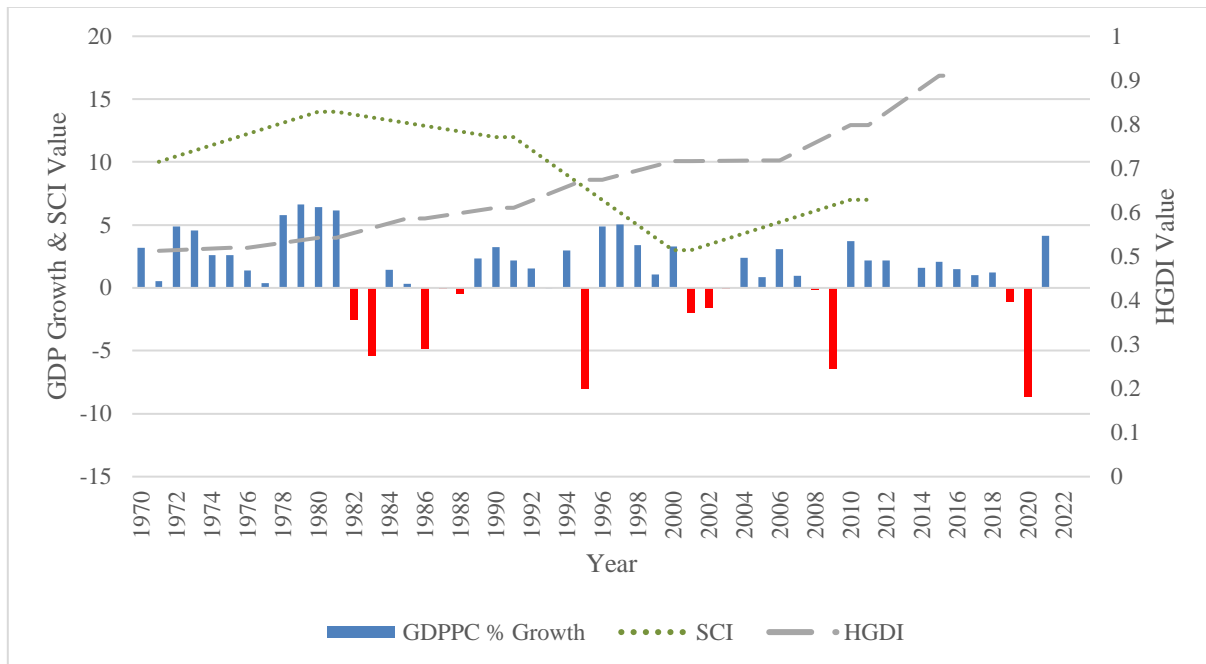
Sources: See Figure 6

Above, we have the graph for Mexico. The 1970s were a period of growth in Mexico however, the 1980s saw this period of growth come to an end as growth severely reduced and shrinkage was both great and frequent. Despite the 1970s being a period of growth, the SCI visibly worsened. From 1980 however, the SCI and HGDI both seemed to improve. Shrinkage frequency fell from five in the 1980s to two in the 1990s, with one large incidence of -8% in 1995. Through the 1990s the HGDI steadily increased whereas the SCI increased rapidly. Despite these improvements, the 2000s contained five years of shrinkage and a worsening SCI score. During the 2010s, growth was somewhat sustained until 2019 and 2020. Mexico's economy has been quite volatile since 1970, however, so have their social capabilities. By visually analysing this graph, we can see how Mexico's HGDI has improved, however, it still lacks economic resilience and consistent strengthening of its social capabilities.

Figure 8: Economic Growth, SCI and HGDI, Brazil 1970-2021
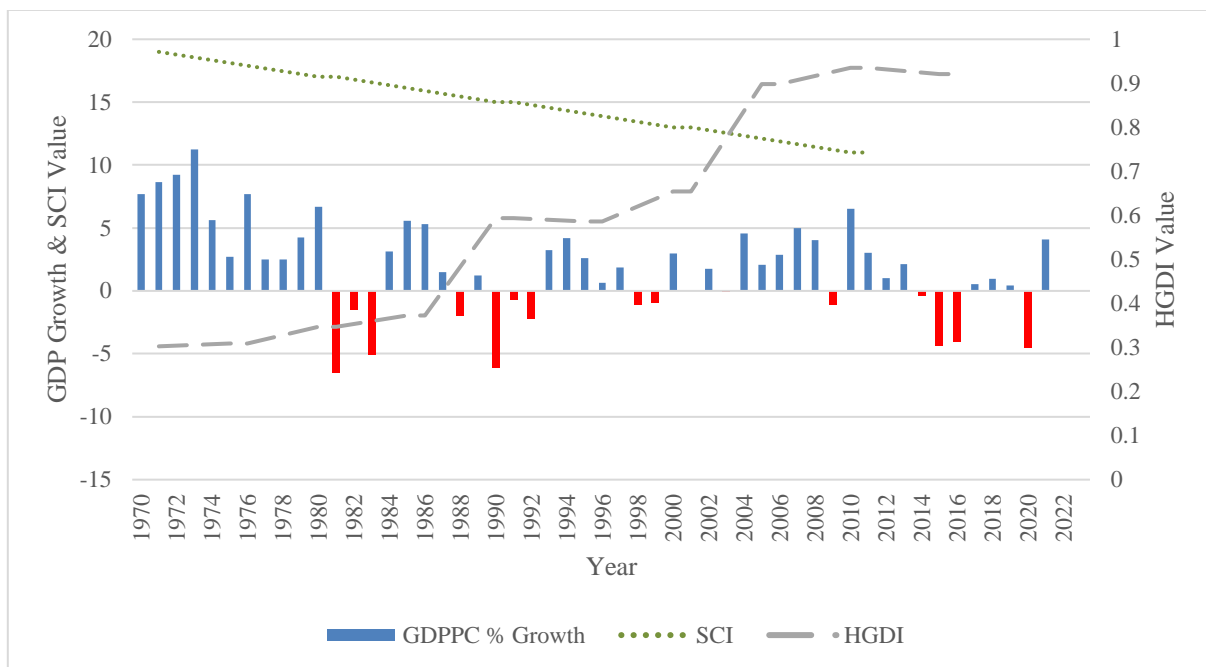
Sources: See Figure 6

In the 1970s, Brazil had both a poor SCI score and an unfavourable HGDI score, but both were slowly improving. Despite this, the decade was a period of strong, persistent economic growth. The 1980s saw increased economic volatility with 4 incidences of economic shrinking occurring in the decade. In the 1980s the SCI score continued to slowly improve whereas the HGDI score rapidly increased from 0.35 in 1980 to 0.59 by 1990. The early 1990s showed incidences of economic shrinkage, however, economic volatility largely decreased from 1993 with only small shrinkage episodes and modest growth occurring until 2014. Between 1990 and 2005 the HGDI score increased considerably from 0.59 to 0.9, with minor increases thereafter potentially due to 1 being the theoretical expected maximum for the HGDI scale. From 2014, economic volatility increased as economic growth became minimal and three periods of economic shrinkage occurred. By visually analysing this graph, we can see how Brazil's social capabilities are improving, but they have not reached the standards of Chile or Mexico. Conversely, it has experienced tremendous growth in gender equality in human development. Brazil has experienced periods of low economic volatility; however, the country is still not economically resilient.

