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Horizontal Inequality in Chiapas –
25 years after the Zapatista Movement

by

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Abstract: The International Development Community places individuals at the center of concern for policy making. This study investigates why group analyses are crucial for the welfare of individual and social stability, and claims that the concept of *Horizontal Inequality* (group-based inequality) is important but widely neglected. The group of investigation is the indigenous population in Chiapas, Mexico's poorest state. Since their initial protests in 1994, they demand more rights and a more equal society. The research at hand shows that little has changed since then as the indigenous population still lags behind in terms of socio-economic indicators. Apart from providing patterns over time, this study finds that the indigenous population in Chiapas is worse off than in other Mexican states. This demonstrates that the prevalence of high economic and social inequality patterns still hinder Chiapas' indigenous population from improving their poor living standards. Thus, this thesis concludes with policy implications and a call for strengthening efforts on behalf of the Mexican government.

Key words: horizontal inequality, indigenous population, poverty, chiapas

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<u>List of abbreviations:</u>

CONEVAL	National Council for the Evaluation of Social Development Policy, Mexico (Consejo Nacional de Evalucación de la Política de Desarollo Social)
CDI	National Commission for the Development of the Indigenous Population, Mexico (Comisión Nacional para el Desarollo de los Pueblos Indígenas)
ECLAC	United Nations Economic Commission for Latin America and the Caribbean (Comisión Económica para América Latina y el Caribe, CEPAL)
EZLN	Zapatista Army of National Liberation (Ejército Zapatista de Liberación Nacional)
HI	Horizontal Inequality
INEGI	National Institute of Statistics and Geography, Mexico (Instituto Nacional de Estadística y Geografía)
NAFTA	North American Free Trade Agreement
OECD	Organisation for Economic Co-operation and Development
UNDP	United Nations Development Programme
PISA	Programme for International Student Assessment
VI	Vertical Inequality

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1 Introduction

1.1 Background

The United Nation's Tenth Sustainable Development Goal (SDG) is devoted to the reduction of inequalities. Developing countries are particularly characterized by high inequalities in terms of income and opportunities, and they often struggle for decades to interrupt persisting inequality patterns (CDI/UNDP, 2006). Apart from the logical desire for fair distribution, there are several reasons that stress the importance of tackling inequality. The World Economic Forum suggests that "Economic progress and stability" (World Economic Forum, 2015, p.1) is threatened by high inequality due to its negative correlation with economic growth. Moreover, they analyzed that unequal countries are more likely to have volatile economies which makes them generally more vulnerable to crises (World Economic Forum, 2015). Besides economic characteristics, historical evidence shows that inequality can have a severe impact on a country's political stability (Ostby, 2007). Examples from across the world, for instance from Uganda, Sri Lanka, South Africa, Northern Ireland, Brazil or Malaysia have shown that disadvantaged groups – not only in terms of economic but also regarding social and political factors – have stood up to face oppressing powers.

This sheds light on the importance of revising a country's inequality patterns not only in terms of the conventional Gini coefficient of income inequality but to analyze further inequality types. At least since Amartya Sen's Capability Approach has reached its peak of popularity, policymakers and governments worldwide started to look beyond inequality of income in their attempt to make societies more equal. Hence, measures such as educational inequality or inequality of opportunities have soon become common alternatives to the conventional GINI. More recently, another alternative inequality measure has gained popularity amongst policymakers and economists: *Horizontal Inequality*.

This concept has been brought to the fore by Frances Stewart (2002) who claims that today's inequality analysis still focuses predominantly on income inequality of individual households. According to Stewart (2002) this needs to be complemented by two further steps: Firstly, she agrees with Sen's approach on including further non-monetary indicators, such as well-being or social deprivation. Secondly, today's inequality discussion should include a focus on group inequality which is until now widely neglected in many dimensions of development.

This is where her concept of *Horizontal Inequality* ties in: Whereas *Vertical Inequality* captures inequality between individuals, *Horizontal Inequality* is defined as: "Inequalities among culturally defined groups" (Stewart, 2010a, p.1). She points out that Horizontal Inequalities are multidimensional, including social, political and economic features which contain further sub-dimensions. Stewart (2010) claims that while individual households often have no other choice than withstanding unequal distribution patterns, inequality that is shared among many people is likely to lead to a strong identity formation that is driven by the mutual perception of injustice. Historical examples have demonstrated that this mentioned group identity can assume alarming proportions that result in the insurgency of the oppressed group which can even lead to violent conflicts or civil wars (Brown & Langer, 2010). According to the scholars researching on this concept, the analysis of *Horizontal Inequality* shall be particularly expanded in countries with high shares of ethnic minorities as well as high inequality pattern.

