

Acknowledgements

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Now it is time for me to embark on a new journey.

Abstract

The emergence of the term ‘individualism’ since the turn of the nineteenth century, and its wide-ranging impacts on the individual, as well as societal level, has led to it being extensively researched. In economics literature in particular, empirical research has mainly focused on the relationship between individualism and prosperity. In this domain, most arguments have focused on the assumption that individualism is closely related to more growth. Yet, little contributions have made a case for a reversed relationship.

This research presents evidence on socio-economic development and its effect on the cross-cultural factor of individualism at the country-level. Motivated by the influential theory of modernization, this study hypothesizes that socio-economic development leads to growing individualism, thereby assuming that collectivism is simultaneously eroded. High contexts of economic inequality and good institutional quality are hypothesized to play a positive moderating role. In order to run a panel data analysis, this study equated data replicative of Hofstede’s cultural framework for a subset of 63 overlapping countries from 1996 to 2018. WVS data was gathered to construct a new individualism-collectivism measure. This was done in an attempt to capture the essence of the concept as a one-dimensional societal construct, a notion that originates from Hofstede’s (1980) seminal work.

Taken as markers of socio-economic development, this study found a positive effect of productivity and life expectancy on individualism. However, and contrary to the hypothesis, a negative relationship was found between a countries’ urbanization rate and individualism. Moreover, this study concluded that contexts of high inequality in a society positively moderate the relationship of socio-economic development on individualism. However, no such relationship could be established when socio-economic development is supported by good governance. Both these moderating effects proved robust.

Keywords: socio-economic development, modernization, individualism, collectivism

Table of contents

Abstract.....	2
Chapter 1. Introduction	4
1.1 Background	4
1.2 Problem statement.....	5
1.3 Objective & research question.....	6
1.4 Relevance.....	7
1.5 Outline	8
Chapter 2. Theoretical Framework.....	9
2.1 Individualism	9
2.2 Individualism vs. Collectivism.....	10
2.3 Modernization theory and individualism	11
2.4 Socio-economic development	12
2.6 Socio-economic markers and individualism.....	13
2.7 The moderating role of economic inequality.....	14
2.8 The moderating role of institutional quality.....	16
2.9 Conceptual model.....	17
Chapter 3. Methodology	18
3.1 Methodological approach	18
3.2 Data collection	18
3.3 Operationalization choices.....	19
3.4 Variables	22
3.5 Descriptive Statistics	26
3.6 Model.....	27
3.7 Research ethics.....	29
Chapter 4. Results.....	30
4.1 Regression results.....	30
4.2 Robustness check.....	35
Chapter 5. Discussion.....	36
Chapter 6. Conclusion.....	39
6.1 Limitations.....	39
6.2 Implications and further research.....	42
Reference List.....	44
Appendices	56

Chapter 1. Introduction

The first chapter commences with a background related to the topic, followed by the problem statement, objective, research question, and relevance. The last section outlines the rest of the study.

1.1 Background

The term ‘*individualism*’ dates to the nineteenth century, when a decline in social relationships within communities brought about the first forms of individualism (Akhtar Khan, 198; Miller et al., 2016). Following in time, the term has been given many different inflections, as both theory and practice have produced numerous ways to understand the concept (Fatehi et al., 2020). In the traditional view of individualism, however, society is seen as a collection of individuals who are each in their own way as a self-sufficient entity (Akhtar Khan, 1987). Today, the literature mainly relies on the semantical core of individualism to define the concept – of a distinct and single entity distinguished from a group or class (Realo et al., 2002). The last two centuries have seen countless studies that have sought to explain the different extent of individualism observed across countries today (e.g., Hofstede et al., 2011; Santos et al., 2017; Hamamura, 2012).

A contrasting worldview to individualism is ‘*collectivism*’. Most people in this world live in societies in which group interests prevail over individual interests; these societies are labeled collectivistic. Hofstede states that “*collectivism is the rule in our world, and individualism rather the exception*” (Hofstede et al., 2011, p. 100). In line with this statement, Gully et al. (2003) argued that no less than 70 percent of the population is socialized in collectivistic cultures, and Kagitcibasi (1997) argued similarly – albeit reversed – that individualism constitutes around 30 percent of humanity. According to Hofstede’s National Culture Survey (2015), countries that contribute to these statistics include (but are not limited to) most countries in Southern Europe, the Middle East, Latin-American, Africa, and Asia.

Even though most societies are considered collectivistic, it has appeared that individualism has increased over the past decades (Ogihara, 2017), with “*dramatic shifts towards greater individualism around the world*” (Santos et al., 2017, p. 1288). Santos and his colleagues argue that this phenomenon of increasing individualism may be observed globally and provide a rough estimate of a 12 percent increase worldwide since 1960. Additional prior

studies that have tried to explore changes in Individualism-Collectivism (IC) across societies (e.g., Grossmann & Varnum, 2015; Yu et al., 2016; Ogihara, 2017) seem to validate this. Along this line of reasoning, individualism is believed to be more widespread than purported by Hofstede's initial premise.

1.2 Problem statement

Individualism has a significant influence on cultures (Hofstede, 2001; Kemmelmeier, 2003; Toikko & Rantanen, 2020; Amini et al., 2021; Taylor & Wilson, 2012). One of the most prominent being that it is widely assumed that there is more social and economic prosperity in individualistic societies than in collectivistic ones. It is argued that higher long-run growth rates can be observed in individualistic countries, as individualism leads to economic growth and increased rates of innovation (Gorodnichenko & Roland, 2011). This has led to a robust linkage between individualism and economic development, which is widely accepted in the literature (Hansen, 2013; Klasing, 2013; Ogihara, 2018). However, Hofstede (2001) found evidence to suggest that this broadly accepted causal relationship between individualism and prosperity may run the other way: countries became more individualistic as they became more prosperous, and not more prosperous because of increased individualism (Ogihara, 2017; Hofstede et al., 2011). In the same vein, a Finnish case study by Ervasti (2001) found that more individualistic stances became apparent as general welfare increased. To this day, a lot of controversy surrounds the topic.

While the view holds that individualistic countries are more prosperous than collectivistic countries – with individualism underpinning this increased prosperity – exceptions have been observed across the world. In parts of Western Europe, individualistic values existed centuries ago, even when most inhabitants of these countries were poor, and the local economies were predominantly agrarian. Even in modern times, India stands as an example of a country that is considered individualistic despite high levels of poverty (Hofstede et al., 2011). More specifically, East Asian countries directly impugn the assumption, where countries, despite phases of economic development due to industrialization, have largely retained collectivistic values (Hofstede et al., 2011; Reyes, 2001). China, South Korea, and Japan are examples of this exception. What is remarkable here is that these countries even showed less individualistic values and practices over time (Yang, 1996; Greenfield, 2009). The authors' explanation is that the majority of countries that showed the lowest on

individualism were the countries that scored the lowest on socio-economic development. This explanation is consistent with the finding that socio-economic development is the driving force behind the rise of individualism (Santos et al., 2017; Inglehart & Welzel, 2005). This finding was further substantiated by Schimmack et al. (2005), and Pitlik & Rode (2017), who found that individualism is directly correlated with national development indicators. At the same time, however, researchers have only recently paid more attention to the impact of social development on individualism (Ogihara, 2017). Moreover, prior research on a possible shift to more individualism has mainly focused on a few highly developed countries (Ogihara, 2017; Ervasti, 2001; Hamamura, 2012).

As aforementioned, a substantial number of studies have researched the effect of the orientation of society toward economic development. This idea – *Cultural Determinism* – accepts that certain cultural values encourage economic development (Allen et al., 2007; Gorodnichenko & Roland, 2011; Kyriacou, 2015). However, few contributions have reversed this pre-assumed relationship. Examples of such contribution include a study by Ball (2001), who recognized a two-way causality, and Hamamura (2012), who built on the modernization theory regarding the interaction between economic and cultural factors.

1.3 Objective & research question

Although national cultural differences are deeply rooted, this study endeavors to investigate whether socio-economic development has an effect on individualism. In doing so, this research seeks to answer whether findings between countries correspond with the previous findings of many academics (Toikko & Rantanen, 2020; Santos et al., 2017; & Cai et al., 2020) that socio-economic development is the driving force behind increased individualism over time. In doing so, this work will draw on the influential theory of modernization. Modernization theory casts development as a uniform evolutionary route and emphasizes sources of socio-economic development (Ynalvez & Shrum, 2015).

To meet the objective of this thesis, the following research question is formulated:

‘What is the impact of socio-economic development on individualism?’

1.4 Relevance

The rich literature that has developed around the relationship between individualism and socio-economic development has been subject to contradictory findings. This could imply that the determinants of individualism are both multifaceted and interconnected (Vignoles et al., 2016; Briley & Wyer, 2001). As most literature has focused on how individualism influences economic development, it suggests that research is required to capture the reverse relationship. The aim of this study is to narrow this gap, with an extended scope beyond the ‘Western world’, to include emerging and developing countries, for which such research is especially lacking. Although previous research in this domain has been conducted, these studies were predominantly focused on what would be considered ‘Western’ developed nations. Notwithstanding, previously studied countries in the ‘Eastern’ world include China, South Korea, and Japan (Santos et al., 2017; Kwon, 2006; Hamamura, 2012). However, the need to also include other Asian countries is of growing importance as the region has seen socio-economic successes that have stretched to other countries. Examples are Thailand, Indonesia, the Philippines, Malaysia, and Vietnam, and Singapore.

The intended outcomes are twofold: methodological and macro-sociological. Therefore, this work aims to deliver both scientific and societal relevance. Scientific relevance will be established by extending the notion of Cultural Determinism by accommodating the reverse. Moreover, by considering social measures, there is a hope that more of the dependent variable can be explained. Further scientific relevance is guaranteed by addressing how several markers might affect this relationship. To satisfy (macro-)social relevance, this study explores insights into the possible alteration of cultural values. Taylor & Wilson (2012) argue that a society’s identity, which is accompanied by individualism, has profound influences on society's functioning. For this reason, a clearer understanding of the causal variables of individualism should be a point of interest for researchers and policymakers. To date, scholars have mainly focused on the agreement that socio-economic development is an important tool to alleviate poverty and foster human development (Zengrui et al., 2017). However, a confirmed impact of socio-economic development on individualism sheds light on the wider implications of modernization. For policymakers, a confirmed impact could lead to a more careful assessment of socio-economic policies, as the broader implications for society become clear. Already, population behavior associated with individualism has been found to impact social care (Al-Janabi et al., 2018), education (Lareau & Shumar, 1996), and

technological acceptance (Abbasi et al., 2015). More generally, a positive effect of socio-economic development on individualism could help policymakers devise strategies that consider the cultural values of the local population of these countries. Subsequently, policymakers will better understand how their policies will be perceived and subsequently adhered to. A current and relevant example relates to how individualistic countries have been associated with more COVID-19 cases and subsequent mortalities: individualistic participants were less likely to adhere to prevention measures concerning the pandemic (Maaravi et al., 2021; Bian et al., 2022).

1.5 Outline

This thesis continues as follows: the second chapter contains the theoretical framework. This chapter further elaborates on the existing literature, thereby hypothesizing several effects, which will be shown in a conceptual model. The third chapter consists of the methodology. The fourth chapter provides an overview of the results, after which a discussion is included in chapter five. The final chapter presents the conclusions and implications, as well as directions for further research.

Chapter 2. Theoretical Framework

The theoretical framework provides an overview of the main concepts. First, the terms individualism and collectivism are discussed, and their relationship to modernization theory. Then, this chapter focuses on defining different concepts. In addition, several markets are discussed, which are suggested to influence the role of socio-economic development on individualism. Based on the theoretical overview, several hypotheses are drawn that link the main concepts and relationships within this study.

2.1 Individualism

The origin of individualism is extensively researched in academic literature (Hamamura, 2012). The most accepted explanation for the origin of individualism is the historical role of farming practices (Emery, 2015; Ang, 2019). However, the literature has provided evidence for many antecedents that are associated with individualism. These range from measures of innovation and immigration patterns to social movements (Erez & Earley, 1993; Gorodnichenko & Roland, 2011; Varnum et al., 2010; Allik & McCrae, 2004). Additional explanations of individualistic traits include variables such as geographical scope, climate, and even genetics (Hofstede et al., 2011; Kashima & Kashima, 1998; Talhelm et al., 2014; Baldwin & Lieberman, 2010). This work draws from the economic argument, as offered from the list in table 1.