My hypothesis was that improvements in gender gaps in human development and improvements in social capabilities should happen simultaneously, thus allowing for increases in economic resilience. Further, I hypothesised that the HGDI would be a better measure of

gender disparity in human development than the UN's GDI. From the results, it can be seen that Brazil has performed the best in the GDI and the HGDI, whereas it performed the worst under the SCI and economic resilience. Chile, however, placed worst in the GDI, second best in the HGDI, and best in the SCI and economic resilience. Mexico performed worst in the HGDI and took the middle position for GDI, SCI and economic resilience. Though it seems that my hypothesis of the HGDI and the SCI improving simultaneously has only been the case for Chile, my hypothesis of the HGDI being a better representation of gender gaps in human development has been supported by the differences in trends between the GDI and HGDI with the other two measures of economic resilience.

Table 6: Table of Results

Position	GDI	HGDI	SCI	Economic Resilience
#1	Brazil	Brazil	Chile	Chile
#2	Mexico	Chile	Mexico	Mexico
#3	Chile	Mexico	Brazil	Brazil

GDI source: UNDP (United Nations Development Programme), 2022

This section has elucidated the paths of social capability development, gender equality in human development, and economic resilience development. For correlations of my results, please see Appendix B. In the next section, theory and previous research will be applied to these results to gain a deeper insight into why Chile, Mexico and Brazil have followed these development paths, and where they are today.

6.2 Discussion

Understanding the linkages between established theories, previous research, and my results is essential for drawing valid conclusions from this study. In this section, I will begin by considering my results under the five pillars of social capability theory. Further, I will tie in gender impact to show the interlinkages between social capabilities and gender equality. I will then transition my discussion into considering the role of women in the economies of my three countries, and why the results from the HGDI may be a surprise, but that they elucidate why more than earnings matter for the economic opportunity of women in Latin America.

In the consulted literature, frequent and sizeable instances of economic shrinkage are linked to a lack of social capabilities (Broadberry & Wallis, 2017; Andersson, 2018). The results revealed that between 1970 and 2021, Chile experienced the lowest number of shrinkage episodes, followed by Mexico and then Brazil. Thus, the social capabilities of these countries must be assessed to understand why some have shrunk more than others. Another notable point is that despite Chile showing the highest economic resilience, it didn't score as highly as the others on the HGDI. This divergence from the theory will be explored in this section.

As previously mentioned, autonomy is the measure of a government's ability to keep vested interests at bay (Andersson, Julia & Palacio, 2021). In the SCI, this was measured using inflation. The work of North, Wallis and Weingast may be linked here as this is closely aligned with rule of law for elites (North, Wallis and Weingast, 2006). Further, the role of effective constraints on power holders emphasised by Acemoglu, Johnson and Robinson may also be linked to autonomy (Acemoglu, Johnson & Robinson, 2004).

The rule of law for elites has been considered weak in many Latin American countries (Gómez Ramírez, 2022). As this is measured through inflation, we can get a greater view of how autonomous each country's institutions have been over time through each economy's inflation rate. Since 1970, the most extreme levels of inflation have been experienced by Brazil, with a peak of 2,737% being reached in 1990 (World Bank, 2021b). Chile's inflation peaked in 1974 with 678.6% (World Bank, 2021b). Mexico's highest inflation point was 142.8% in 1987 (World Bank, 2021b). For each of these countries, their inflation peaks were reached in the decades where they experienced the greatest frequencies of economic shrinkage (World Bank, 2022). When the North American Free Trade Agreement was launched in 1994, one of the primary aims for Mexico was to reduce the country's inflation rate (Moreno-Brid, Santamaría & Rivas Valdivia, 2005). Despite the trade agreement not having the full desired effects, it has been successful in reducing the country's inflation (Moreno-Brid, Santamaría & Rivas Valdivia, 2005). In Brazil, the hyperinflation period was linked to the country's inability to handle its macroeconomy due to allowing infiltration from elites (Axelsson & Martins, 2023). However, the 1994 Plano Real marked the end of hyperinflation in the economy and since then, inflation has been kept at far lower levels Axelsson & Martins, 2023; World Bank, 2021b). In Chile, inflation declined rapidly after the 1974 peak. Despite fluctuations at far lower levels, it has not returned near its record high (World Bank, 2021b). A poorly managed macroeconomy is linked to social conflict, thus, measures to maintain stability are required (Rodrik, 1999).

Social Stability represents the government's ability to control and resolve conflicts (Andersson, 2018). This ties into the NIE emphasis on the containment of violence and conflict resolution being crucial roles of institutions (Acemoglu, Johnson & Robinson, 2004; North, Wallis and Weingast, 2006). Latin America has been considered to be a comparatively violent continent (Gómez Ramírez, 2022). According to the Fraser Institute's Economic Freedom Ranking, one of the most reliable economic freedom indices, social stability has only moderately improved in my three countries (Gwartney, Lawson, Hall, Murphy, Djankov & McMahon, 2022; Ram, 2014; Murphy, 2016). With 10 representing full economic freedom and 0 representing no economic freedom, Chile increased from 4.51 to 7.56 between 1970 and 2020 (Gwartney et. al., 2022). Mexico rose from 6.55 to 7.12, and Brazil increased from 5.01 to 6.33. Thus, as of 2020, Chile was the most free whilst also having developed the most freedom in that time period (Gwartney et. al., 2022).

The ability to sustain social stability and manage the macroeconomy means that a government can invest more in its citizens. Increased well-being in society due to a government appropriately dispersing public goods is measured under accountability (Andersson, Julia & Palacio, 2021). In the SCI, this is quantified using life expectancy (Andersson, Julia & Palacio, 2021). Throughout my period of interest, Chile has consistently had the highest life expectancy, growing from 62 in 1970 to 79 in 2021 (World Bank, 2021d). Mexico began with a life expectancy of 61 and held the second-best position until 2016 when it was overtaken by Brazil, resulting in a 2021 life expectancy of 70 for Mexico and 73 for Brazil (World Bank, 2021d). The same trends are followed for women specifically, however, the 2021 life expectancy values for Chile, Mexico and Brazil were 81, 76 and 75, respectively (World Bank, 2021d). This consistent increase in life expectancy suggests that each country is performing well under accountability, however, issues remain. Each of my countries have worrying levels of access to safely managed sanitation services (World Bank, 2020). Clean water access typically affects women more than men due to women being the primary water collectors worldwide and women also being more negatively impacted by a lack of safe sanitation facilities (Silva Rodríguez de San Miguel, 2018). Thus, the lack of clean water access in my chosen countries reveals gaps in gender equality in the accountability aspect of the social capability framework.