Historically, Latin America has been considered to be one of the most unequal regions in the world. Mexico is no exception as it is home to one of the richest persons in the world, while a large share of its population lives in extreme poverty (Coady & Dizioli, 2017, p.9). Compared to other Member Nations of the Organization for Economic Co-operation and Development (OECD), Mexico – as one out of two Latin American member countries[1] – is the most unequal member state, measured by a GINI of 43.4 in 2016 (World Bank, 2019). Despite Mexico's comparably low inequality performance until today, many scholars highlight the significant reduction of income inequality in Mexico and generally Latin America since the late 2000s (Puyana, 2015; 2018; Coady & Dizioli, 2017, p.9; Campos, Esquivel & Lustig, 2012).

Whereas extensive work on Mexico's *Vertical Inequality* patterns has been done during the last decades, this is not the case for *Horizontal Inequality*. Poverty and social deprivation are common characteristics that are shared among the 6.7 million indigenous people living in mostly rural Mexico (Juárez-Ramírez et al., 2014). Compared to other Latin American countries, Mexico has a relatively high share of indigenous population which is marked by their oppression throughout history (Puyana, 2015). The example of the 1994 indigenous riots – globally known as the Zapatista Movement – and their ongoing manifestations ever since in Mexico's Southern State Chiapas show that group-based inequality is a highly relevant topic for the country. In this regard, scholars dealing with the HI concept claim that a country's overall inequality patterns can hardly be improved if *Horizontal Inequality* is existent but not

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[1] Further Member Country: Chile; Colombia and Costa Rica are in the process of accession (OECD, 2019a)

being tackled: "It is hard if not impossible to reduce the Gini coefficient of overall income concentration without first tackling horizontal inequality." (Puyana, 2018, p.51).

1.2 Research Questions

Considering this context, this study aims at connecting the dots between Mexico's high inequality and its large share of indigenous population. Until today, extensive work has been done on the interplay between inequality and development while at the same time not much investigation has been devoted to the linkages between ethnicity and inequality (Alesina et al., 2012). This indicates a clear literature gap which, regarding Alesina et al. (2012) shall be closed through within-country approaches as they provide a more accurate effect of ethnicity on inequality. Considering the different development paths, demographic composition as well as the ethnic distribution of Mexico's regions, this thesis analyses *Horizontal Inequality* patterns on a national and furthermore on a state-specific level. Through the 1994 riots, Chiapas, Mexico's poorest and widely-indigenous state arose global attention as the Mexican government failed to equalize the circumstances of indigenous and non-indigenous people. These conditions and this specific historical event make the state of Chiapas an interesting point of departure for research on *Horizontal Inequality* within Mexico.

Hence the purpose of this thesis is to elaborate on whether or not *Horizontal Inequality* has decreased in Chiapas since the 1994 Zapatista Movement. Considering the promises for greater equality on behalf of the Mexican government, this study further includes a comparison analysis of Chiapas' *Horizontal Inequality* patterns with the Mexican average.

Consequently, the Research Questions are:

1. *How do Chiapas' 2010 Horizontal Inequality patterns look like?*
2. *Compared to Mexico's average Horizontal Inequality patterns, how does Chiapas perform?*
3. *Has the poverty situation for Chiapas' indigenous population improved after the 1990s?*

1.3 Research Design and Outline of the Thesis

This Mixed-Method Thesis will make use of the 'Sequential Transformative Theory' (Creswell, 2014, p.44). This design has only emerged in recent years and is characterized by the theoretical framework in which the analysis is embedded. Different to other Mixed-Method study outlines, the transformative design is seen as "[...] lense for looking at a problem recognizing the non-

neutrality of knowledge, the pervasive influence of human interests, and issues such as power and social relationships." (Creswell, 2014, p.110). This design is commonly used to relate to a marginalized or underrepresented community who faces discrimination, for instance, ethnic minorities or the group of women. Typically, studies of this design, and so it is the case in this thesis, lead to conclusions that call for change (Creswell, 2014, p.108; Mertens, 2009, p. 5). Similar to the Exploratory Sequential Mixed-Method designs, the Transformative design comprises qualitative as well as quantitative analyses to provide a more complete understanding of the research problem. This is necessary considering the recentness of the *Horizontal Inequality* concept. Hence, the qualitative part can be understood as an extensive literature and background review on the concept and on the region of interest which further comprises literature that exists on *Horizontal Inequality* in Mexico. This further leads to the second, quantitative part which measures *Horizontal Inequality* indicators for Chiapas. As Figure 1 illustrates, this finally allows a comparison of the results leading to policy advice and a concluding call for change.