Argument	Rationale	Examples in the literature
Historical	Agricultural legacies have shaped the formation of individualist traits among countries due to farmers' independent efforts of crops cultivation.	Ang, 2019; Emery, 2015 Talhelm et al., 2014
Economic	Individualism is a result of economic development/wealth/welfare/innovation/prosperity (e.g., population growth correlates with collectivism).	Ogihara, 2018; Santos et al., 2017; Gorodnichenko & Roland, 2001; Ervasti, 2001
Geographic/ Climatic	Climatic stress as a result of a deviation from the optimal level (22 Celsius) leads to greater individualism.	Van de Vliert, 2013; Kashima & Kashima, 2003.
Linguistic	Languages prohibiting fewer pronoun drops are found to be more individualistic.	Kashima & Kashima, 1998; Semin & Rubini; 1990
Genetic	Relative frequency of variants in the genes (serotonin) correlates with the relative degree of individualism.	Baldwin & Lieberman, 2010

Table 1: Most prominent antecedents of individualism as discussed in the literature

2.2 Individualism vs. Collectivism

The markers of individualism and collectivism have had a profound influence on social science research over the last century (Gelfand et al., 2004). However, in 1980, the constructs gained particular popularity due to the seminal work of Hofstede (1980). Subsequently, scientists can be observed broadly studying the constructs until this day. In his initial work, Hofstede proposed four dimensions categorized as power distance, masculinity-femininity, uncertainty avoidance, and individualism-collectivism. Among these, the Individualism-Collectivism (hereafter IC) dimension has received the most attention (Fatehi et al., 2020). On a national level, Hofstede defined individualism as “*the antithesis of collectivism, societies where the interests of the group take precedence over the interests of the individual*” (Hofstede, 2011, p. 101). Scholars widely adopt this definition (Varnum et al., 2010; Triandis, 1995), although closely related definitions exist that describe the concept as loose mutual ties between individuals. Although the above definition seems straightforward, the literature surrounding individualism shows multiple variations, thereby making the measurement of the concept difficult (Fatehi et al., 2020). This is exemplified by the fact that it is argued that there are no standard scales for measuring IC, and that different scales have led to different results (Oyserman et al., 2002).

Nonetheless, scholars have made attempts, and have conceptualized individualism and collectivism as two factors that are relatively independent at both the individual and societal levels (Triandis et al., 1986; Realo et al., 2002). However, this is contrary to what Hofstede originally envisioned, namely as one unidimensional factor with two opposite poles. Hofstede (1980) used surveys of IBM employees with equivalent jobs across countries to measure cultural differences. His created component, Individualism, positively loaded on individual freedom, competition, achievement, advancement, and recognition, and negatively on harmony, cooperation, and relations with superiors. Other empirical work found similar results to Hofstede, such as Ho & Chiu (1994), who argued that the most prominent components of individualism are self-reliance, responsibility, and achievement. In addition, several scholars (e.g., Triandis, 1986; Markus & Kitayama, 1991) have developed the idea of categorizing the social orientation of culture in the categories of independence vs. interdependence. These scholars found that societies that endorse independent social orientation tend to focus on self-expression and autonomy, while interdependent social orientation tends societies to emphasize connection, harmony, and relatedness. Although the

literature has discovered several attributes of individualism, it is still unknown whether these attributes are necessary components or simply related concepts (Realo et al., 2002).

The IC dimension reflects “*the concept of selves*” because people tend to treat their ingroup and outgroup differently at both ends of the cultural spectrum (Gelfand et al., 2004).

Because of this conflicting tendency, people tend to act differently in different societies by drawing on their attitudes or conforming to social norms. This cultural difference focuses on an issue that is fundamental to any society: the role of the individual versus the role of a group (Hofstede et al., 2011). Children who grow up in collectivistic societies are taught to think of themselves as part of an ingroup, a relationship that is not chosen, but rather is a natural fact. This ingroup to a large extent determines a person's identity and is often the only source of safety and protection in times of adversity. This then develops in both material and psychological dependency relationships between the individual and the group. On the other hand, children who grow up in societies labeled individualistic quickly grasp the idea to think of themselves as ‘me’. This I - their identity - is distinguished from the I of other people, all of whom are not classified according to which group they belong to, but to personal characteristics instead. A person in this type of society neither has material, nor psychological dependence on a group (Hofstede et al., 2011; Grossmann & Na, 2014).

2.3 Modernization theory and individualism

The tradition of modernity research has laid the groundwork for contemporary individualism-collectivism research (Yang, 1988; Kagitcibasi, 2005). To understand what modernization is, and how it is predicted to have fostered individualism, a closer look at its origin is necessary. The foundation of modernization is grounded in the works of German sociologist Max Weber, whose influential ideas described and explained the process of transformation from traditional agricultural societies to modern societies. More specifically, modernization theory stems from a prominent theory about understanding issues of economic and social development in the 1950s and 1960s (Gwynne, 2009). At its core, modernization theory argues that economic development causes prevalent structural and cultural changes. Today, modernization theory also focuses on the social elements that help progress the development of societies. Examples of such changes by modernization are family structure, education, and urbanization (Inkeles, 1975). Modernization theory has informed analysis of regional development that originated in Europe, but later spread across other parts of the world.

However, the modernization theory was broadly critiqued during the last part of the previous century. Criticism for ‘modernization’ was expressed for only considering the Western world, and assuming that the rest of the world (that is non-Western societies) would later follow a similar development path (Dunford, 2009). In this context, the modernization theory was partly disproved when Western ‘role models’ were unexpectedly surpassed by non-Western societies in key aspects of modernization. What’s more, a key source of the problem of modernization theory is that it is associated with determinism and relates to specific development patterns (Goorha, 2017). As previously mentioned, modernization theory states that socio-economic growth causes individualism. Despite this, there have been instances where it has been suggested to reflect the cultural patterns that are the root cause of economic development. Hence, it can be stated that researchers who accept that socio-economic progress and cultural values are intertwined disagree on the causal relationship (Allen et al., 2007).

Despite these critics, the work of Wehler in 1995 (in Lorenz, 2006), lists several arguments for the application of modernization theories. The main argument here is that no better alternative has been discovered to the theory of modernization, and that modernization represents the most superior conceptual instrument for understanding the “*dynamic of the singular evolutionary process*” (p. 173). The basic concept of modernization still seems valid today: that socio-economic development is the central element and affects most other elements of society. The majority of evidence on modernization supports the theory, although studies have found findings inconsistent with the pattern of increased individualism due to socio-economic development. Examples include a study by Twenge et al. (2004) on cross-temporal patterns in the United States, as well as studies on East Asian societies with the conclusion traditional collectivism persisted (e.g., Yang, 1996).

2.4 Socio-economic development

In line with modernization theory, the role of socio-economic factors in explaining cultural differences is widely acknowledged (e.g., Hofstede, 1980; Triandis, 1995). According to Santos et al. (2017), socio-economic growth is an especially strong predictor of increasing individualistic practices and values. However, because socio-economic development is an all-encompassing study (it analyses the causes and consequences of social change, individual perceptions, beliefs, cultural patterns, economic organizations, etc.), there is considerable

disagreement over the meaning of socio-economic development (Szirmai, 2015). For most people, the term ‘development’ signifies a process of economic change resulting from industrialization. ‘Development’ refers to a process of social change, adopting a modern lifestyle, with new attitudes (Inglehart & Baker, 2000).

The reason for the growing attention to socio-economic development initially stems from the shift to modernization. This shift to industrialized societies was accompanied by deep changes in people’s worldviews (Bell, 1973; Spier, 1996). While industrialization was primarily linked to economic growth (in the sense that increasing GDP (Gross Domestic Product) was considered the highest priority of every country in the world), societies started placing more emphasis on self-expression and the quality of life (Inglehart & Welzel, 2005; Ayres, 2008). Moreover, economic growth based on GDP proved to be an insufficient way to capture development. Some societies that have been experiencing rapid rates of economic growth have seen a decline in the standard of living (Jaffee, 1998). Yet, GDP is still often used as the all-encompassing unit by economists and policymakers to signify a nation’s development. However, more recent research has moved towards different ways to capture development (e.g., Tokudome et al., 2016; Crow & Sultana, 2016). One such way is to include the harmonization of social policies, combined with measures designed to foster economic development. The emphasis on macro-oriented development is what sets social development apart from other approaches to promote social growth (Midgley, 1995). Although socio-economic development still considers economic development objectives, it stresses a broader commitment to developing economically by considering social interventions (Szirmai, 2015). Whereas social development is “*the well-being of the entire society*” (social welfare), and is concerned with the quality of life, economic development can be described as “*the overall level of financial satisfaction and prosperity experienced by participants in an economic system*” (Midgley, 1995).

2.6 Socio-economic markers and individualism

As aforementioned, the link between modernization and individualism is well-established empirically in studies across multiple cultures (Hamamura, 2012). A correlation between individualism according to Hofstede’s definition and economic development was found to be high. By the same token, Inglehart & Baker (2000) found a correlation between economic development and greater emphasis on individualistic ways of living. According to their study,

societies no longer have to rely on a group for survival when they are economically developed; it enables societies to pay attention to personal freedom and goals. A related argument focuses on the rise of urbanization, suggesting that urban environments promote individualism (Greenfield, 2009). According to Moore (2005), urbanization leads to changing viewpoints and attitudes, with individualism as a central feature in opposition to the collectivistic spirit. In the coming decades, urban shares are forecasted to increase. Today, around 4 billion people live in urban areas. This number is expected to continue to increase with rising incomes to over 7 billion in 2050 and will by that point account for around 68% of the world's population (Ritchie & Roser, 2018). In comparison, less than 10% of people globally lived in urban areas in the year 1800.

In a broader context, the simple phenomenon is that socio-economic development would lead to more 'success' and financial stability, thus leading to a situation where everyone can afford to meet their needs. Socio-economic development would lead to self-substantial development, where instead of sharing things, it would be preferred to take care of oneself in the form of freedom to do one's own thing and maximize pleasure (Triandis, 1986; Ball, 2001). This would decrease tolerance for other humans. Ball (2016) found that as the wealth of a society grows, the more opportunistic behavior the society will display, making it more tempting for people to defect from the norm of cooperating. This leads to a situation where common interests and cohesiveness within a group (collectivism) are replaced by individualism, where everyone is self-reliant and independent. In line with this statement, it would suggest countries are moving towards more individualism due to their rapid socio-economic development, resulting in the first hypothesis:

H1: Socio-economic development erodes collectivism and promotes individualism.

2.7 The moderating role of economic inequality

There is a robust body of research concerning the effect of economic inequality on societal effects. Economic inequality, which is defined as the unequal distribution of assets (Alkire et al., 2015), is considered a mere byproduct of socio-economic development by Kuznets' (1955) seminal work. Socio-economic development markers, such as GDP growth (Causa et al., 2014) and rapid urban transition (Sadeghi & Zanjari, 2017), have been associated with growing inequality. Today, a vast body of literature exists on how a society's structure affects several outcomes for that society (Pickett & Wilkinson, 2015). Individualism is one of those

outcomes (Sánchez-Rodríguez et al., 2019). In particular, a strong association between economic inequality and individualism is robust. Economic inequality has been found to lead to diminishing trust among individuals (e.g., Kawachi & Kennedy, 1997; Graafland & Lous, 2019). Moreover, higher degrees of economic inequality have been associated with less pleasant (de Vries et al., 2011), and uncooperative people (Paskov & Dewilde, 2012), resulting in a situation where people are more socially distant (Pickett & Wilkinson, 2015). By the same token, Loughnan et al. (2011) found that people tend to view themselves as superior to peers in societies with more income inequality. This is similar to what Triandis (2018) found, namely that income inequality leads to a situation where self-interest becomes more important, regardless of its implications for the collective. A broad array of studies that have been undertaken can be considered to support this hypothesis (e.g., Fiske et al., 2012; Côté et al., 2015). Although the relationship between economic inequality and the above-mentioned societal effects is well-established, the nature of this relationship is far less understood in terms of the IC dimension (Sánchez-Rodríguez et al., 2019). Attempts have been made by the likes of Ahuja et al. (2014), who found that high-economic-inequality contexts are linked to more individualism compared to low-economic-inequality contexts. Moreover, Caruso & Schneider (2011) focused on the role of marginalization, stating that economic inequality in a society leads to more aggressive opportunistic behavior toward the rest of society. As mentioned, Ball (2016) found evidence for defecting from the norm of cooperation due to opportunistic behavior. Binder (2019) holds a similar view, in arguing that people who experience inequality are more likely to work excessively and have less consideration for other people, thereby working their way to individualism. Furthermore, in their natural experiment, Sánchez-Rodríguez et al. (2019) showed that conditions of high inequality led participants to project more individualistic norms onto society than those in low-inequality conditions. Considering these reasonings, it can be argued that more economically unequal societies' contexts positively moderate the relationship between socio-economic development and individualism, leading to a situation where cohesiveness (collectivism) within a group would be replaced by individualism. Therefore, in accordance with the reasonings, these cases indicate a possible moderator role of economic inequality, resulting in the second hypothesis.