Access to safe sanitation services improves health, and a healthy, well-educated population increases human capital value thus allowing for a smoother transformation of the economic structure (Chen, 2004; de la Brière & Rawlings, 2006; Silva Rodríguez de San Miguel, 2018). This is due to the transformation being measured through economic

complexity, which is described as representing the amount of productive knowledge in an economy (Axelsson & Martins, 2023). When analysing Chile's exports, its reliance on natural resources becomes clear. Due to Chile's largest exports being in the sectors of agriculture, metals and minerals, it seems a transition into more complex sectors such as services has not been made and thus the country is less complex than expected for its income level (The Growth Lab at Harvard University, 2020). Brazil is sufficiently complex for its income level, however, it has also not expanded much into more complex industries which is evident through its export basket focusing on agriculture, minerals and metals (The Growth Lab at Harvard University, 2020). Mexico has a more diversified economy than expected for its income level (The Growth Lab at Harvard University, 2020). Its largest export categories are vehicles, machinery and electronics suggesting that Mexico has transitioned into more complex industries (The Growth Lab at Harvard University, 2020). However, a large section of Mexican exports is still reliant on *Maquiladoras*, factories which specialise in using tax-free imports to manufacture goods for the purpose of exportation (Moreno-Brid, Santamaría & Rivas Valdivia, 2005). The development of these factories required rapid skill development and created massive employment opportunities, however, highly-skilled jobs were primarily given to men, leaving women in lower-skilled positions (Domínguez et al., 2010; Campos-Vazquez, Domínguez Flores & Márquez, 2017). Further, the working conditions in *Maquiladoras* which hire more women, such as the textile industry, have been found to be quite poor with sexual harassment, no access to maternity leave and discrimination being common features (Domínguez et. al., 2010). Thus, it is evident how the transformation of the economic structure may be good for an economy, however, it may also have grave impacts on women's well-being. Therefore, it is important that market inclusion is considered during structural transformation (Andersson, Julia & Palacio, 2021). To measure market inclusion, the Gini Index is often used as it is believed that less income inequality in a society should reduce the likelihood of economic shrinking (Andersson, Palacio & von Borries, 2022). The Gini coefficient ranks Brazil as having the most income inequality, followed by Mexico and lastly Chile (World Bank, 2021a). For Brazil, this is unsurprising as land and wealth concentration has been a large issue, thus leading to the development of redistribution policies such as the *Bolsa Família* (de la Brière & Rawlings, 2006). In Mexico, the high inequality is largely linked to the existence of skill premiums (Campos-Vazquez, Domínguez Flores & Márquez, 2017). Despite the establishment of redistribution programmes such as *PROGRESA*, Mexico's Gini coefficient has remained largely unchanged suggesting that skill development in Mexico is a more valuable route for reducing inequality (Campos-Vazquez,

Domínguez Flores & Márquez, 2017; World Bank, 2021a). Chile's income inequality is largely attributed to the 1973 coup d'état which resulted in Pinochet becoming dictator (Sánchez-Ancochea, 2017:347). This inequality is largely due to vast amounts of privatisation occurring during the 1970s leading to significant capital concentration (Sánchez-Ancochea, 2017:347). Despite redistribution efforts such as through universal healthcare and pension schemes, fiscal loopholes prevent sufficient taxation of the elite thus preserving inequality (Sánchez-Ancochea, 2017:355-357).

As societies transition from agrarian to more advanced production, the question remains on whether this surplus labour, as Lewis referred to it, transfers into more advanced sectors (Lewis, 1954). However, a large risk is that this transition into more complex industries may in fact unintentionally force workers from the agricultural and lower-skilled sectors into less productive industries or even the informal sector (McMillan & Rodrik, 2011). The exclusion of women from highly-skilled roles can be seen in the aforementioned case of the *Maquiladoras* in Mexico. Key links have been developed between economic resilience and the informal sector, deeming this aspect of the economy vital to study (Bacchetta & Bustamante, 2009:102).

The informal sector in Chile, Mexico and Brazil, and in Latin America in general, is made up primarily of women (Horn, 2010). Some important aspects to note about this are that those in the informal sector earn less on average, are more vulnerable to economic shocks, and are not covered by social security (Horn, 2010; Portes & Schauffler, 1993). Table 6 below shows the rates of informal employment for females (F), males (M) and total (T).

Table 7: Non-Agriculture Informal Employment as a Percentage of Total Employment, 1990s-present

Year	Brazil F	Mexico F	Chile F	Brazil M	Mexico M	Chile M	Brazil T	Mexico T	Chile T
1990s	67	55	44	55	54	31	60	55	36
2000s	43.9	61.46	-	40.6	55.26	-	42.1	57.76	-
2010s	35.92	57.69	29.8	37.48	50.57	26.1	36.78	53.56	27.75
2020s	33.56	54.1	27.36	35.6	49.36	24.93	34.66	51.43	25.96

Source: 1990s: Coletto (2010 : 29); 2000s-2020s: ILO (2022)

From the above, we can see how in each country, except for Brazil in the last decade, of all men and women employed, a greater percentage of employed women are in the informal sector than men. To see how these informal labour force participation (LFP) rates interact

with earnings, we can refer to Table 7 below which reveals the earnings gap between the informal and formal sectors in Mexico, the country with the highest rate of employment in the informal sector.

Table 8: Earnings of Men and Women in the Informal and Formal Sectors, Mexico Q2 2022 ($MXN)

	Informal Sector			Formal Sector		
	Men	Women	Difference %	Men	Women	Difference %
Subordinate and paid workers	6,365	4,806	25%	10,821	9,648	11%
Employers	11,101	8,505	23%	15,220	13,908	9%
Self-employed workers	6,296	4,071	35%	12,243	8,929	27%
Average	7,921	5,794	27%	12,761	10,828	15%

Source: Ruiz Ortega and Pereznieto (2022)

The statistics above reveal how in Mexico, the gender pay gap is large in both the formal and informal sectors, however, the gap in the informal sector is very concerning. Further, the differences between same-gender earnings in each sector are large. Female subordinate and paid workers in the informal sector earn approximately 50% of what those in the formal sector earn. As employers, women in the informal sector earn 60% of their formal counterparts and worst of all, female self-employed workers earn 45% of their formal equivalents. For men, the largest gap is for self-employed workers with men in the informal sector earning 51% of what is earned on average in the formal sector.

Thus, despite Lewis's theory of surplus unskilled labour being able to transition into more advanced sectors such as industry and services, and some evidence of this occurring in Latin America throughout the twentieth century, there is also evidence that structural change since 1990 has pushed individuals into the informal sector instead of more advanced sectors (Bértola & Williamson, 2017:5; McMillan & Rodrik, 2011). The flow of labour from low-skilled to high-skilled sectors is a key element of development and sustained economic resilience as it allows for more diversified outputs (McMillan & Rodrik, 2011). However, McMillan and Rodrik have found that in countries with a high natural resource abundance,

the movement to more productive sectors has pushed low-skilled labourers into less productive and even informal roles (McMillan & Rodrik, 2011). This applies to this case due to all three of my selected countries being resource-rich (Papyrakis & Pellegrini, 2019). However, some economies may benefit due to increasing demand for unskilled labour. The Neoclassical view suggests that an increase in free trade in developing countries may lead to increases in demand for unskilled work and due to a considerable percentage of unskilled workers being female, this should thus work to decrease the GWG (Camou & Maubrigades, 2017:221). However, research has suggested that in the period from 1970 to 1990, despite the rapid growth of female labour force participation (FLFP), the GWG has not seen large reductions (Camou & Maubrigades, 2017:221). Further, the case of low-skill female employment in the Maquiladoras rejects this proposition. Despite my efforts, tracing data on GWGs back to 1970 in each country proved incredibly difficult, thus my earliest data points on the GWG in each country are from 1998 for Chile and the early 2000s for Mexico and Brazil. Table 8 below presents the FLFP rate and GWG for each country.