Figure 1: Sequential Transformative Design
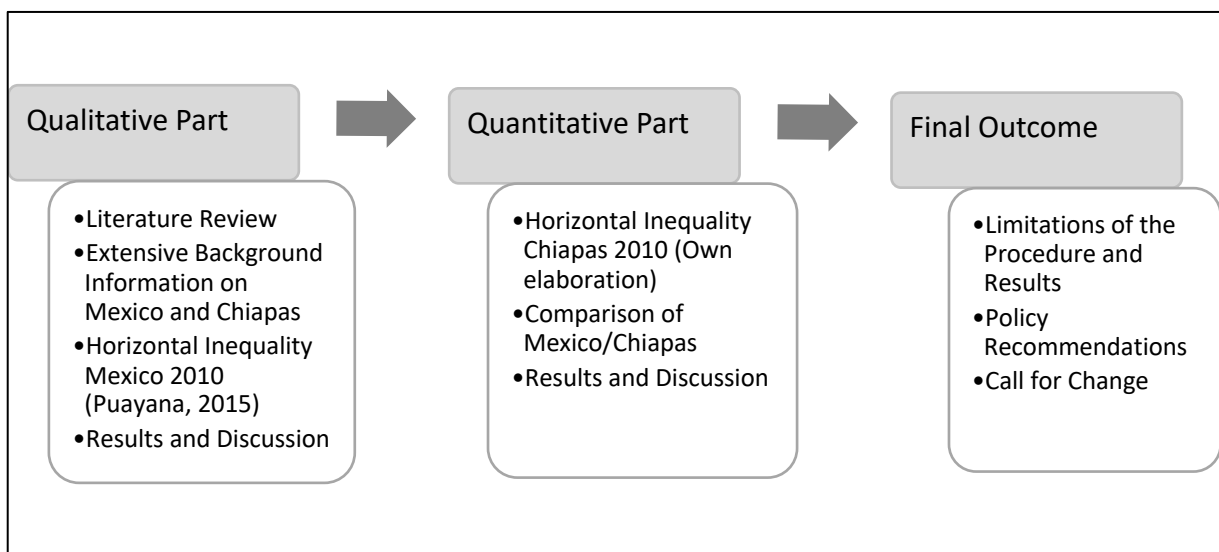
Source: Own elaboration, based on Creswell (2014).

The qualitative part is organized as follows: Section 2.1 provides a literature review about the concept of *Horizontal Inequality*. After defining the concept and revealing its importance, it will be shown how the concept developed over the last decades and who specifically promoted it. Section 2.1 elaborates on the diverse consequences that can arise when *Horizontal Inequality* is not being tackled. This ties into the final part of Section 2.1, the policy advice about how to tackle *Horizontal Inequality*.

After having presented the conceptual framework, Section 2.2 turns to the area of interest, Mexico. In order to attain a thorough understanding of this country, information on the country's economic background and with-it inequality patterns are given. As scholars of the *Horizontal Inequality* concept stress the importance of education, this Section further provides a short analysis of Mexico's educational system and its equality. This is being followed by an insight about Mexico's ethnic minorities and the difficulties they face. Lastly, these topics will be tied together by the analysis of *Horizontal Inequality* patterns of Mexico's indigenous population.

Section 2.3 dives deeper into the more focused area of interest: The state of Chiapas. Similar to Section 2.2, it gives an insight into the economic background of the state as well as its indigenous population. The discussion is followed by an elaboration of the 1994 events which specifically characterize the indigenous population of Chiapas. Lastly, Section 2.3 terminates with an analysis of the research that has been devoted so far to *Horizontal Inequality* in Chiapas.

This qualitative elaboration of *Horizontal Inequality* of Mexico and Chiapas then ties into the quantitative part (3) that aims to explore *Horizontal Inequality* in Chiapas thoroughly.

This second, quantitative part is organized as follows: Firstly, it explains the methodology and procedure for calculating *Horizontal Inequality* in Chiapas (3.1). It hereby elaborates on the inequality grouping process, the economic and social deprivation indicators that will be used in order to identify *Horizontal Inequality* and the cross-tabulating procedure of the variables. Section 3.2 then provides more information about the different datasets and variables used in this thesis. This leads to the results of Chiapas' *Horizontal Inequality* that will be presented and discussed (3.3). In the following Section, 3.4, these results will be compared to 1) Chiapas' *Horizontal Inequality* patterns since 1990 and to 2) Mexico's average *Horizontal Inequality* in 2010.

Upon finalization of the analysis of this thesis, Section 4 proceeds with the limitations of this study before providing policy advice (5). Finally, in Section 6, a conclusion will be drawn.