H2: The degree to which socio-economic development erodes collectivism and promotes individualism is positively moderated by economic inequality.

2.8 The moderating role of institutional quality

Besides the hypothesized moderator effect of economic inequality on the relationship between socio-economic development and individualism, a similar effect is assumed for the role of governance. The connection between governance and the IC dimension is well-established by numerous empirical works (e.g., Tanzi, 1994; Fukuyama, 2011). Ball (2001) argued that the state of a society's political institutions has a profound effect on the interaction between socio-economic and cultural factors. Similarly, Ball (2001), based on Kranton's (1996) analysis of reciprocal exchange, found that effective governments shape the creation of cultural values. More specifically, Kyriacou (2016) found that individualism has an effect on development when good governance supports it. In his reasoning, the relationship between individualism and socio-economic development is positive, implying that individualism causes countries to be wealthier. However, as we have seen, the direction of this causality can also run the other way (Hofstede et al., 2011; Ogihara, 2017). Moreover, and in line with arguments on the substitutive effects of informal institutions when institutional quality is low (e.g., Baig, 2016; Guiso et al., 2004), this thesis posits that socio-economic development has a stronger effect on individualism when good governance supports it (institutional quality). This is because people do not need to rely on informal institutions, such as trust and networks, where there is good governance, thereby encouraging further distancing from reliance on others. In this vein, more research has focused on the way institutional quality is associated with individualism (Hamamura, 2012; Gorodnichenko & Roland, 2011; Tabellini, 2010). Burge (1979) found that there is a preoccupation with the role of government institutions in shaping the individual and the content of his/her thought. Schimmack et al. (2015) argue that when people are given the freedom to decide for themselves and participate in the political process, it creates trust in authorities. Trust in authorities makes people more innovative, creating a competitive landscape. As we have seen, both innovations (Gorodnichenko & Roland, 2011) and competitiveness (Loughnan et al., 2011; Nishi et al., 2015) have been associated with individualism. Moreover, because individualism promotes values such as freedom and equality (Sakalaki et al., 2007), it is argued that less government intervention has beneficial effects on the political situation that might be more stable, and that political stability and effectiveness are the keys to more individualistic societies (Rajas, 2021). Other works (e.g., Ezcurra, 2021; Gatenbein et al., 2019) support this view. More specifically, political instability harms socio-economic

development and causes policymakers to conduct damage control. Subsequently, a society's political situation will be unstable if government effectiveness, political stability, and rule of law indicators are low (Rajas, 2021). This highlights the crucial role that good governance plays in this context.

The cases described above imply that the positive influence of socio-economic development on individualism is further encouraged by good governance (quality of institutions). Hence, institutional quality is conceptualized as having a positive moderating effect on the relationship between socio-economic development and individualism.

The hypothesis is formulated as follows:

H3: The degree to which socio-economic development erodes collectivism and promotes individualism is positively moderated by institutional quality.

2.9 Conceptual model

Based on the first two chapters, figure 1 shows the conceptual model. This model expects a positive effect of socio-economic development on individualism. As outlined in sections 2.7 and 2.8, the relationship of socio-economic development on individualism is assumed to be positively moderated by economic inequality, as well as institutional quality.

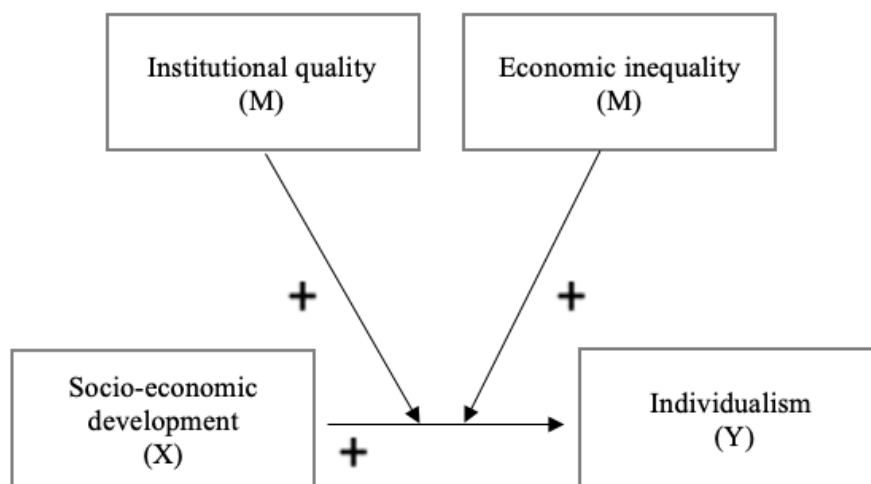


Figure 1: Conceptual model

Chapter 3. Methodology

This chapter covers the methodology which is applied to answer the research question.

Firstly, the methodological approach is described, followed by data collection methods, data remarks, variables, and analysis of the data. Lastly, this chapter focuses on research integrity.

3.1 Methodological approach

This is a quantitative study that aims to acquire insights into a possible shift of multiple societies towards individualism. To quantitatively answer the research question, the effect is estimated with panel data analysis. To account for both time- and country-invariant characteristics, a fixed-effect model estimation is applied. To this end, this research consists of a formal analysis of long-term economic and social development, which focuses on comparing developments in different countries.

3.2 Data collection

This study builds upon secondary data. To capture all the variables, data is sourced from three main data sources. These consist of the World Value Surveys, the World Bank, and data from the World Inequality database. There are a total of seven World Value Survey (WVS) waves (each conducted over multiple years) based on repeated cross-sections of stratified random samples of around 1,500 individuals. These individuals represent a wide range of wealth and cultural backgrounds. The WVS is a research project devoted to studying people's values across the world in an international context. These values mostly relate to political, social, economic, and cultural spheres. Since 1981, the WVS has conducted research in more than 120 world societies. At present, the WVS is the largest non-commercial cross-national empirical time-series investigation of human beliefs and values. Furthermore, data from the World Bank database are retrieved. The World Bank is an international organization with 189 member countries designed to fight worldwide poverty by strengthening the development agenda of its members. The World Bank database includes numerous indicators that relate to social, political, and economic factors that it gathers from published information by national statistical authorities. Furthermore, the World Inequality Database (WID) is consulted to construct a measure for economic inequality. The WID provides access to an extensive database, both between and within countries, on historical economic inequality developments over time. The WID combines fiscal data sources with survey data. Therefore, it distinguishes itself from other renowned institutions like the OECD and the UN, which mainly base their data on household surveys. Lastly, the sets of data of the Worldwide Governance Indicators

(WGI) are consulted to capture a proxy for institutional quality. The WGI is a dataset that is part of the World Bank and widely used to measure governance performance. The data is produced based on a wide variety of survey respondents in both the developed- and developing world.

3.3 Operationalization choices

There have been many questions raised about the dimensionality and operationalization of the IC constructs, both at the individual and societal levels (Kagitcibasi; 1997; Chen et al., 1997). As this study is based on panel data, Hofstede's dataset has not proved to be useful. Moreover, Hofstede's survey is conducted between 1967 and 1973, while holding the claim that the values available in its dataset can be considered up to date and do not change over time, for the reason that culture changes slowly (Hofstede et al., 2010). Yet, there have been many claims that numerous countries experienced substantial changes in cultural values due to globalization (Sortheix et al., 2019). In addition, scholars have argued that Hofstede's IC survey on differences in culture across countries has poor consistency and construct validity (Spector et al., 2001). Nevertheless, several studies have later validated Hofstede's measure of individualism (Gorodnichenko & Roland, 2012; Orr & Hauser, 2008). Besides, it has the key advantage, unlike other data on individualism, that the measurement is one-dimensional. At the same time, there is significant support for the contention that the IC dimension can be measured and conceptualized as individual differences (Triandis, 1995). Therefore, and based on previous literature, this thesis uses individual data items from the WVS to measure the construct of individualism-collectivism. This data is aggregated to the country-level. Prior research that employed indicative WVS items, that are consistent with the meaning and implications of individualism, guided this choice (Santos et al., 2017; Hamamura, 2012). Beugelsdijk et al. (2015) found that WVS values of both individualism and collectivism closely correlate (0.77) with Hofstede's theoretical concept. Oyserman et al (2002) proposed seven individualistic values that can be deducted from WVS data: personal goals, competition, uniqueness, independence, privacy, direct communication, and self-knowledge (see appendix 1). Nevertheless, as the hypotheses suggest, this study is also interested whether socio-economic development simultaneously erodes collectivism. For this reason, this study follows the work of Guo et al. (2022), who, based on previous literature, recently suggested 13 new items to measure individualism-collectivism. The exploratory factor analysis in their study has revealed that the WVS dataset items are loaded on one factor,

suggesting they measure one construct (Guo et al., 2022). In trying to validate the finding of Guo and his colleagues – whose study includes data from the most recent Wave (7) only – for this study and selected time span, Cronbach’s alpha of the 13 items of the constructed individualism-collectivism measure is 0.8151 (appendix 5). The construction of these items is as follows: Individualism is measured through seven items, while collectivism is measured through six items. Appendix 2 displays these 13 items and lays out the reasoning for using them. The 13 items are available in waves 3, 4, 5, 6, and 7 – albeit in a different order – and cover the period of interest from 1996 to 2018. The items for measuring the IC-construct have different answer scales and response styles. To correct this, scores for all items are standardized. Cohen et al. (1999) proposed a POMP (Percent of Maximum Possible) score transformation of all items before creating an item mean score. The POMP score expresses raw scores in terms of the maximum possible score, allowing comparisons across alternative scoring methods and populations (Fischer & Milfont, 2010). Because the survey data from the WVS is retrieved in percentages, an equivalent to the POMP method is applied: after multiplying the percentage points of each survey result by the corresponding Likert scale value and dividing the total score by 100, scores are multiplied by 1 divided by the number of scale points. This ensures values between 0 and 1. Thereby, and following Hofstede (2001), this study treats individualism and collectivism as opposite poles of the same dimension. After doing so, lower average scores for each item indicate more individualism *and* collectivism. To correct for this, the six items measuring collectivism are reversely coded, so that a higher average score on these items indicate higher collectivism (thus, a lower value indicates lower collectivism, or else, higher individualism). Subsequently, item scores are added for all 13 items (Guo et al., 2022) - where a lower value indicates higher individualism. In order to compare the data to Hofstede’s, the scores are plotted for 2018 derived from Wave 7 (the most recent year in this study) for 55 out of 63 countries for which mean scores could be computed that overlap with Hofstede’s dataset (see below).