Table 9: FLFP and the GWG, 1970s-present

Year	Chile FLFP	Chile GWG	Mexico FLFP	Mexico GWG	Brazil FLFP	Brazil GWG
1970s	21.66	-	30.53	-	36.34	-
1980s	28.85	-	31.54	-	44.46	-
1990s	35.07	14.29	34.84	-	50.24	-
2000s	40.08	5.60	34.06	17.33	55.21	16.10
2010s	48.16	13.36	32.24	14.13	48.82	13.99

Source: World Bank (2021c); OECD (2023)

The results above show how for Chile, FLFP more than doubled from the 1970s to the 2010s. Brazil saw less growth with an increase from 36% to 49% whereas Mexico saw the least growth with a mere increase of 2 percentage points. Given that this FLFP data is originally sourced from censuses, it does not account for informality. Therefore, the fact that Mexico has the lowest FLFP and highest informality is unsurprising.

These results suggest that Mexico has the largest GWG and highest rate of female participation in the informal sector, so the scores of the HGDI may come as a surprise. Chile shows the most solid social capabilities, the strongest economic resilience, and the highest GDP per capita, however, it performs the worst on the HGDI. The reasoning for this comes down to economic opportunity not according to earnings, but to the legal equality in

economic opportunity. One major difference between Chile, Mexico and Brazil is their respective WBL scores for asset ownership. Mexico and Brazil each achieved scores of 100 which represents full asset ownership equality between men and women, whereas Chile only received a score of 60, representing a 40% gap between men's and women's asset ownership rights (World Bank, 2023). This is due to women not having the same ownership entitlements as men over immovable property and spouses not being granted equal ownership of assets in marriage (World Bank, 2023). However, this has been a large issue across Latin America. In 2003, it was reported that women represented, at best, 25% of landowners in most Latin American countries (Deere & Leon, 2003). This issue in lack of equal gender access to assets harms gender equality in development as it reduces women's ability to own productive resources and therefore limits their abilities to provide for their family (Deere & Leon, 2003). Further, in Latin America women tend to be more negatively impacted by economic shocks due to their lack of asset ownership and higher representation in the informal economy (Buvinic, 2009; Horn, 2010). In addition, many of these women in the informal sector rely on microfinance to develop their businesses, however, the availability of microfinance is largely restricted during times of economic crisis thus putting their livelihoods at risk (Walby, 2009). The impact of this can be further elucidated through Walby's statement of 85% of the poorest microfinance recipients being women (Walby, 2009:12). Reasons for this asset gap issue across the continent have been attributed to male preference in inheritance, male privilege in marriage, male bias in land distribution programmes and gender bias in the land market (Deere & Leon, 2003). Additionally, women and men do not have mandated equal remuneration in Chile, Mexico or Brazil, thus reducing their economic opportunities (World Bank, 2023). Further, unlike in Mexico and Brazil, Chilean women do not have the same ability to become the head of a household as a man (World Bank, 2023). Finally, in neither Chile nor Brazil are there laws prohibiting gender discrimination in access to credit (World Bank, 2023). Therefore, even if a woman earns a lot, she still must fight male preference in land distributions, the GWG, and potential discriminatory laws regarding her access to credit if she wishes to purchase a productive asset such as land to support her and her family. This is one of the many reasons why using income alone as a measure of economic opportunity, such as in the UN's GDI, is insufficient.

A category where Chile outperforms Mexico and Brazil is parenthood. Under this element, Chile, Mexico and Brazil scored 100, 60 and 80, respectively (World Bank, 2023). Mexico performed the worst as a minimum of 14 weeks of paid maternity leave is not available to mothers, whereas neither Mexico nor Brazil grants paid parental leave (World

Bank, 2023). Analysing this through the lens of *machismo* culture in Latin America reveals the concrete domestic gender roles still in place across the continent (Álvarez-Garavito & Acosta-González, 2021). This approach can be further extended to the workplace category, in which Chile scored 75 whereas the other two countries scored 100 due to Chile not providing criminal penalties or civil remedies for workplace sexual harassment (World Bank, 2023). Earlier in this paper, I discussed the issue and prevalence of sextortion in Latin America. This problem may therefore be linked to the lack of legal repercussions for sexual harassment, as low reports of such in the workplace may be linked to the fear of victim shaming and other negative fallout effects (Chêne & Rheinbay, 2016). Finally, the category in which all three countries underperform is pension (World Bank, 2023). Chile scored 75 due to women being able to retire at 60 with full benefits, whereas men can only do this at 65 (OECD, 2021:131). This is also the case in Brazil where women may retire at 62 with full benefits, whereas men can only do this at 65 (OECD, 2021:139). However, Brazil scored 50 as the mandatory retirement age is different for men and women with men being required to provide 35 years of service, whereas women are only required to provide 30 (OECD, 2021:38). At first glance, this seems like somewhat of a benefit to women. For example, they may be able to spend more time at home raising a family than men and still earn a pension with full benefits. However, this lower contribution requirement and earlier retirement age may incentivise women to retire before reaching higher positions in their careers and earning more to sustain them through retirement (World Bank, 2023). This is especially important for women as they have a longer average life expectancy and less working years on average due to time devoted to unpaid care work (World Bank, 2023). The HGDI index has managed to provide further insights into how women's economic opportunity has been inflated by the UN due to its negligent focus on earnings as the sole indicator of economic opportunity for women in Latin America. The WBL has been a valuable asset in determining what categories each country needs to work on, however, the region has been making improvements in gender equality.

Since 1970, large strides have been made. Compared to other developing nations, women in Latin America have experienced increasing levels of well-being in relation to educational attainment and health standards (Camou & Maubrigades, 2017:221). Higher health standards and thus life expectancy is an important aspect of social capability as it represents political institutions which are capable of dispersing public goods (Andersson, Julia & Palacio, 2021). Further, a healthy population is required for human capital development which thus supports economic development (Chen, 2004; de la Brière & Rawlings, 2006).

Tackling IPV is important for improving women's well-being in Latin America (Álvarez-Garavito & Acosta-González, 2021). *Machismo* culture is still widely found, however, developments in areas such as women's financial and general bargaining power have been recorded to have some positive effects on reducing domestic violence (Buller et al., 2018; de Brauw et al., 2014). These improvements may be achieved through increased LFP, equal pay, equal access to or increased asset ownership, or even through the receipt of CCTs in poorer families (Deere & Leon, 2003; Agénor & Canuto, 2015; Willman & Corman, 2013). Implementing policies which will improve future gender equality and human capital development is also an important element of reducing the gender gap (de la Brière & Rawlings, 2006). Despite CCTs being intended for tackling structural poverty and improving redistribution after the 1980s, they have been shown to have had strong indirect impacts on women's well-being (de la Brière & Rawlings, 2006). Further, they have been shown to improve future gender equality through increased female educational attainment and health standards (de la Brière & Rawlings, 2006).