2   Qualitative Analysis

2.1   The Concept of Horizontal Inequality

2.1.1   Definition and Importance

Horizontal inequality (*HI*) is defined as "systematic inequalities between culturally formed groups" (Stewart, 2002, p. 1). Unlike *Vertical Inequality* (*VI*) wh*ich* mainly focuses on inequalities of income between individuals*, HI* emphasizes on group patterns and their inequality in terms of income as well as lacking opportunities and social deprivation (Stewart, 2002). Concretely, *HI* comprises the four dimensions: (1) cultural, (2) political, (3) social, and (4) economic dimensions that contain further sub-elements (Stewart & Langer, 2008; 2013; Slesnick, 1989; Puyana, 2015; 2018). The different dimensions and their respective sub-elements imply a certain broadness as well as complexity. Therefore, and different from *VI*, neither the roots, the appearance nor the eradication of *HI* can be reduced to one single feature, such as income. Thus, policy action to decrease *HI* cannot be limited to resource transfers that try to achieve income equality (Puyana, 2018). Slesnik claims that "ʻ[t]he principle of horizontal equity calls for the equal treatment of households that are equally situated." (Slesnik, p. 481) The attention, therefore, needs to shift towards groups that have similar income levels but still face inequality due to discrimination. Disadvantageous economic, social and political circumstances as well as less access and opportunities are often the result of discrimination.

While a certain degree of income inequality is sometimes seen as positive in regard to economic productivity, inequalities arising from lacking access and discrimination are seen as less justifiable and perceived as unjust (Slesnik, p. 481). In the *HI* debate, Brown and Langer (2010) claim that the perception of injustice is likely to trigger a strong identity formation among the group members. According to the authors, this reveals a major difference to individual inequality as the group identity has the strength to activate movements aiming to resist the oppressing powers and to eradicate this injustice (Brown & Langer, 2010; Stewart, 2002).

Within the concept of *HI*, groups are characterized by certain shared characteristics, for instance, religion or ethnicity. Generally, group identification can be assessed by any factor that creates solidarity, such as gender, sexual orientation, regional origin or even occupation (Puyana, 2018). In this context, Puyana (2018) claims that the membership of a certain group is often not the result of an entirely voluntary nor individual choice. The degree of discrimination certain groups suffer depends on the individual context and varies between

countries. However, Puyana (2018) stresses that the more fragmented a society is, the harder it is to overcome the group-based discrimination and its after-effects.

2.1.2 The Concept's Development and Promoting Scholars

The sky-rocketing interest in the general topic of inequality of the last decades has triggered a further focus on different types of inequality and their consequences. Whereas *VI* has long been a major topic in the International Development community and policy-making in general, the concept of *HI* is relatively recent. Hand in hand with its recentness, many authors in this field claim that still too little attention is being payed to group-based inequalities and therefore call for both, governmental action and further research.

One of these authors is Frances Stewart, Professor Emeritus and Director of the Centre for Research on Inequality, Human Security and Ethnicity (CRISE) at Oxford University. In the field of development economics, the term *HI* is mostly associated with her as she brought the concept to the fore at around the change of the millennium. Stewart argues that within the International Development community, the tremendous impact of *HI* on the group members itself but also on the rest of the society is still not being sufficiently acknowledged.
Stewart's 1980s and 1990s research on inequality and the roots of conflict brought her to the elaboration of the *HI* concept. During the last two decades, she worked on various aggregate *HI* studies and specific case studies. Her aggregate studies show general trends and consequences of *HI* which are applied to a wide range of different country settings (Stewart, 2010; Langer & Stewart, 2013; Stewart, Brown & Langer, 2008). In these studies, she works with her self-elaborated group inequality measurements of GroupGini, GroupTheil, and GroupCovariance. These three mathematical formulas provide one alternative on how to identify the degree of *HI* (Mancini, Stewart & Brown, 2008) which has been used and also expanded by further scholars over time. Her policy advice centers in decreasing social and economic deprivation while simultaneously increasing the group's access to social, economic and political features (Cornia & Stewart, 2014, p.124; Stewart, 2010b). Stewart's devotion to aggregate studies, mainly in the first decade of this century, shifted towards more country-specific *HI* case studies during the last decade (Stewart, 2010b; Langer, Mustapha & Stewart, 2007; Langer & Stewart, 2015).

Her analyses of short country case studies have been further expanded by scholars who thoroughly focus on the *HI* patterns of one specific country as for instance the recent work of Leivas and dos Santos (2018) on Brazil or McDoom et al. (2018) on the Philippines. Country

studies allow to detailly analyze historical events which show how group-based inequalities have led to riots against local and even national governments.

Regarding the region of interest of this thesis, Mexico and specifically Chiapas, the contribution of the two authors, Alicia Puyana and Frances Stewart has been especially important. Alicia Puyana, Colombian economist and investigating Professor at the Latin American Faculty of Social Science in Mexico[2] (FLACSO) thoroughly analyzed *HI* in Mexico, a study that was published in 2015 by the United Nation's Economic Commission for Latin America and the Caribbean (ECLAC). Her study includes further comparisons to *HI* in Colombia, Chile, and Peru and has been updated with the most recent census data in 2018. More region-specific but with a less thorough analysis, Stewart mentioned the importance of Chiapas more than 15 years ago by devoting the state one out of nine short case studies in her (2002) paper 'Horizontal Inequality: A neglected dimension of development'. Both studies will be elaborated in an individual section at a later stage of this thesis.