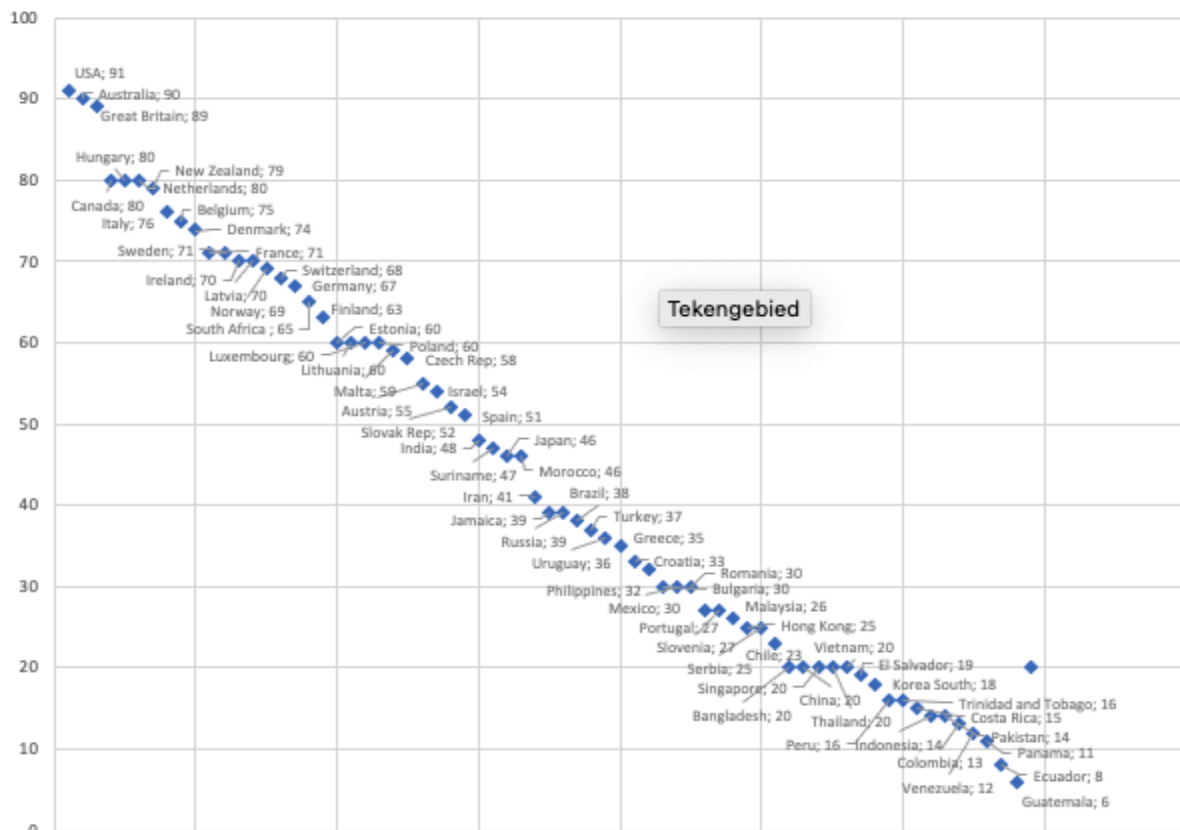


Figure 2: Individualism scores Hofstede dataset 2018 (high scores indicate high individualism, scale 0-100). Source: Hofstede-Insights. (2022)

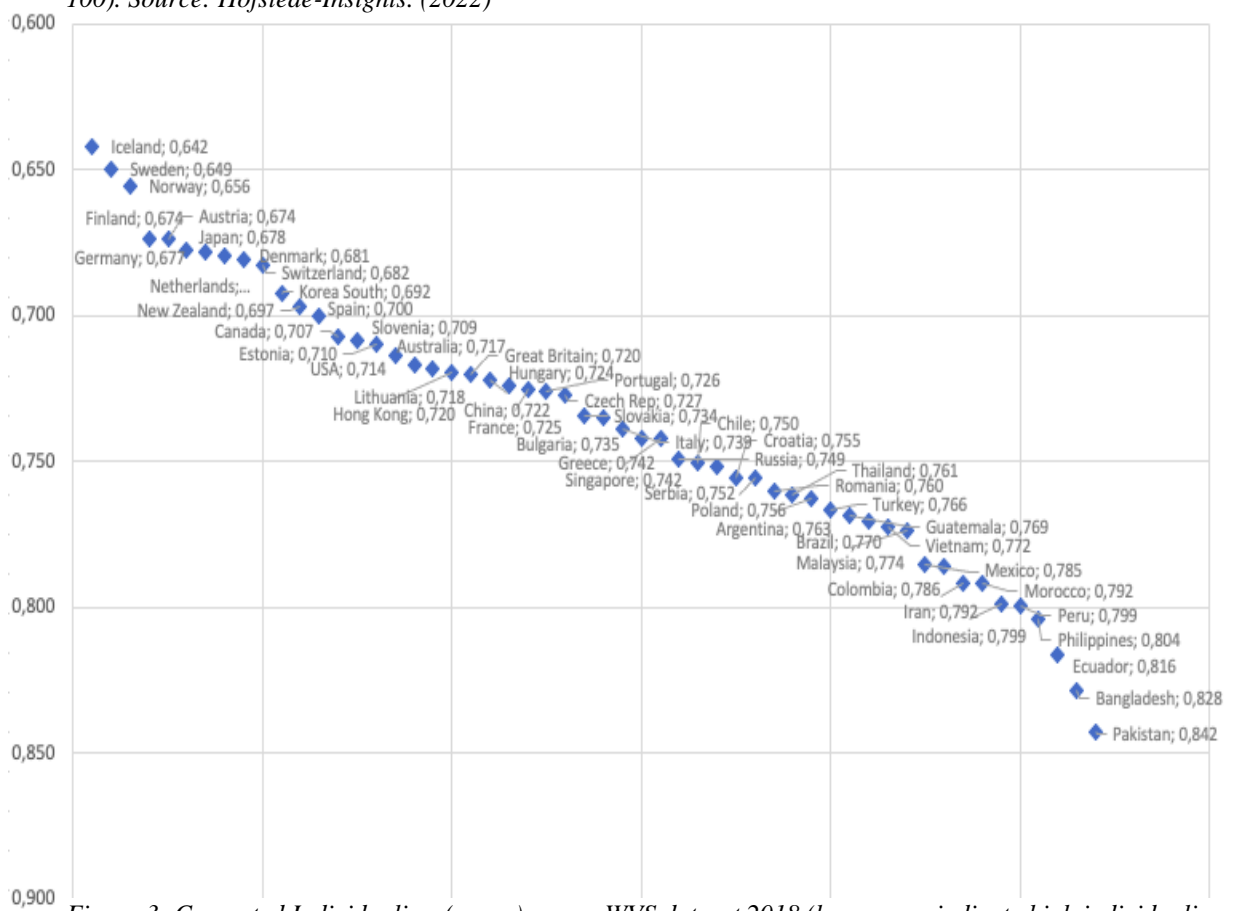


Figure 3: Computed Individualism (proxy) scores WVS dataset 2018 (low scores indicate high individualism, scale 0-1). Source: WVS. (2022).

Figure 2 shows the plotted scores derived from the Hofstede dataset. Since it is assumed that culture changes slowly, and that, therefore, values in Hofstede's dataset do not change over time, these scores should still be valid for 2018. In contrast, figure 3 displays the computed individualism (proxy) scores from Wave 7 (2017-2020) derived from the WVS dataset for 2018. What is interesting is that the in-sample mean of .7513 of the computed (proxy) construct for individualism-collectivism for the 63 countries included in this study does seem to suggest that most countries are socialized in collectivistic societies, a finding that is in line with earlier empirical work (Gully et al., 2003; Kagitcibasi, 1997). Although the two datasets cannot be compared in a valid way, the scores resemble each other in the grand scheme of things. The computed values indicate that the scores on the individualism-collectivism construct are much closer converged (the lowest score being 0,642 and the highest being 0,842), whereas Hofstede's data shows much more divergence. More importantly, the line of reasoning that I-C scores change slowly may still be valid, as the proxy WVS scores do not show a large between-country shift compared to Hofstede scores; countries in Northwestern Europe predominantly display high scores, while most Asian countries display low scores.

3.4 Variables

This section describes the variables included in this study. The decision to include these variables is made primarily on theoretical grounds (see Chapter 2). In line with the literature, it is expected that the findings indicate a positive effect of the independent variables on the outcome variable.

Socio-economic development

Three independent variables are included in the model: GDP per person employed, urbanization rate, and life expectancy at birth. Following Gorodnichenko & Roland (2011), this study uses the logarithmic form of the GDP per worker (*GDP_{pw}*), also known as productivity, to measure a developing economic environment. This measure of output per worker is derived as a ratio between real GDP and employment. Klenow & Rodriguez-Clare (1997) argue that this measure should be a preferred metric for long-run development. The GDP per person employed is the GDP divided by total employment in the economy of each country. To correct for skewness, the GDP per person employed is presented in logarithm form (constant 2017 PPP [Purchasing Power Parity] \$). Urbanization (*URB*) is included as an independent variable, as it can be considered a strong social marker (Moore, 2015; Kraus et al., 2012). The share of the urban population for the given period is included in the model.

Urbanization tracks the proportion of the population living in urban areas, for it has a strong connection to modernization, and therefore socio-economic development (Inkeles, 1975). Lastly, life expectancy (*LE*) at birth is added, as worldwide data on life expectancy appears strongly related to socio-economic development (Niu & Melenberg, 2013; Miladinov, 2020). Data for these variables are retrieved from the World Bank database.

Individualism (IDV)

To perform the analysis on a global scale, proxies for individualism (*IDV*) are constructed using survey data from the World Values Survey (WVS) over the period 1996 to 2018. Data is retrieved from version V3.0 of the World Values Survey longitudinal Multiple-Wave dataset. Over 1000 publications have used WVS data (Ye et al., 2015). This dataset provides the most extensive data on values with the broadest country coverage (Beugelsdijk et al., 2015). Furthermore, many prior empirical studies used this dataset on cultural dimensions and values to study relations between economic performance and culture (e.g., Barro and McCleary, 2003; Gorodnichenko & Roland, 2001; Klasing, 2013). The data covers almost 90% of the world's population (Molteni, 2020). It constitutes seven different waves collected in five-yearly waves: Wave 1 (1981-1984); Wave 2 (1990-1994); Wave 3 (1995-1998); Wave 4 (2000-2004); Wave 5 (2005-2008); Wave 6 (2010-2014) and Wave 7 (2017-2020). For the purpose of this study, data is gathered from waves 3, 4, 5, 6, and 7. Important to note is that the WVS time series does not show how the values of a selected group of people (panel) have changed over time, but rather how the values of a given country/society have changed over time.

Institutional quality (IQ)

This research incorporates institutional quality (*IQ*) as a moderator variable. To capture the variable, data is retrieved from the Worldwide Governance Indicators (WGI) dataset. The WGI captures governance performance by measuring six widespread dimensions, covering the full concept of IQ. The indicators are measured on a scale where the lowest number (-2.5) indicates governance performance that is weak, and the highest number (2.5) indicates strong governance performance. The WGI dimensions consist of the following six dimensions: regulatory quality, rule of law, voice and accountability, control of corruption, political stability, and government effectiveness. Regulatory quality (RQ) captures perceptions of the governments' capability to formulate and implement adequate policies. Rule of law (*RL*) measures the confidence perceptions of rules and regulations set up by society. Voice and

Accountability (VA) capture citizens' perceived ability to participate in the political process and the selection of government. Control of Corruption (CC) captures perceptions of the extent to which public power is exercised for private gain. Political Stability (PS) captures the perceived probability of political instability. Lastly, Governance Effectiveness (GE) captures citizens' perceived quality of public services, policy formulation, and implementation. The available data are updated every two years between 1996 and 2002; after 2002, they are updated every year. Therefore, this study computes mean value scores for the years 1997, 1999, and 2001. After 2001, the scores for the indicators are available for every year. The six items are constructed into a single proxy variable for institutional quality and are averaged for each year for each country.

Economic inequality (EI)

Economic inequality (*EI*) is incorporated as a moderating variable. Economic inequality is measured by focusing on the share of adults' pre-tax national income from the WID database. The share of this tax share is gathered for the bottom 50% of the population. The higher the percentage, the lower the disparities in income. Data is collected from the World Inequality Database, which is considered to contain the most comprehensive set of economic inequality statistics.