In this paper, my research question was "How do gender gaps in human development and social capabilities interact to foster economic resilience to shrinkage?". My hypothesis was that improvements in gender gaps in human development and improvements in social capabilities should happen simultaneously, thus allowing for increases in economic resilience. Further, I hypothesised that the HGDI would be a better measure of gender disparity in human development than the UN's GDI. From the results and discussion, it can be seen that Chile may have the most economic resilience and social capabilities, but there is still room for improvement in gender equality, in particular in equal legal rights. However, in Chile, social capabilities and gender development have been improving simultaneously. Mexico performed the worst on the HGDI; however, it holds the second position for social capabilities and economic resilience. Better labour force inclusion of women may benefit its social capabilities, economic resilience and gender parity in human development. Lastly, Brazil scored the highest on the HGDI whereas it scored the lowest on the SCI and economic resilience. Improvements in economic freedom may help Brazil to strengthen its social capabilities and thus economic resilience. In the next section, I will discuss the limitations of this thesis and room for future research.

6.3   Limitations and Future Research

In this thesis, as with most research papers, there are considerable limitations. My first notable limitation is the lack of reliable and extensive data from the Latin American region. This has been a continuous issue for researchers attempting to examine the history of Latin America (Delgado-Bello, Sáchez & Ubeda, 2023). For example, GWG data was incredibly challenging to find. My work in tracing this involved consulting numerous datasets, working alongside my supervisor to try and find sources which extended back to 1970 even in 10-year intervals, searching for data in papers and the UN statistical yearbooks, and finally attempting to extrapolate back the existing GWG on the GDP per capita data that I had using LFP rates and some unfavourable assumptions such as equal pay between men and women. However, none of these options proved sufficient and so I had to use the little data I could find. Another large limitation was the availability and reliability of informal sector pay and employment rates. This is another variable which is difficult to calculate and even more difficult to trace back in time.

A large limitation in my thesis is the use of the WBL Index by the World Bank. This index is useful in that it provides a holistic insight into multiple legal factors affecting women which have an arguably larger impact on women's economic opportunity than earnings alone. However, this dataset has very flawed assumptions which must be addressed. The relevant assumptions are as follows: the woman is working in the formal economy, the woman resides in the country's primary business city, she is in good health and has no criminal record, she is a lawful citizen of the country being observed, she is a cashier in a grocery store with 60 employees, she is a cisgender heterosexual woman in a monogamous first marriage registered with the authorities, she is the same religion as her husband, she is registered under the default marital property regime, and she is not a voluntary member of a union (World Bank, 2023). Evidently, the assumptions of this index pose major concerns over its ability to represent women. This also poses problems when the country being examined is a federal state and therefore each state may have different laws (World Bank, 2023).

As research into social capabilities and their connection to economic resilience is quite a new research topic, there is a very limited number of reliable papers which I can refer to in my research. This has left areas of my paper quite limited in my theory and data triangulation, however, I believe it is imperative to use reliable sources.

Finally, the focus of this paper was to redevelop the UN's GDI due to its flawed and negligible use of income as the sole measure of women's economic opportunity. I took the construction and formulae for the GDI, gathered the data on each required variable, replaced earnings with a more holistic measure of economic opportunity, the WBL, and then extended this index back to 1970, instead of leaving it at 1990 which is where the GDI begins. This, therefore, contributed 20 additional years to this dataset. Visually comparing my HGDI to Andersson's SCI and GDP per capita growth was a contribution to research, however, econometrically comparing these variables would have provided a deeper insight into their relationships rather than simply comparing trends. Thus, econometrically comparing these three variables, or even applying this research method to other regions and countries, could be an interesting route for future research.

7 Conclusions

In this thesis, I conducted an analysis of how changes in gender gaps in human development relate to changes in social capabilities, and thus economic resilience. Despite pre-existing indices suggesting that income is a good estimate of economic opportunity disparity between genders, my findings have suggested that legal barriers to equal economic opportunity are a more important focus for reducing gender gaps in human development. From the research question: "How do gender gaps in human development and social capabilities interact to foster economic resilience to shrinkage?", I developed two hypotheses. My hypotheses were that improvements in gender gaps in human development and improvements in social capabilities should happen simultaneously, thus allowing for increases in economic resilience. I also hypothesised that the HGDI would be a better measure of gender disparity in human development than the UN's GDI. I found that the HGDI did not improve simultaneously with the SCI for all my countries, however, for Chile it did, suggesting that more research could produce similar results for other countries further clarifying the linkages between the HGDI and the SCI. Further, I found that the HGDI aligned better with improvements in the SCI than the GDI, thus supporting my second hypothesis that the HGDI is a better estimate of gender gaps in human development than the UN's GDI. By developing an improved and extended version of the GDI, I was able to elucidate how more than earnings matter for women's economic opportunity whilst also providing 20 additional years of data for future research. Finally, I provided what is potentially the first paper considering the role of gender in social capability development, thus hopefully opening the door for further research on this topic.

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Appendix A: Women, Business, and the Law 2023 results

Note to reader: The legal basis for each answer is available in the Women, Business and the Law 2023 Dataset.

Table 10: World Bank Women, Business and the Law Index Results, 2023

	Answer		
Question	Chile	Mexico	Brazil
Mobility	100	100	100
Can a woman choose where to live in the same way as a man?	Yes	Yes	Yes
Can a woman travel outside her home in the same way as a man?	Yes	Yes	Yes
Can a woman apply for a passport in the same way as a man?	Yes	Yes	Yes
Can a woman travel outside the country in the same way as a man?	Yes	Yes	Yes
Workplace	75	100	100
Can a woman get a job in the same way as a man?	Yes	Yes	Yes
Does the law prohibit discrimination in employment based on gender?	Yes	Yes	Yes
Is there legislation on sexual harassment in employment?	Yes	Yes	Yes
Are there criminal penalties or civil remedies for sexual harassment in employment?	No	Yes	Yes
Pay	75	75	75
Does the law mandate equal remuneration for work of equal value?	No	No	No
Can a woman work at night in the same way as a man?	Yes	Yes	Yes
Can a woman work in a job deemed dangerous in the same way as a man?	Yes	Yes	Yes
Can a woman work in an industrial job in the same way as a man?	Yes	Yes	Yes