2.1.3   The Consequences of Horizontal Inequality

Apart from economic and social deprivation, the concept of *HI* further criticizes the predominance of restricted access and lacking opportunities (Stewart, 2005). The degree and sort of deprivation and lacking access can vary widely between country contexts. However, for many indigenous communities, it includes a disadvantageous distribution of land and restricted access to education. It is commonly known that most ethnic minorities worldwide suffer from these two inequality types, although they are considered as relevant topics in the International Development Community. For instance, fair and equally accessible education has been declared as a Universal Human Right in Article 26. Even in the Agenda 2030 for Sustainable Development, SDG 4 demands: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". Compared to the previous Millennium Development Goals (MDG) on education, the current goal focusses especially on the equity aspect in "learning opportunities" (UNESCO Institute for Statistics, 2017).

Besides disadvantages on the social sphere, lacking opportunities and restricted access might further give the impression of having no say and being under-represented in the political sphere (Stewart, 2005). Concretely, Stewart (2010) claims that the exclusion and the inheritance of the previous generation's social network might hinder discriminated individuals of developing a social network that would benefit their future professional and personal pathway. In terms of

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[2] Original: Faculdad Latinoamericana de Ciencias Socials sede México

the economic sphere, Stewart, Brown, and Mancini (2005) claim that lower economic outcomes of certain groups, often lead to highly unequal opportunities that can persist over decades. Regardless of the sphere, Puyana (2015) argues that if *HI* is not tackled, it might lead to a vicious circle which is hardly escapable for its group members.

Apart from individual disadvantageous for members of certain groups, the failure of reducing *HI* can have severe consequences for the whole society. Various scholars (Stewart et al., 2010; Stewart 2002; McDoom et al., 2018; Schaefer, 2003) hereby draw the attention to two major consequences: (1) A higher potential for conflict and (2) economic inefficiency.

Regarding Langer and Stewart (2013), it is a logical result that shared feelings of grievance due to severe socio-economic inequality of many people further triggers political mobilization. For the region of Latin America, this is confirmed by ECLAC: They identify a linkage between injustice and conflict potential mentioning that "[t]his perpetuation of inequality, perceived as unjust by the groups that suffer from it, gives rise to social conflicts that have on occasion turned into the kinds of confrontations and even warfare" (Puyana, 2018, p.50). The emphasis hereby lies on the aspect of 'groups'. While scholars have disproved the consistent relationship between *VI* and violent conflicts (Collier, 1999; Fearon & Laitin, 2003; Auvinen & Nafziger, 1999), research on the relationship between *HI* and violent conflict has revealed a significant evidence (Stewart, 2013; Mancini, 2008; Østby, 2003; Gurr et al., 1997). The probability of conflict further increases when a group suffers from the two dimensions of socio-economic and political inequalities simultaneously (Langer & Stewart, 2013).

As violent conflict has highly devastating consequences for the whole society, it reflects one of the most important concerns of scholars working on *HI* patterns (Stewart, 2000; Stewart, Brown & Langer, 2008). In this regard, research has provided different examples of group oppression that resulted in unrest which even has the potential to trigger civil war onset (Cedermann, Weidmann & Gleditsch, 2011). Sambanis (2001) ties into this discussion, claiming that the majority of all civil wars since 1945 have been 'ethnic civil wars' and Stewart & Brown (2007) see the proportion of general conflicts that are considered as 'ethnic conflicts' constantly increasing.

The aims that protesting groups pursue during violent conflicts can be multiple: Puyana (2015) claims that the main motivation behind an upraise is a significant change in the status of the group. Other scholars stress the desire for more security and economic advancement (Guichaoua, 2011, p.77; Langer & Stewart, 2013).

Apart from the likeliness of (1) conflict, many scholars emphasize the negative effect *HI* has for the (2) efficiency of the economy (Stewart et al., 2010; Stewart 2002; McDoom et al., 2018; Easterly, 2002; Schaefer, 2003). This ties into the general discussion of how equity and pro-poor growth affect an economy (Rodrik, 2014). Bertelli and Macours (2014) claim that restrictive access to labor markets leads to inefficient use of labor and further inequalities. Especially when a large share of the total population faces restricted labor access, the efficiency loss can be significant. Depending on the country context, further economic inefficiencies resulting from *HI* can be market segmentation and inefficient land allocation which might further fuel inequality (Bertelli & Macours, 2014).