3.4.1 Control variables

Many factors affect the outcome variable. Since the direct dependency of socio-economic development on individualism needs to be assured, some remaining factors are marked as control variables. This implies that their values are supposedly considered constant to calculate the accurate relation between the independent and dependent variable. Drawn from the existing literature, the control variables are based on examples of changes brought by modernization (Inkeles, 1975). These are the demographic variables of population, education, health, and income. In addition, this study controls for gender.

Population size (PS)

Population size (**PS**) is controlled for, as it is critical to note of the size of countries. More specifically, it is used as a control variable, for it could affect individualism. There is a relationship between population size and individualism. Based on the models of the Malthusian trap, Ahuja et al. (2017) found that more individualistic societies display smaller populations. Similarly, additional empirical work assumed that regions with more populations are more collectivistic because they have more social contacts (Lu et al., 2021; Vandello & Cohen, 1999). For this reason, the population size is assumed to negatively impact individualism. Data are gathered from the World Bank [United Nations Population Division] and are measured annually between 1996 and 2018. This variable captures all residents living in a country, regardless of legal status or citizenship.

Human development (HD)

A robust link exists between several human development (**HD**) indicators and individualism (Gouveia & Ros, 2000). A body of research found that education impart values relating to self-actualization and self-expression (Newcomb, 1943; Ingeles, 1975). Hence, the effect of educational attainment on individualism is expected to be positive. Moreover, a significant interaction between health and individualism is established (Okely et al., 2018; Inglehart & Welzel, 2005). Higher per capita income is also linked to individualism (Ahuja et al., 2017). Data for human development is retrieved from the Human Development Index (HDI). The HDI has been extensively used to explain differences in values at a cultural level among countries (Sotelo & Gimeno, 2003). The HDI dataset consists of health, education, and income data to represent a national average of human development. The dataset also accounts for within-country differences in the three dimensions and relies on publicly available data from national household surveys (HDI, 2022). The value on these indicators ranges from 0 to 1 (1 being the highest score).

Gender (**GEN**) is included in the model as a control variable. Although most research found there is no basis for gender differences in individualism (Archer & Waterman, 1998), more recent studies have concluded that gender differences can, in fact, explain differences in individualism and collectivism (Aizawa & Whatley, 2006). Most of such differences have been discussed in relation to gender differences in value expression (Varet et al., 2018). Not only did women define themselves as more collectivistic than their male counterparts

(Madson & Trafimow, 2001) – a pattern earlier discovered in collectivistic cultures (Triandis et al., 1995) – survey results among participants on three continents found that men and women in different cultures showed different attitudes and emotional expressions based on cultural differences between individualism and collectivism (Aizawa & Whatley, 2006). More specifically, statistical results have revealed that females are generally more collectivistic compared to men (Zeffane, 2020). Data on the share of the female population, regardless of legal status or citizenship, is retrieved from the World Bank.

3.5 Descriptive Statistics

Variable	Observations	Mean	Std. dev.	Min	Max
GDPpw	1,449	4.692906	.347585	2.952736	5.439702
URB	1,449	69.08934	17.55139	22.064	100
LE	1,449	75.56417	5.232123	53.444	84.93414
IDV	765	.7513536	.0469033	.6323842	.8524375
IQ	1,449	.5481195	.8968807	-1.701227	1.969566
EI	1,449	.1697253	.04606	.058	.2854
PS	1,449	8.17e+07	2.18e+08	268916	1.40e+09
HD	1,322	.7912201	.1104946	.445	.954
GEN	1,449	50.80191	1.212865	47.65075	54.21058
GINI	776	36.22294	7.988783	23.2	64.8

*Variable 'PS': 8.17e+07 refers to 81,700,000, 2.18e+08 to 218,000,000, and 1.40e+09 to 1,400,000,000

Table 2: Descriptive statistics

Table 2 depicts the number of variables, observations, and measures of central tendency and dispersion. The high standard deviation in population size (PS) relates to the large divergencies between countries in terms of their population numbers. The same goes for the rate of urbanization (URB), with countries such as Bangladesh and Vietnam depicting 22% and 22.5% respectively in 1996, to Singapore and Hong Kong with 100% that same year. WVS data is collected in different waves, where each wave is conducted in different years (where the coverage in years differs for this specific study). Hence, available data are used for the reported wave years to create annual data. The dataset allowed N = 765 average score observations of the 13 items: early waves are limited in their coverage and do not include representative samples for some countries and/or some years. With such few observations, there is a possibility that the generalizability of the results reduces. Nevertheless, the dataset is sufficiently large to use the three independent variables directly as predictors. Linear prediction plots (appendix 4) show that all three predictor variables' scores have increased over the timespan studied.

3.6 Model

A panel regression analysis with fixed effects is performed to test that the relationships' direction runs from socio-economic development to individualism. The model is based on panel data, and all variables vary by country and time. The study includes 63 countries (see appendix 3) from the WVS dataset. The 63 countries were chosen as they overlap with Hofstede's dataset, which includes 69 countries. The other data sources all provide data for the same countries for the selected period. The base year is 1996, and the period runs to 2018. The base model includes 1449 (63 x 23) observations. Hence, this research conducts a more recent analysis compared to already existing literature. This time span was chosen according to the availability of data, as well as rapid increases in socio-economic development during that time. A panel data approach addresses the causal relationship between the dependent and independent variables (Hair et al., 2018). Panel data analysis is the best choice for this study, as it controls for country heterogeneity (Hsiao, 2014), removing any potential bias likely to be associated with cross-sectional data and time series (Baltagi, 2008). Therefore, it can reduce multicollinearity problems, have more degrees of freedom, and obtain higher model efficiency. In addition, this approach enables researchers to control unobservable effects for each country, omitted variable bias and reverse causality (Leszczensky & Wolbring, 2019), resulting in more accurate parameter estimates.

Since this study performs a panel data regression analysis, the following standard relation is used:

$$\gamma_{ct} = \beta_0 + \beta_1 c_t + \beta_2 X_{ct} + \delta_t + \alpha_c + \mathcal{U}_{ct} \quad (1)$$

Where:

- Y represents Individualism
- c represents country
- t represents time
- \mathcal{U}_{ct} is the unobserved error term

In this equation, Y is the measure of the dependent variable. β_0 is the constant, and β 's is representative of the parameters to be estimated. X illustrates the trajectory of variables that are controlled for. Moreover, δ_t consists of the entire set of year-fixed effects, whereas α_c represents the effects that are country-fixed. Finally, \mathcal{U}_{ct} represents the error term.

For this study, the following model is tested:

$$IDV_{ct} = \beta_0 + \beta_1 GDP_{pw_{ct}} + \beta_2 URB_{ct} + \beta_3 LE_{ct} + \beta_4 EI_{ct} + \beta_5 IQ_{ct} + \beta_6 PS_{ct} + \beta_7 HD_{ct} + \beta_8 GEN_{ct} + \delta_t + \alpha_c + \mathcal{U}_{ct} \quad (2)$$

The hypothesis of this model is:

$$H0: \beta = 0 \text{ or } H1: \beta \neq 0$$

The Hausman statistical test was performed to determine whether random effects (RE) or fixed effects (FE) would be appropriate for this study. The test revealed that the null hypothesis (that the random effect model is appropriate) should be rejected (appendix 6). In addition, an a priori power analysis has been conducted in G*Power 3.1 to determine whether the research design has sufficient statistical power. This was done considering that moderation effects are typically small (Aguinis et al., 2005). The analysis indicated that the study requires $N = 395$ for sufficient statistical power to be achieved (0.80) to detect a small effect (0.02) at $\alpha = 0.05$. The present sample size ($N=687$) in the base model is sufficient to explore a significant effect.

3.6.1 Fixed effects

Fixed effects (FE) are effects that represent unobserved characteristics that do not change over time (Woolridge, 2014). In other words, by applying fixed effects, constants are assumed, both over time (years) and within each entity (countries). For this reason, FE models control for the effects of time-invariant variables with time-invariant effects (Torres-Reyna, 2007). The analysis uses variables regression as control variables and to control for time FE. By applying both country and time FE control for constant factors, the R^2 value from regression analysis is likely be higher than normal. Hence, the model's variance might not reflect the proper value.

3.6.2 Lagged variables

The model includes lagged independent variables (ln) to tackle endogeneity problems. Lagged independent variables reduce the possibility of simultaneity bias, in that the independent variable may be impacted by the dependent variable. Furthermore, it can be assumed that changes to economic growth and social development are not expected to occur immediately. For example, changes in ‘development’ oftentimes happen through innovation, or changes in legislation over a longer period of time. A way to control for these impacts is

by including lagged independent variables (Woolridge, 2014). The model specification is as follows:

$$IDV_{ct} = \beta_0 + \beta_1 GDPpw_{ct-1} + \beta_2 URB_{ct-1} + \beta_3 LE_{ct-1} + \beta_4 EI_{ct} + \beta_5 IQ_{ct} + \beta_6 PS_{ct} + \beta_7 HD_{ct} + \beta_8 GEN_{ct} + \delta_t + \alpha_c + \mathcal{U}_{ct} \quad (3)$$

3.7 Research ethics

This research adheres to the five principles set out by the Netherlands Code of Conduct for Research Integrity. The five principles that researchers are expected to follow are (1) Honesty, (2) Scrupulousness, (3) Transparency, (4) Independence, and (5) Responsibility (VSNU, 2018). Great care is ensured to adhere to these five principles. This thesis only derives data from secondary databases. Consequently, the researcher cannot influence how the data is collected. However, all databases included in this research are from renowned and acknowledged institutions. Hence, both validity and reliability are ensured. Because the data included are freely available online, privacy issues play a minor role. Nevertheless, the researcher has complete control over what data is included or excluded. Therefore, it is important to remain as unbiased as possible and make decisions that can be considered neutral throughout the whole process, especially during the data collection and analysis phase.

Chapter 4. Results

This chapter introduces the results of this study. First, the correlations between the predictor variables are shown to check for multicollinearity problems. Thereafter, the results of the unadjusted linear regression are shown. The analysis consists of four models: the first introduces the control variables. The second model shows the impact of the predictor variables on the outcome variable, and the third and fourth model introduce the moderator effect of economic inequality and institutional quality, respectively.

4.1 Regression results

Variable	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
1. GDP	1							
2. URB	0.7290	1						
3. LE	0.6914	0.5970	1					
4. EI	0.4715	0.1693	0.4574	1				
5. IQ	0.7523	0.5440	0.6258	0.5711	1			
6. PS	-0.3895	-0.3861	-0.2625	-0.1484	-0.2728	1		
7. HD	0.8880	0.7362	0.8379	0.5558	0.7741	-0.3371	1	
8. GEN	0.2380	0.2820	0.0811	0.1098	0.1904	-0.4022	0.2625	1
<i>N</i>	1320							

Table 3: Pearson correlation coefficients results

Table 3 shows that correlations between the predictor variables take on moderate-to-high values. Nevertheless, the correlations between the predictors do not exceed the critical value of 0.9 (Dohoo et al., 1997), which indicates that multicollinearity does not pose a significant problem. This is strengthened by the fact that the variance inflation factor (VIF) test shows that the model – except for one variable – exhibits scores <10 for the predictor variables (see table 4). Multicollinearity is not considered a problem, as long as the collinear variables are used as control variables and are not collinear with the variable of interest (Allison, 2012). In this case, the VIF score of a control variable is high, but the variables of interest do not have high VIFs. This suggests that multicollinearity is perceived not to be a problem (Lin, 2008).

Variable	VIF	1/VIF
HD	11.55	0.086587
^b GDP _{pw_t}	5.82	0.171715
LE _t	3.70	0.270170
URB _t	3.46	0.289193
IQ	2.32	0.430490
EI	1.78	0.562900
PS	1.50	0.666135
GEN	1.43	0.701289
Mean VIF	3.94	

[†]These variables are lagged in time. ^bThis variable is log-transformed.