Marriage	*80*	*100*	*100*
Is the law free of legal provisions that require a married woman to obey her husband?	Yes	Yes	Yes
Can a woman be head of household in the same way as a man?	No	Yes	Yes
Is there legislation specifically addressing domestic violence?	Yes	Yes	Yes
Can a woman obtain a judgment of divorce in the same way as a man?	Yes	Yes	Yes
Does a woman have the same rights to remarry as a man?	Yes	Yes	Yes
Parenthood	100	60	80
Is paid leave of at least 14 weeks available to mothers?	Yes	No	Yes
Does the government pay 100% of maternity leave benefits?	Yes	Yes	Yes
Is paid leave available to fathers?	Yes	Yes	Yes
Is there paid parental leave?	Yes	No	No
Is dismissal of pregnant workers prohibited?	Yes	Yes	Yes
Entrepreneurship	75	100	75
Does the law prohibit discrimination in access to credit based on gender?	No	Yes	No
Can a woman sign a contract in the same way as a man?	Yes	Yes	Yes
Can a woman register a business in the same way as a man?	Yes	Yes	Yes
Can a woman open a bank account in the same way as man?	Yes	Yes	Yes
Assets	60	100	100
Do men and women have equal ownership rights to immovable property?	No	Yes	Yes
Do sons and daughters have equal rights to inherit assets from their parents?	Yes	Yes	Yes
Do female and male surviving spouses have equal rights to inherit assets?	Yes	Yes	Yes
Does the law grant spouses equal administrative authority over assets during marriage?	No	Yes	Yes
Does the law provide for the valuation of nonmonetary contributions?	Yes	Yes	Yes
Pension	75	75	50
Is the age at which men and women can retire with full pension benefits the same?	No	Yes	No
Is the age at which men and women can retire with partial pension benefits the same?	Yes	Yes	Yes
Is the mandatory retirement age for men and women the same?	Yes	Yes	No
Are periods of absence due to childcare accounted for in pension	Yes	No	Yes
Total score	80	88.8	85

Source: World Bank, 2023

Appendix B: Correlation Tables

In order to provide some light additional empirical results with my findings, below I have included a regular and first differences correlation table between my variables for each country.

Table 11: Correlation Values

Country	HGDI & SCI	SCI & GDPPCG	HGDI & GDPPCG
Chile	-0.97	-0.30	0.47
Mexico	-0.61	0.25	-0.35
Brazil	-0.26	0.63	-0.21

In the above table, we can see regular correlation values between the HGDI and the SCI, the SCI and GDP per capita growth (GDPPCG), and HGDI and GDPPCG. As a lower value is better for the SCI, we hope for a negative value in the correlations with SCI. For HGDI and SCI in Chile, Mexico and Brazil, we can see that there is a negative correlation, suggesting that as the HGDI improves, so do social capabilities or vice versa. This is very strong for Chile, Strong for Mexico and weak for Brazil. The correlation between SCI and GDPPCG suggests that for Chile, as SCI improves GDPPCG also improves, but weakly. However, the opposite is observed for Mexico and Brazil where Mexico has a weak positive correlation and Brazil has a strong positive correlation. For HGDI and GDPPCG, only for Chile is an increase in one correlated with a medium strength increase in the other. The results for Mexico and Brazil suggest that an increase in the HGDI is weakly correlated with a decrease in GDPPCG, or vice versa.

Table 12: First Difference Correlation Values

Country	HGDI & SCI	SCI & GDPPCG	HGDI & GDPPCG
Chile	-0.59	0.05	0.53
Mexico	0.23	0.11	0.77
Brazil	-	-	-0.07

Note: No values for HGDI and SCI, and SCI and GDPPCG for Brazil as the change in SCI for each year was the same.

The results of the first differences correlation may be found above. For HGDI and SCI, Chile is the only country where an improvement in the HGDI is correlated with a strong improvement in the SCI. Mexico reveals no correlation between HGDI and SCI. For SCI and GDPPCG, neither Chile nor Mexico reveal a correlation between SCI and GDPPCG. For HGDI and GDPPCG, Chile and Mexico suggest an a strong and very strong correlation between HGDI and GDPPCG. Brazil reveals no correlation between HGDI and GDPPCG. Thus, Chile is the closest fit to my hypothesis of negative correlations between HGDI and SCI and SCI and GDPPCG, and positive correlations between HGDI and GDPPCG.

Appendix C: Social Capability Graphs

Transformation of the Economic Structure
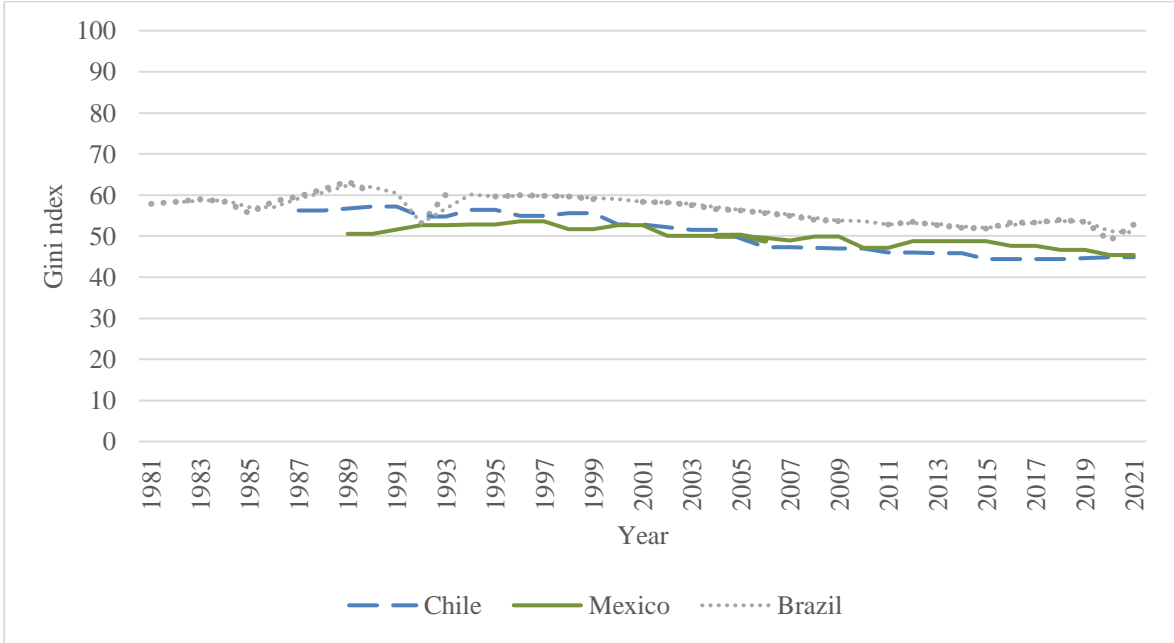Variable: Economic Complexity Score