2.1.4 Policy recommendations following the logic of Horizontal Inequality

While the main concerns of international donors focus on economic growth and poverty reduction, Langer and Stewart (2013) criticize the policies of the latter being carried out without any group differentiation. Although some attention has been paid to *HI* in certain analyses of conflict-prone situations (DFID, 2005; World Bank, 2005), horizontal inequalities are not included in systematic reporting and only rarely influence policies on a larger scale than regional dimensions (Langer, Stewart & Venugopal, 2012). Considering that social stability is a precondition for economic growth and poverty reduction, Langer and Stewart (2013) argue that the importance of conflict-preventing mechanisms becomes even more evident. However, besides the emphasis on conflict prevention, decreasing *HI* is also desirable in terms of well-being, justice, and efficiency. Hence, triggering group-based inequalities in the economic, social, political and cultural dimension should not only be the aim of post-conflict countries but it should rather be on the agenda of development policies in general (Langer & Stewart, 2013).

In this regard, Langer and Stewart (2013) suggest governments to simultaneously tackle *HI* through a direct, indirect, and integrationist approach. The direct policy approach is considered to be the most effective as it targets discriminated groups directly and without extensive time advance. Concretely, this can refer to the allocation of jobs or educational access for instance. However, this approach risks increasing the salience of identity differences and antagonism of those who do not benefit from the policy. The second, indirect approach implies general policies that aim to reduce long-term *HI* consequences. These can include, for instance, anti-discrimination policies, progressive taxation or regional expenditure policies of the decentralization of power. Although they might be less effective than direct approaches in reducing *HI*, their risk of increasing identity differences is much lower. Lastly, the third approach which Langer and Stewart (2013) label as 'integrationist' rather seeks to reduce the

salience of group boundaries than tackling *HI* as such. This approach includes, for instance, the promotion of a nation's identity or shared political and economic activities across different groups (Stewart, Brown & Langer, 2008). However, this approach needs to be carried out carefully as it often conceals inequality rather than reducing it. Nevertheless, it has a high potential of reducing group boundaries and therefore presents an important complement to the direct approach which often enhances the sense of group differences (Langer & Stewart, 2013).

In order to identify the degree of *HI* in Mexico, and specifically in Chiapas which allows to finally elaborate on the necessary policy advice for this area, first, an insight into the two areas will be given.

2.2   Mexico

2.2.1   Economic Background

Mexico is Latin America's most northern country, bordering the United States to the North and Guatemala and Belize to the South (Figure 2). As of 2019, Mexico has 32 states and 2.448 municipalities which are inhabited by around 125 Million people (Statista, 2019).

Figure 2: Mexico's Geographic Position and its 32 States

Source: Own elaboration, based on descargalmapas.net (2019).

As the 'World Bank – Mexico Overview' indicates, this makes it the tenth most populated country worldwide and the most populated Spanish speaking country. After Brazil, it is the second largest economy in Latin America (Mexico Overview, 2018). Due to its growing GDP, diversified industry and geostrategic location, it is one of Latin America's most promising economies. Jointly with low labor wages, this attracted many foreign investors in the last decades which especially increased economic development in Mexico´s North and Center (Stewart, Brown & Mancini, 2005). The closeness to the United States (US), as well as the NAFTA Free Trade Agreement[3] explain the high trade patterns between Mexico, the US, and Canada. In 2016, Mexico's trade, expressed as imports and exports, was 78% of the country's GDP of which 80% was directed to the United States (Amadeo, 2019).

Industry and Services are the two most important sectors for Mexico's economy, accounting for around one third and nearly two-thirds of the country's GDP respectively (World Bank, 2019). While the automobile industry is Mexico's predominant industry, the service sector is dominated by tourism and financial services. Apart from Mexico's industry and service sector, agriculture is still an important source of employment especially in the rural and remote areas of the country. However, its contribution to the national share of GDP has constantly decreased (Mexico Economic Structure, 2010).

Focusing on the time period since 1990, one of Mexico's most severe economic crises happened in 1995 which was triggered by the devaluation of the Mexican peso (Mexico Economic Structure, 2010). It caused high inflation of around 35% in 1995 and 1996 and one million job losses in the following years (Castillo Fernández & Arzate Salgado, 2016). After experiencing significant economic growth since the turn of the millennium, Mexico was hit hard again by the global economic crisis in 2008 (Mexico Economic Structure, 2010).

During the last decade, GDP growth has been high and relatively constant. The government's ambitious structural reforms that triggered productivity growth and sound macroeconomic policies have ensured Mexico's resilience regarding challenging global conditions (OECD, 2017). But even though growth is strong in Mexico, Graph 1 shows that disparities within the country are still persisting and even increasing across the country's states (OECD, 2017).