Table 4: Variance Inflator Factor Test (VIF)

The table (5) below shows the initial unadjusted ordinary least square (OLS) regression as basic estimation for the results of the panel data regression analysis. In this regression, the panel nature of the dataset is disregarded. The results indicate a statistically significant negative relationship for both GDP and life expectancy on individualism. As the scores were computed in a way that lower scores indicate higher individualism, these results were hypothesized to have a negative relationship with the proxy individualism score. On the other hand, however, the variable urbanization is significantly positively related to individualism, implying that for every unit (percentage point) increase in urbanization rate, there is a 1.5 unit increase in the variable individualism, implying lower individualism. This contradicts the suggestion that urban environments promote individualism (Greenfield, 2009). The results hold after including robust standard errors.

Dependent variable: Individualism (proxy)

Intercept	2.389*** (0.073)
GDPpw	-0.279*** (0.031)
Urbanization	0.015** (0.006)
Life Expectancy	-0.282*** (0.021)
Countries	63
Observations	765
R-squared	0,498
Adj. R-squared	0,496

*Note: Years in sample 1996-2018. Significance levels are denoted: * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. Standard errors are in parentheses.*

Table 5: Unadjusted linear regression results

Table 6 (below) displays the initial results from the panel data regression analysis. The model was first run without FE, then with Country FE only, then with year FE only, and lastly with both country- and year-FE. The results show the impact of the FE model (for which the reasoning is explained in chapter 3). The results of the model without country- and year-fixed effects show that for every unit (percentage point) increase of urbanization rate, the individualism score decreases by 2.18 units. This result is statistically significant at a 5% level. After including country FE only, every unit (percentage point) increase of urbanization rate decreases the individualism score by 3.67%, at a 1% significant level. The same significant relationship holds when only year-fixed effects are included. The main results after including both country- and year-fixed effects show that the relationship is still statistically significant at the 1% level, showing that every unit increase in the rate of urbanization leads to an increase of 4.17% in individualism (higher collectivism). Moreover, and in line with the hypothesis, a negative significant relationship on individualism can be observed for the control variables institutional quality and human development.

IDV	Without FE (RE)	County FE only	Year FE only (RE)	Country and Year FE
GDPpw	-.0358 (.0320)	-.0321 (.0318)	-.0158 (.032)	-.0149 (.032)
URB	.0218** (.0105)	.0367*** (.013)	.0325*** (.010)	.0417** (.013)
LE	-.043 (.0392)	-.0574 (.0418)	-.059 (.041)	-.023 (.047)
IQ	-.006** (.003)	.0112*** (.004)	-.001 (.003)	.0129** (.004)
EI	-.032 (.0383)	.057 (.0419)	-.0148 (.0383)	.066 (.043)
HD	-.152**** (.032)	-.115*** (.033)	-.286**** (.0380)	-.177**** (.0423)
PS	-1.26e-11 (1.39e-11)	-5.67e-11* (3.25e-11)	-1.85e-11 (1.31e-11)	-6.02e-11* (3.28e-11)
GEN	-.0035605* (.0019158)	-.003492 .0023754	-.0021247 .0018602	-.0034419 .0024012
Within R ²	0.142	0.182	0.183	0.223
Countries	63	63	63	63
Observations	687	687	687	687

*Note: Significance levels are denoted * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. Standard errors are in parentheses. The main interest, within R², is reported, as fixed-effects is known as the within-estimator.*

Table 6: Regression results panel data analysis with and without fixed effects

The table below (7) shows the four different panel fixed effect regression models. Model 1 shows the main impact of the predictor variable on the outcome variable including all the control variables whilst including country- and year-fixed effects. Departing from this model, the second model shows the impact of the predictor variables on the outcome variable after including both country-and year-fixed effects. The third model then shows the impact of the moderator effect of economic inequality and including all the control variables whilst controlling for country-and year-fixed effects. Lastly, the fourth model shows the impact of the moderator effect of institutional quality and including all the control variables whilst including country-and year-fixed effects. Before delving in the results and interpretation of these models, it is important to note that the magnitude of the coefficients in this study is significantly affected by the in-sample mean and standard deviation of the dependent variable, which stands small at .7513 and .04690, respectively. Therefore, the confidence intervals and standard errors displays small values, which might cause the coefficients to not tell a very useful story in and of itself.

Panel fixed effect estimation

	Model 1	Model 2	Model 3	Model 4
Intercept	1.080*** (0.225)	1.125*** (0.078)	0.024 (0.338)	1.235*** (0.233)
GDPpw	-0.007 (0.318)	-0.054* (0.031)	0.043** (0.185)	-0.026 (0.037)
Urbanization	0.045*** (0.013)	-0.005 (0.012)	-0.083** (0.033)	0.031** (0.015)
Life Expectancy	-0.033 (0.047)	-0.059 (0.038)	0.185** (0.090)	-0.021 (0.047)
Economic Inequality			7.216*** (-1.884)	0.061 (0.043)
Economic Inequality x GDPpw			-2.352** (0.961)	
Economic Inequality x Urbanization			0.804*** (0.195)	
Economic Inequality x Life Expectancy			-1.511** (0.537)	
Institutional Quality			0.011** (0.004)	0.309*** (0.109)
Institutional Quality x GDPpw				0.018 (0.079)
Institutional Quality x Urbanization				-0.023 (0.047)
Institutional Quality x Life Expectancy				-0.054 (0.037)
Population Size	-8.53e-11*** (3.16e-11)		-1.21e-10** (4.16e-11)	-6.04e-11* (3.30e-11)
Human Development	-0.168*** (0.033)		-0.189*** (0.042)	-0.204*** (0.044)
Gender	-0.003 (0.024)		-0.005** (0.002)	-0.005** (0.003)
Within R ²	0.205	0.148	0.254	0.237
F	20.86	33.15	6.77	6.18
N	687	765	687	687

*Note: Significance levels are denoted *p < 0.1 **p < 0.05; ***p < 0.01. Standard errors are in parentheses. The main interest, within R², is reported, as fixed-effects is known as the within-estimator.*

Table 7: Panel fixed effect estimation models results – four different models

The coefficients represent the average effect of X over Y when X changes across time and between countries by one unit. In the simplest model (2), GDP (taken as productivity) has a negative statistically significant relationship on the outcome variable individualism at the 10% level. This indicates that higher GDP per worker as presented in logarithm form leads to a lower individualism score (thereby indicating higher individualism). This validates the positive association between economic growth and individualism that is longstanding in the literature (e.g., Hansen, 2013; Ogihara, 2017; Gorodnichenko & Roland, 2011). However,

this finding is only partly line with the first hypothesis, as both urbanization and life expectancy do not show a significant relationship on individualism. In spite of this insignificant effect of the latter two, the explanatory value of the model is moderate (Cohen, 2013). Model 2 yields a within R^2 of 0.148, which indicates that 14.8% of the variance within the panel units is accounted for by the model (that is ‘socio-economic development’ as measured by GDP per worker, the urbanization rate, and life expectancy).

When the control variables are added in the first model, the main results of this study show that the significant negative relationship between GDPpw and individualism disappears. Instead, the variable capturing urbanization rate now shows a significant positive relationship at a 1% level on the individualism variable. This implies that a higher urbanization rate leads to decreasing individualism over time. This contradicts the hypothesis that urbanization leads to individualism as a central feature (Moore, 2005; Greenfield, 2009). Moreover, this model shows that the majority of the control variables have a statistically significant effect on individualism at the 1% level. The coefficient of population size is negatively statistically significant, implying that as the population grows, higher degrees of individualism become apparent. This finding debunks the theory of Malthusian, which suggests that smaller populations display more individualism (Ahuja et al., 2017). The same is true for the human development variable, implying that the more people are ‘developed’ according to this measure, the lower their scores is on the WVS measure, indicating higher individualism. This result validates the positive linkages between health and education on individualism (Ingeles, 1975; Okely et al., 2018). The combination of these results provides strong evidence for the fact that the control variables do change the estimates of the explanator variables. Model 1 yields an R^2 of 0.205, meaning that 20.5% of the variation within the panel units is explained by the model. Note that the (within) determination coefficient (R^2) increases after including the control variables.

Furthermore, the results in model 3 show that all three predictor variables are significantly related to individualism, albeit in different directions. As hypothesized, GDPpw and life expectancy at birth show a negative relationship on the individualism score. However, the rate of urbanization shows a positive effect, thereby going against the hypothesis that higher urbanization rates foster individualism. Both models 3 and 4 (in which the moderator effects are introduced) yield a higher determination coefficient. This indicates that both economic

inequality and institutional quality play an important role in the mechanisms at hand. As predicted, model 3 shows that the interaction term of economic inequality is significantly related to individualism. As this variable was measured in a way that higher scores indicate less economic inequality, the findings imply that less economic inequality should lead to more collectivism. In other words, as was predicted, the findings suggest that contexts of economic inequality are more prone to the projection of more individualistic norms onto society. However, the same is not true for institutional quality. Model 4 shows that the moderating effect of institutional quality is not apparent, despite the fact that, by itself, it is significantly positively related to the individualism score. This implies that a higher score on the measure of institutional quality leads to more collectivism. Although inconsistent with the reasoning brought forward, this finding does validate the connection between governance and the IC dimension as found in the literature (e.g., Tanzi, 1994; Fukuyama, 2011). Another (robust) finding from the last model is that urbanization is significantly positively related to the individualism score.

4.2 Robustness check

A robustness check was performed for model 3 and 4 to see whether the results of the interaction terms would hold (see appendix 7). This was done in order to confirm that there is a positive moderating effect of economic inequality, but not for institutional quality, on the relationship between socio-economic development and individualism. The models were run again using robust standard errors. This was done to account for any autocorrelation and heteroskedastic within each country. The results of running model 3 again show that significant moderating effect of economic inequality hold for the relationship of both GDPpw and urbanization on individualism. However, the significant interaction effect with life expectancy disappeared. The results of model 4 showed that the insignificant interaction term of all three predictor variables on institutional quality are robust. This check validates the finding of a moderating effect of economic inequality, but not for institutional quality.

Chapter 5. Discussion

This chapter presents the discussion of the results. It does so by reflecting on the research question and hypotheses.

The introductory part of this study outlined the existing notion of the empirical relationship between prosperity and individualism. As most literature that has found such evidence primarily focused on rich countries (e.g., Santos et al., 2017; Kwon, 2006; Hamamura, 2012), the contribution that this study is the extended scope of considering low-and middle-income countries. The introduction also highlighted the lack of causal evidence, as well as the unclear direction of effects. Namely, the major bulk of literature has focused on the effect of individualism on ‘prosperity’, thereby widely assuming that individualistic societies are more prosperous as compared to collectivistic countries (Hansen, 2013; Klasing, 2013; Ogihara, 2017). This study, on the other hand, attempted to test the reverse relationship, that is, that of ‘prosperity’ on individualism. The main reason for testing this relationship is the appearance of increased individualism over the past decades as a result of increased prosperity (Ogihara, 2017), while, at the same time, a relatively small share of the worlds’ population is considered individualistic (Gully et al., 2003; Kagitcibasi, 1997). The approach of this study was built on the work of Santos et al. (2017), who argued that increasing socio-economic development is the strongest predictor of increased individualism over time. In doing so, the study employed a new measure of the individualism, as well as changes in the methodology. What logically followed, was the research question that this study aimed to answer:

‘What is the effect of socio-economic development on individualism?’

In order to test the hypotheses that socio-economic development promotes individualism, while simultaneously eroding collectivism, a new measure of the Individualism-Collectivism construct was computed based on longitudinal survey data on attitudes and values. The construct ranges on a scale from 0 to 1. To capture the independent variable, this study employed three separate predictor values that together serve as proxy for the variable. The proxy measure constitutes the logarithmic form of the GDP per worker (productivity), the share of the urban population, and life expectancy at birth. One of the most notable discussion points is how a substantial amount of the results is not in accordance with the previous research on this topic; none of the hypotheses can be fully accepted. The different

findings thus produce two relevant questions: why do the results differ from previous studies? And what is the explanation for the results?