Figure 9: Economic Complexity Scores
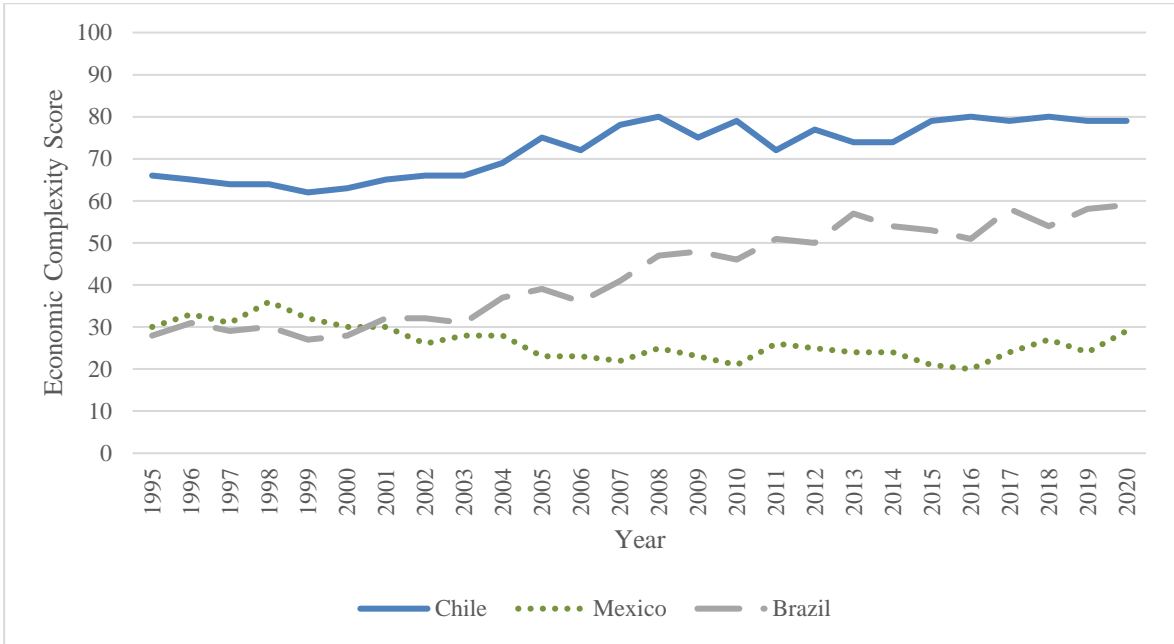
Source: The Growth Lab at Harvard University, 2020
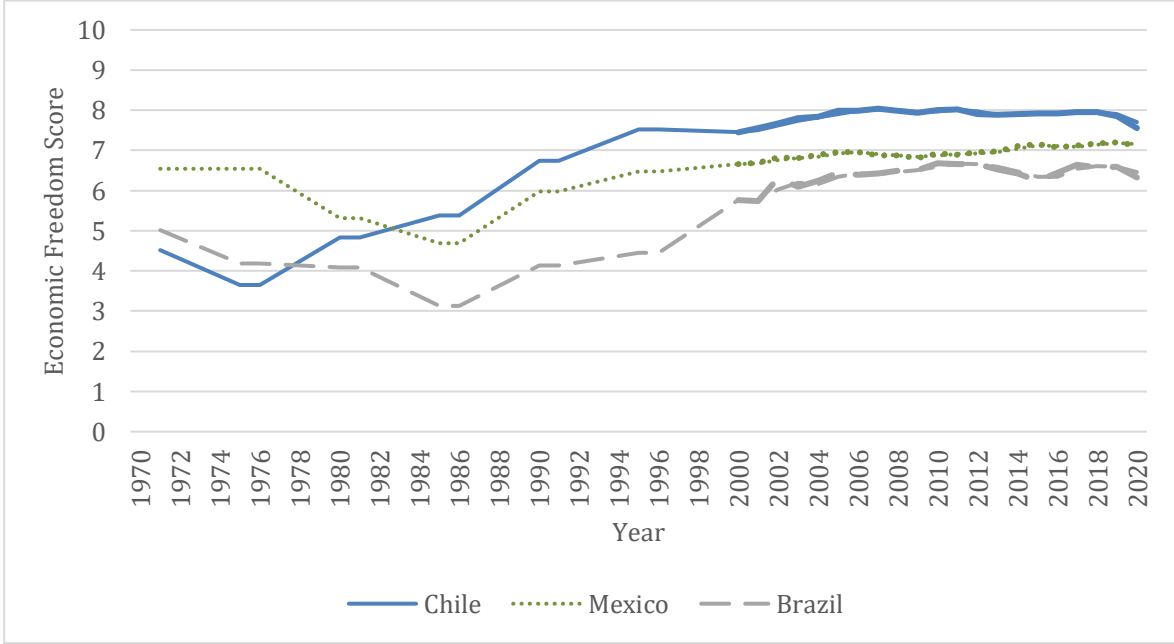
Market Inclusion
Variable: Gini Index

Figure 10: Gini Index

Source: World Bank, 2021a

Social Stability
Variable: Economic Freedom Score

Figure 11: Economic Freedom Score

Source: Gwartney, Lawson, Hall, Murphy, Djankov & McMahon, 2022

Autonomy

Variable: Inflation

Note: In Figure 12, Chile and Mexico are measured using the primary axis, whereas Brazil is measured using the secondary axis. Further, I have provided a second graph, Figure 13, which starts in 1996 to elucidate inflation in the post-hyperinflation era.

Figure 12: Inflation rate, 1970-2021
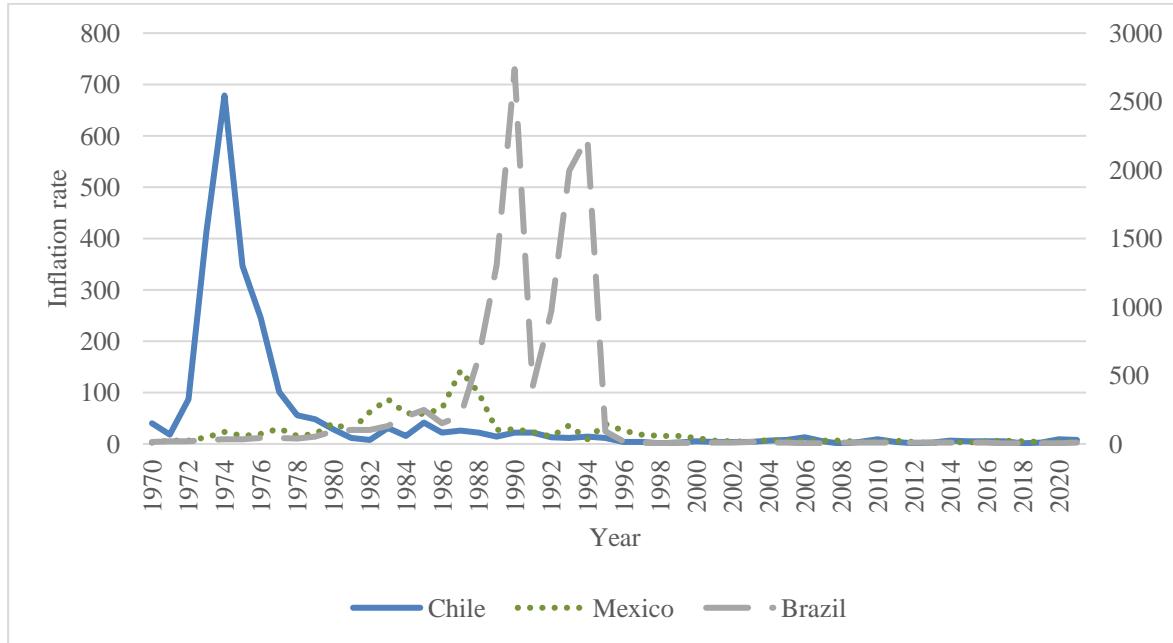
Source: World Bank, 2021b
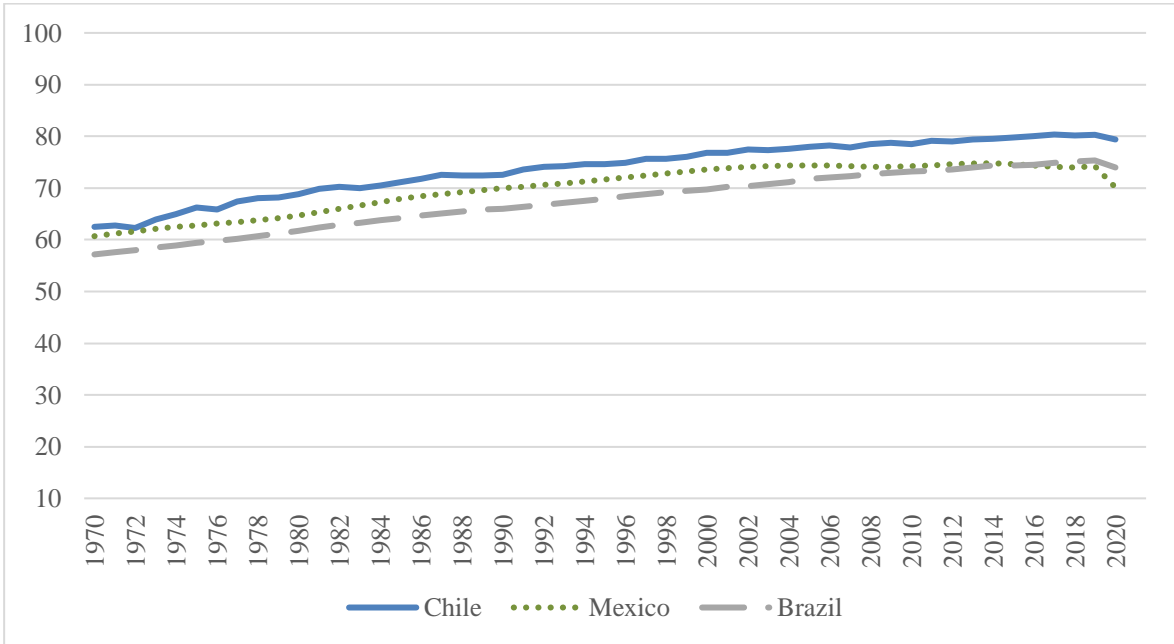
Figure 13: Inflation rate, 1996-2021