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[3] On December 8, 1993, the NAFTA Free Trade Agreement between the three countries Mexico, the United States of America and Canada has been signed, on January 1st, 1994 it went into effect ((Canada & NAFTA, 2019)

Graph 2: Increasing Economic Growth Disparities across Mexican States
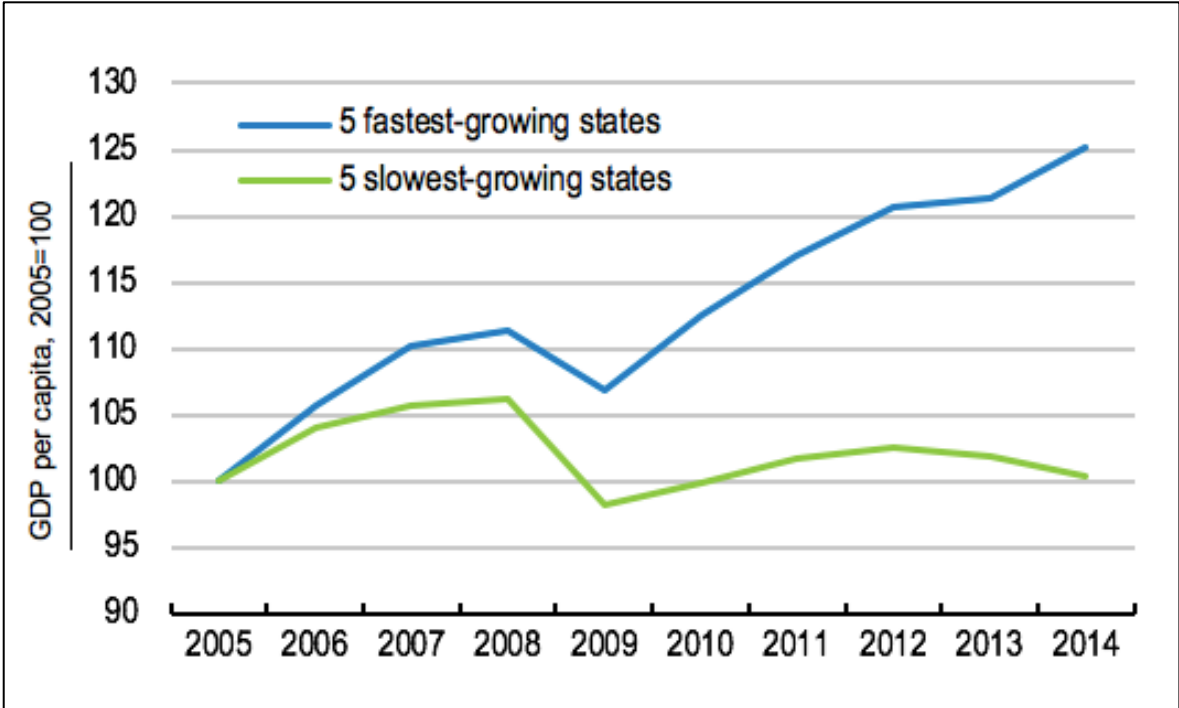
Source: Own elaboration, based on (OECD, 2017).

2.2.2   Inequality in Mexico

Looking at the Gini coefficient, one can observe that Mexico, being one out of two Latin American member states in the OECD, is the most unequal state (OECD 2015). Even within Latin America, Mexico performs poorly in terms of its income inequality (Graph 2).

As Graph 2 indicates and as being confirmed by the 2017 OECD Economic Survey, the country's high economic growth is not inclusive enough to achieve better living conditions for the majority of Mexican families. Especially in the South of Mexico, the low-productive agricultural sector makes this region drag behind the modern and high-productive regions in the North and Centre of the country (Aguayo Téllez, 2004). Many scholars claim that the agricultural sector is the losing sector of the NAFTA Free Trade Agreement, as it pushed the country's industry while lowering prices for agricultural goods which led to widening regional differences (Puyana, 2015; Schuster, 2009; Aguayo Téllez, 2004; OECD, 2017).