As hypothesized, the predictor GDPpw showed a negative statistically significant relationship with individualism. A finding that contradicts the first hypothesis is that, in model 3, life expectancy leads to higher collectivism. However, in all other models, the opposite is true, albeit without significant coefficients. Especially in the second model, the interaction between life expectancy and individualism came close to attaining statistical significance ($p < .10$), suggesting that improved measurement or perhaps other methods produce findings supportive of the hypothesized expectations. Moreover, the role that urbanization plays is an interesting finding. The cited literature on modernization suggests that urbanization is expected to lead to higher forms of individualism, but the results of this study indicate that the opposite is true. Nonetheless, these finding may be explained by another influential theory, the survival-based view in game theory. This view proposes that cooperative groups may be more likely to survive than uncooperative ones (Roger & Johnson, 1994). Therefore, the theory posits that some survival methods (for example, densely populated areas with little space and leeway) require more cooperation, thereby leading to the formation of more collectivistic cultural orientations in the long run (Wagner, 1995). The findings of this study can be considered to validate this theory.

The control variables, as predicted, mostly showed a statistically significant relationship on the measure of individualism. The results imply higher individualism as human development, population size, and the share of females in the population increase. Nonetheless, when taking a measure of ‘human development’ together, it is the only variable that lines up with the hypothesized arguments. The other two control variables tell a different story. What is striking is that this study found that as the population of a country grows, the society displays more individualism in the long run. Although this contradicts the hypothesized reasonings put forwards, it could provide strong evidence for why it is observed that individualism has increased worldwide since 1960. Namely, the world’s population has been on a growth trajectory, and has since 1960 seen an increase of approximately 159.5%. The contradictory results for the variable gender may be attributed to the fact that, in Asian countries, females are found to be less likely to be strongly connected to their family, but rather, and compared to men, subjugate their personal goals rather than the societal ones (Cross & Madson, 1997; Baumeister & Sommer, 1997). Ultimately, the pattern of context-sensitivity in gendered self

depends on culture (Kashima et al., 1995). Another plausible explanation is that the share of females (with an in-sample mean of 50.80191) may be overshadowed by the overall growth in population, which showed a strong relationship to the individualism measure.

This study predicted that the positive relationship of socio-economic development on individualism would be enhanced by economic inequality. Both the results of GDPpw and life expectancy validate this prediction. Nonetheless, the significant positive interaction term between the predictor variable urbanization and economic inequality is surprising. The results indicate that an increase in urbanization rates lowers individualism (and thus facilitates more collectivism) in the presence of (high) economic inequality. Although this finding goes against the backdrop of earlier literature (e.g., Moore, 2005; Ball, 2001), it strengthens the argument as laid out by the survival-based view in game theory. Following these results, the second hypothesis can be partly accepted.

The study also hypothesized that good institutional quality would lead to higher individualism. Instead, the findings show that institutional quality is significantly positively related to the individualism score, which implies higher collectivism. In the context of this study, the finding thus debunks the posited argument that socio-economic development has a stronger effect on individualism when it is supported by good governance. The arguments laid out in this study rested in part on the role of the substitutive effects of informal institutions when institutional quality is low (e.g., Baig, 2016; Guiso et al., 2004). This study assumed that when institutional quality is high, people do not need to rely on informal institutions, thereby encouraging further distance from reliance on others. Similarly, it might be the case that, in low quality governance contexts, people *need* to rely on informal institutions, such as networks and trust. This may create a situation where people, instead of relying on formal institutions when present, people internalize the services of inadequate governance in its absence by relying on each other. Such a situation would then lead to more collectivism. This study did not find evidence for this hypothesis. However, taken as interaction terms, both urbanization and life expectancy load negatively on the individualism measure as institutional quality increases. These results are non-significant, however. Hence, with respect to this study, the third hypothesis should be rejected.

Chapter 6. Conclusion

The chapter consists of two parts. The first part outlines limitations of this study. The second part addresses the main implications, as well as recommendations for further research.

Theories pointed out towards a positive relation between socio-economic development and individualism, while the empirics from this thesis suggest that such relationship is less robust. Conversely, results show that some markers of socio-economic development over time point to decreasing individualism on the country-level. This study attempted to make causal inferences, although interpretations should relate to correlations instead.

This study found that, between 1996 and 2018, higher rates of urbanization in a country has led to more collectivism, while growing population sizes in itself to more individualism. Moreover, this study has showcased the importance of the presence of economic inequalities on the direct relationship of socio-economic development on individualism. More concretely, the findings have shown that countries with high productivity and urbanization rates are more prone to the projection of more individualistic norms onto society in the contexts of high economic inequality. In the same vein, a stronger effect on individualism was predicted in situations of good governance, but no such relationship could be established. This perhaps reflects substitutive effects of informal institutions when institutional quality is low. However, more research is needed in order to establish such relationship. Such studies might extend the scope of the theory, as it has so far mainly founded grounds in the broad realm of international business studies (e.g., McKague et al., 2015).

6.1 Limitations

Any research is, in some form or another, accompanied by limitations. This study is no exception. The most notable limitations relate to the methodology, conceptualization, data, and the overall nature of this study. Of course, this work has rested upon the notion of causal inference. However, the data and method employed lack a strong identification strategy, so that endogeneity still poses a big concern. This can be attributed to the fact that, for example, this study does not include exogenous variation in the independent variable. In the context of this study, this problem is intensified because endogeneity problems are especially prevalent at the country-level. The implications of using a fixed effects model are its inability to accommodate the recognition of the diversity of country experiences (within-country variation), insofar that the analysis only observes changes over time; year fixed effects take

away global trends. Moreover, the dependent variable Individualism does not vary much within each country. It is therefore very difficult to draw a causal lesson using only time and between-country variation. Logically, countries were subject to numerous other influences over the period that studied. Therefore, evidence is mostly correlational and open to alternate explanations. Considering these limitations, readers of this study should be careful to not overinterpret the results.

The issue that is associated with the conceptualization relates primarily to the aggregated level of analysis, which limits the conclusions and generalizations that can be drawn from the research. A country-level analysis of individualism is not able to explain individual behaviour, which can be considered a theoretically distinct problem.

Another important limitation relates to the measurement of the I-C construct. It is a new measure (Guo et al., 2022) and used as a framework to understand the differences in cultures across countries. Moreover, there are several limitations inherent to using survey data. However, this might not really be an issue considering that this study is concerned with societies at the country-level. Notwithstanding, it is important to comment on this. As the computed individualism proxy value is derived from survey data, this study takes notice of the *direct assessment method*. This method considers cultural values as ‘*a form of declarative knowledge*’ (e.g., values, beliefs, attitudes) that respondents can report on, rather than a set of ‘*subtle and implicit practices and social structures*’ that respondents cannot report on because these practices are deeply woven into every life (Oyserman & Uskul, 2008). Furthermore, it is imperative to mention that the new measure based on the 13 WVS items needs to be further verified in terms of its reliability and validity (Guo et al., 2022). For this reason, this thesis by no means claims to measure the total essence of Individualism-Collectivism as an evolved social behaviour.

Moreover, there are a several issues associated with the measurements. This issue is especially conducive to social science research (Lester et al., 2014). First, there is the issue of ‘*standardization of interpretation*’ (Cohen et al., 1999). Out of the 13 items, the first three questions, as well as question 27 are based on a 4-point scale ranging from 1 (very important/agree strongly) to 4 (not at all important/disagree strongly). The majority of items are based on a 2-point (Q8, Q10, Q11, Q14, Q15, Q16, Q17), a 5-point (Q34), and a 10-point

Likert scale (Q107). This required the study to utilize (an equivalent to) POMP scores. The issue with POMP scores is that they do not address the relative meaning of scores compared to real of statistical ‘norm’: a score of 0.6 for a country only indicates that the country achieved a score of 0.6 but could have obtained a score of 0. So, the problem with the interpretation of each score is related to either norm population or the scale used for measuring the construct (Fischer & Milfont, 2010). Additional data remarks related to the individualism proxy are described in section 3.3.

Additional limitations are related to the use of other variables. For example, there have been many issues raised about the measurement of ‘institutions’ the country level. The use of these measurements is necessarily coarse, and obscures important dimensions of heterogeneity (Pande & Udry, 2005). It is difficult with this approach to meet the exogeneity requirement for a causal estimation of the role of governance on outcomes, such as individualism. This is accompanied by some valid questions in the literature about the use of the World Governance Indicators (WGI). Several scholars (e.g., Kaufmann et al., 2011; Thomas, 2010) have argued that this dataset cannot assure consistency in measurement estimation. The authors’ concerns refer to the allocation of equal weights to each of the variables, as well as the question if, in case of differing importance, how weight should be allocated. Moreover, there are many ways to measure economic inequality. The measure that was used for this study, namely the share of adults’ pre-tax national income for the bottom 50% of the population, offers very limited insight into the income distribution. This measure does not inform how the income is distributed among the bottom 50%, nor does it reveal the nature of the distribution of income among the top 50% (De Maio, 2007). These are valid concerns that the readers should be aware of.

The lack of many variables has unequivocally led to a missing variables bias. This can be seen by the relatively low R-squared, pointing to the presence of many omitted variables. The main attempt, however, was to demonstrate the societal implications related to attitudes and beliefs due to increased socio-economic development between countries over time – and that there is more to the story than the alternative theory that individualistic societies are more prosperous. Lastly, the limited data that was available for this study’s purpose played an important role. Specifically, the average score of all the 13 items did only allow for 765

observations. All in all, these measurement- and data issues can be considered to have negatively affected the external validity.

6.2 Implications and further research

The approach of this study was built on the assumption that individual-level ratings, aggregated, reflect a critical aspect of culture which carries important implications for society; value changes associated with individualism have wide-ranging implications. However, as this study relies on secondary sources and a quantitative assessment for specific indicators, any conclusions about ‘development’ and its relation to individualism go beyond the scope of this study. Rather, the conclusions drawn relate to the effect of socio-economic development on individualism when socio-economic development changes across time and between countries. Notwithstanding, the findings of this study has contributed to the research on IC dimension, particularly on individualism.

This dissertation contributes to the literature through facilitating comparative cross-cultural research. Moreover, a theoretical implication is that this study has shown that the (causal) relationship of socio-economic development on individualism is not so clear-cut as the literature suggests, and that Modernization theory might not be as suitable for explaining and understanding the phenomenon of increased individualism.

The choice to apply a country-level conceptualization led the measurement of individualism to relate to a country’s, not an individual’s, characteristic. However, it would be interesting to see how the relationship between socio-economic development and individualism unfolds at the individual-level. Such research would carry more practical relevance. On a global level, however, the IC dimension will continue to play a major role in international contacts. Differences regarding this dimension are responsible for many misunderstandings in encounters between cultures, as international organizations, both public and private, depend on cross-cultural communication and cooperation for their functioning. This makes the study of cultural change an exciting scientific endeavor in the years ahead.

This leaves scientists and practitioners ample room for further research on this topic. This is especially relevant as this study has produced many contradictory results. More research is needed that employs this new measure of the individualism-collectivism construct (Guo et al.,

2022), not only to validate the findings of this study, but more so to validate the construct itself. As Guo et al. (2022) mention, who first employed this measure of individualism, there is a chance that the 13 items lack consistency with the essentials of individualism-collectivism. Ultimately, individualism is a broad concept and grasping its full essence is a difficult task but advancing our knowledge on potential cultural shifts in the domain of I-C in the long run is important; Hofstede's dataset has not proved useful for longitudinal studies.

Additionally, future research could focus on employing different measurements and different markers in an attempt to capture perhaps a different essence of 'socio-economic development'. The same goes for additional variables, economic inequality, and institutional quality, specifically. The significantly positive relationship of the interaction terms on institutional quality calls for a robustness check using national business system types as control variable, for example. Namely, the notion that business groups do not disappear when an emerging country develops socio-economically is well-standing in the literature (e.g., Carney et al., 2009). It is to be hoped that improved data availability will allow researchers to examine these questions in the future.

At the end of the day, the individualism-collectivisms concepts are hard to capture, but attempting to do so by means of new measurements such as employed in this study could serve as an alternative to the meaning and implications of the construct. Through this lens, this paper is another step in this direction and hopefully one that sparks more steps towards research on this topic.