Source: World Bank, 2021b

62
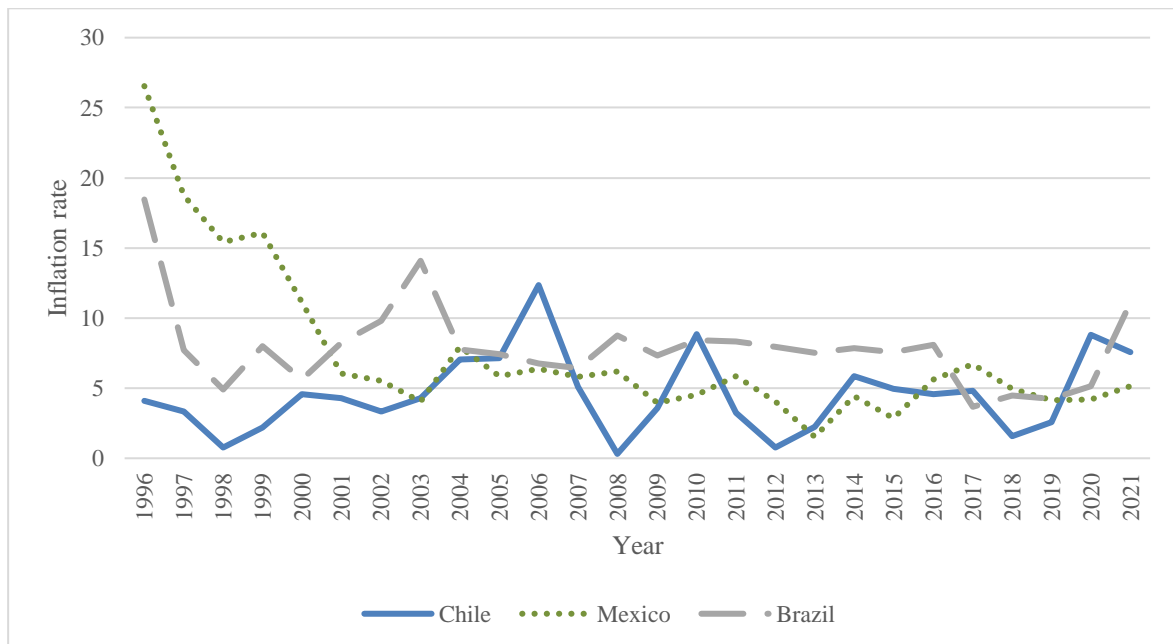
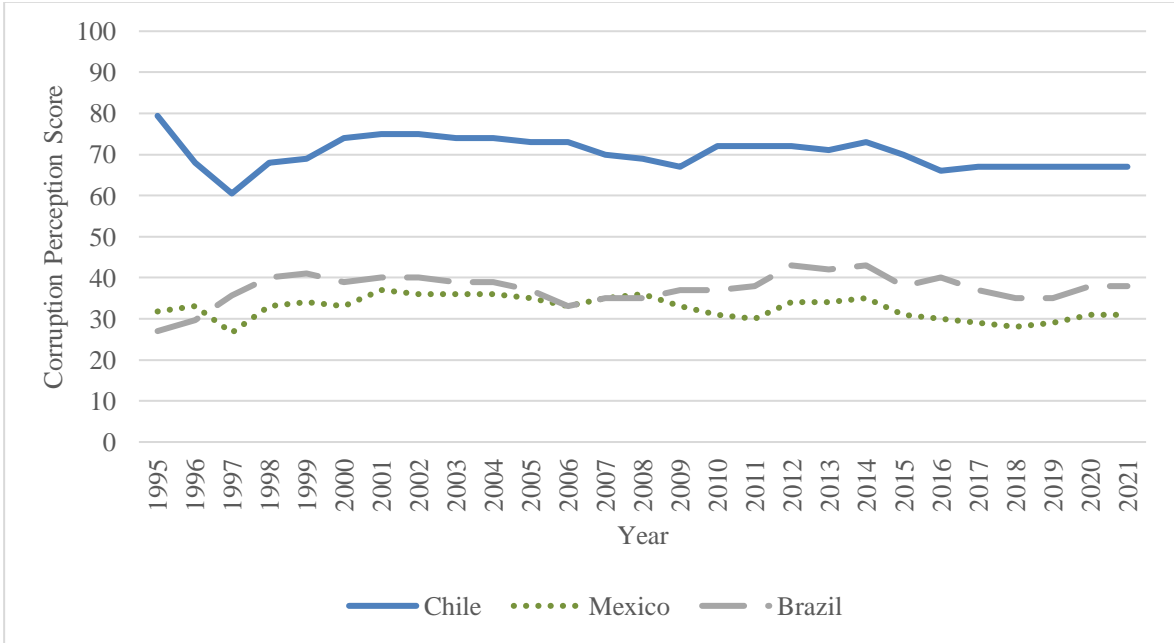**Accountability**
Variable: Life Expectancy

Figure 14: Life Expectancy

Source: World Bank, 2021d

Variable: Corruption Perception Index

Figure 15: Corruption Perception Index

Source: Transparency International, 2022

*A higher value represents lower corruption perception