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Appendices

Appendix 1

Domain name	Description	Sample item
Individualism		
Independent	Freedom, self-sufficiency, and control over one's life	I tend to do my own thing, and others in my family do the same.
Goals	Striving for one's own goals, desires, and achievements	I take great pride in accomplishing what no one else can accomplish.
Compete	Personal competition and winning	It is important to me that I perform better than others on a task.
Unique	Focus on one's unique, idiosyncratic qualities	I am unique—different from others in many respects.
Private	Thoughts and actions private from others	I like my privacy.
Self-know	Knowing oneself; having a strong identity	I know my weaknesses and strengths.
Direct communicate	Clearly articulating one's wants and needs	I always state my opinions very clearly.
Collectivism		
Related	Considering close others an integral part of the self	To understand who I am, you must see me with members of my group.
Belong	Wanting to belong to and enjoy being part of groups	To me, pleasure is spending time with others.
Duty	The duties and sacrifices being a group member entails	I would help, within my means, if a relative were in financial difficulty.
Harmony	Concern for group harmony and that groups get along	I make an effort to avoid disagreements with my group members.
Advice	Turning to close others for decision help	Before making a decision, I always consult with others.
Context	Self changes according to context or situation	How I behave depends on who I am with, where I am, or both.
Hierarchy	Focus on hierarchy and status issues	I have respect for the authority figures with whom I interact.
Group	A preference for group work	I would rather do a group paper or lab than do one alone.

Appendix 1: Individualism and Collectivism domains assessed in Individualism–Collectivism scales. Source: Oyserman et al.(2002).

Appendix 2

Items measuring Individualism (based on WVS wave 7)	Scale	Description
Q2: Important in life: friends	1 = Very important, 4 = Not at all important	The degree to which a person attaches importance to friends has been used as an indicator of individualism (Hamamura, 2012; Santos et al., 2017)
Q3: Important in life: leisure time	1 = Very important, 4 = Not at all important	The degree to which a person attached importance to leisure time has been used as an indicator of individualism (Hamamura, 2012; Santos et al., 2017)
Q8: Important child qualities: independence	1 = Important, 2 = Not mentioned	Independence is associated with the individualistic value of independence (Oyserman et al., 2002)
Q10: Important child qualities: feeling of responsibility	1 = Important, 2 = Not mentioned	The feeling of responsibility is associated with the individualistic value of independence (Oyserman et al., 2002)
Q11: Important child qualities: imagination	1 = Important, 2 = Not mentioned	Imagination is associated with competition and personal goals (Oyserman et al., 2002)
Q14: Important child qualities: determination perseverance	1 = Important, 2 = Not mentioned	Determination perseverance is associated with competition and personal goals (Oyserman et al., 2002)
Q107: Private vs. state ownership of business	1 = Private ownership be increased, 10 = Government ownership, be increased	The extent to which the participants agree to increase private ownership of the business can be considered an indicator of individualism (House et al., 2004)
Items measuring Collectivism (based on WVS wave 7)	Scale	Description
Q1: Important in life: family	1 = Very important, 4 = Not at all important	The degree to which a person attaches importance to the family represents the typical feature of collectivism (Hamamura, 2012; Santos et al., 2017)
Q15: Important child qualities: religious faith	1 = Important, 2 = Not mentioned	Religious faith, without invoking any specific denomination, is associated with collectivist values (Schwartz, 1990)
Q16: Important child qualities: unselfishness	1 = Important, 2 = Not mentioned	Unselfishness can be considered a measure of the collectivist values of relatedness, duty, and/or harmony (Oyserman et al., 2002)
Q17: Important child qualities: obedience	1 = Important, 2 = Not mentioned	Obedience can be considered a measure of the collectivist values of hierarchy (Oyserman et al., 2002)
Q27: One of my main goals in life has been to make my parents proud	1 = Agree strongly, 4 = Strongly disagree	One of the main goals in life is to make one's parents proud can be used as an indicator of family collectivism because it measures duty to parents and extended family (Beugelsdijk & Welzel, 2018)
Q34: Employers should give priority to (nation) people than immigrants	1 = Agree strongly, 5 = Disagree strongly	Employers give priority to natives over immigrants when jobs are scarce is included because group exclusivity is inherent in collectivism (Beugelsdijk & Welzel, 2018)

Appendix 2: Individualism and Collectivism items derived from the World Value Surveys. Source: Guo et al. (2022).

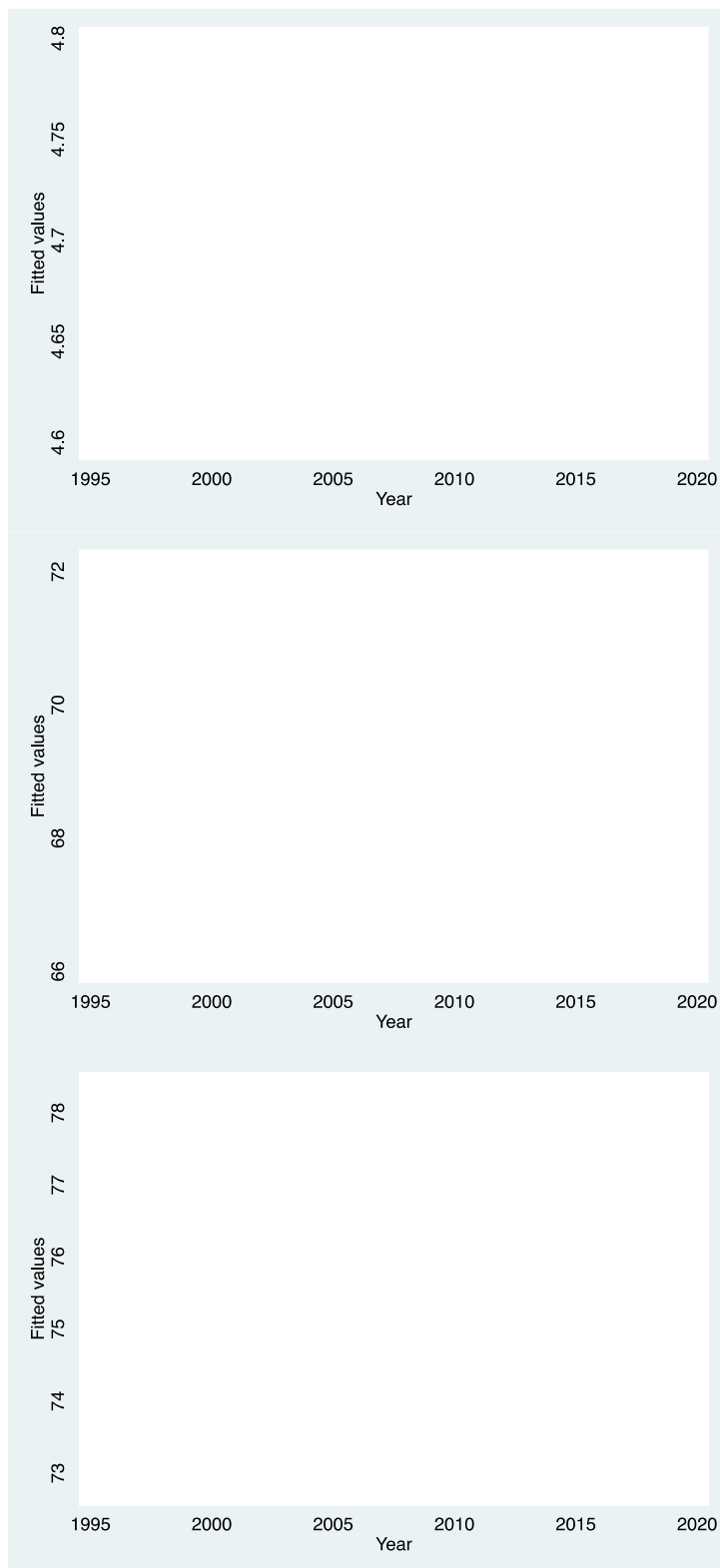
Appendix 3

1. ARG	Argentina	38. MEX	Mexico
2. AUL	Australia	39. MOR	Morocco
3. AUT	Austria	40. NET	Netherlands
4. BAN	Bangladesh	41. NZL	New Zealand
5. BEL	Belgium	42. NOR	Norway
6. BRA	Brazil	43. PAK	Pakistan
7. BUL	Bulgaria	44. PER	Peru
8. CAN	Canada	45. PHI	Philippines
9. CHL	Chile	46. POL	Poland
10. CHI	China	47. POR	Portugal
11. COL	Colombia	48. ROM	Romania
12. CRO	Croatia	49. RUS	Russia
13. CZE	Czech Rep	50. SER	Serbia
14. DEN	Denmark	51. SIN	Singapore
15. ECA	Ecuador	52. SLK	Slovak Rep
16. SAL	El Salvador	53. SLV	Slovenia
17. EST	Estonia	54. SA	South Africa
18. FIN	Finland	55. SPA	Spain
19. FRA	France	56. SWE	Sweden
20. GER	Germany	57. SWI	Switzerland
21. GBR	Great Britain	58. THA	Thailand
22. GRE	Greece	59. TRI	Trinidad and Tobago
23. GUA	Guatemala	60. TUR	Turkey
24. HOK	Hong Kong	61. USA	U.S.A.
25. HUN	Hungary	62. URU	Uruguay
26. ISL	Iceland	63. VIE	Vietnam
27. IDO	Indonesia		
28. IND	India		
29. IRA	Iran		
30. ISR	Israel		
31. ITA	Italy		
32. JPN	Japan		
33. KOR	Korea South		
34. LAT	Latvia		
35. LIT	Lithuania		
36. LUX	Luxembourg		
37. MAL	Malaysia		

**Taiwan is excluded from the original Hofstede's and WVS dataset as it is not listed as a separate country in the World Bank database.*

Appendix 3: Countries included in the Hofstede dataset. Source: Hofstede-insights (2022)

Appendix 4



Appendix 4: Linear prediction plots for Productivity, Urbanization, and Life Expectancy, respectively

Appendix 5

Cronbach's Alpha

Average interitem covariance	.0015982
Number of items in the scale	13
Scale reliability coefficient	0.8151

Appendix 5: Cronbach's Alpha for the 13 items that comprise the individualism measure

Appendix 6

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) Std. err.
	(b) fe	(B) re		
lnGDPpw	-.0620311	-.0834537	.0214226	.0057296
lnLE	-.1321629	-.1401711	.0080082	.0065032
lnURB	-.0089745	-.0127108	.0037363	.0057502

b = Consistent under H0 and Ha; obtained from **xtreg**.

B = Inconsistent under Ha, efficient under H0; obtained from **xtreg**.

Test of H0: Difference in coefficients not systematic

$$\begin{aligned}\text{chi2}(3) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= \mathbf{37.88}\end{aligned}$$

Prob > chi2 = **0.0000**

Appendix 6: Hausman statistical test results to determine fixed/random effects

Appendix 7

Panel fixed effect estimation

	Model 3	Model 4
Intercept	0.024 (0.682)	1.235** (0.483)
GDPpw	0.043* (0.242)	-0.026 (0.056)
Urbanization	-0.083 (0.057)	0.031 (0.042)
Life Expectancy	0.185 (0.189)	-0.021 (0.066)
Economic Inequality	7.216* (4.001)	0.061 (0.066)
Economic Inequality x GDPpw	-2.352* (1.262)	
Economic Inequality x Urbanization	0.804** (0.234)	
Economic Inequality x Life Expectancy	-1.511 (1.283)	
Institutional Quality	0.011* (0.006)	0.309** (0.164)
Institutional Quality x GDPpw		0.018 (0.173)
Institutional Quality x Urbanization		-0.023 (0.037)
Institutional Quality x Life Expectancy		-0.054 (0.066)
Population Size	-1.21e-10** (5.34e-11)	-6.04e-11 (5.24e-11)
Human Development	-0.189** (0.055)	0.204** (0.056)
Gender	-0.005 (0.006)	0.005 (0.006)
Within R ²	0.254	0.237
F		
N	687	687

*Note: Significance levels are denoted * $p < 0.1$ ** $p < 0.05$; *** $p < 0.01$. Robust standard errors are in parentheses. The main interest, within R², is reported, as fixed-effects is known as the within-estimator.*

Appendix 7: Panel fixed estimation models results – robustness checks moderating effects