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Graph 2: Mexico's Inequality Pattern compared to other Latin American countries, 2017
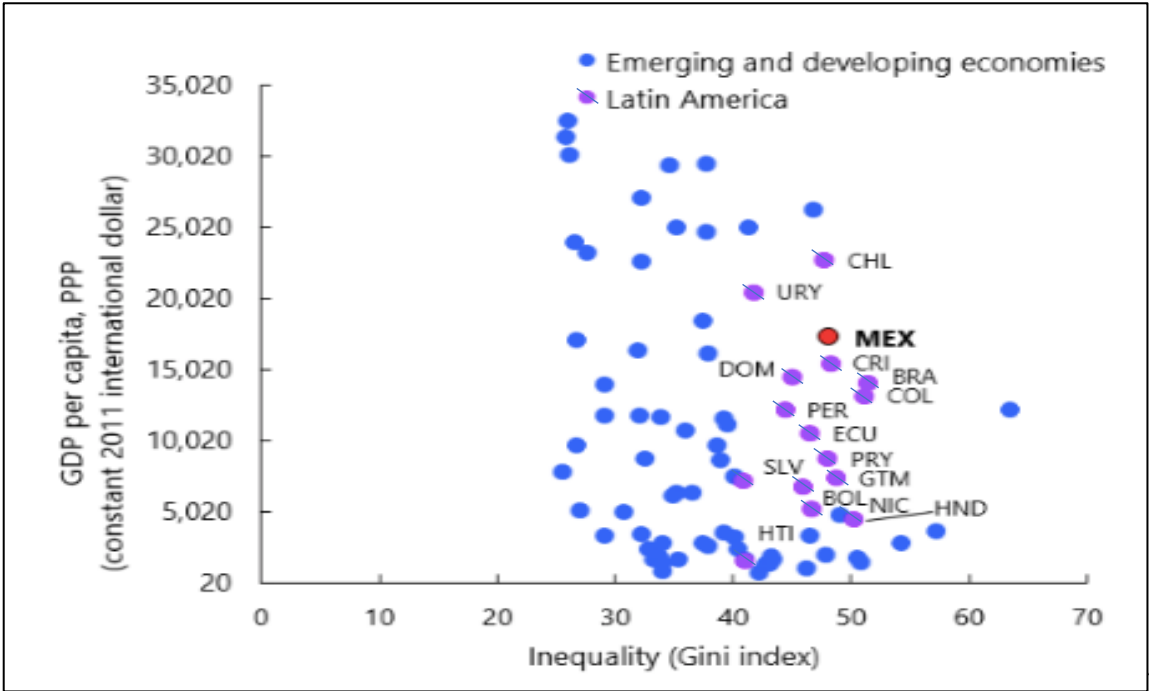
Source: World Bank Indicators Database (2019).

Lopez-Acevedo (2006) claims that education is by far the variable that accounts for the largest share of income inequality. Additionally, Ferreira (1999) states that within the inequality debate of Mexico, the focus should not solely be placed on income disparities but especially on the factor of education. He further argues that schooling inequality can lead to a self-reinforcing vicious cycle that has the strength of perpetuating inequality throughout generations. This is why the next section presents the main characteristics of Mexico´s educational system and its impact on inequality patterns.

2.2.3   Mexico's Educational System and its Inclusiveness

Since the 1970s, Mexico's educational attainment has steadily increased and finally caught up with international standards by 1990 (Lopez-Acevedo, 2006). Between 1970 and 2000, the total enrolment rate increased more than six-fold from 290,000 to 1,962,000 whereas only the last decade of the twentieth century denotes a 50 percent increase in tertiary enrolments (Magaziner, 2016).

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[4] BRA= Brazil; BOL= Bolivia; CHL= Chile; COL= Colombia; CRI= Costa Rica; DOM= Dominican Republic; ECU= Ecuador; GTM= Guatemala; HND= Honduras; HTI= Haiti; NIC= Nicaragua; PRY= Paraguay; PER= Peru; MEX= Mexico; SLV= El Salvador; and URY= Uruguay

These significant improvements might be the result of establishing the compulsory, secular basic and upper secondary education in Mexico's Constitution which is provided by the state at no charge (Fernández Martinez, 2018). Even though the constitution focuses on the quality, equity, and inclusion of the country's educational system, Mexico still ranks last in the overall educational performance among all OECD countries (Lakhani, 2017). In comparison, Mexico has one of the lowest shares (53%) of 15-to-19-year-olds enrolled in education (OECD, 2014). The '2018 OECD Educational Evaluation' mentions some improvements in terms of Mexican educational attainment between 2007 and 2017, however, it stresses the still persisting, large gap compared to other OECD countries (OECD 2018).

A further problem is the strong centralization of Mexico's educational system which is not able to respond to the different regional conditions that require an individual assessment. Hence the Mexican Think Tank 'México Evalúa' criticizes that the 1992 'Decentralization Reform' of Mexico's basic education was mostly an administrative act and did not diminish the power of centralized decision-makers in practice (México Evalúa; 2014). Therefore schools, especially in remote areas are often confronted with inefficient "one-size-fits-all" policies that are not able to meet the distinct requirements of teaching in rural areas (Scott et al., 2018, p.123).

A further claim regarding Mexico's educational inclusiveness is that the remarkable improvements in terms of increased enrolment in tertiary education over the last decades did not reach the lowest social class of the country (Varela-Petito, 2011, p.64). In comparison to other OECD member states and generally other Latin American countries, the share of students enrolled in higher education is still low in Mexico (Varela-Petito, 2011, p.63). Receiving high-quality education is a question of the family's location of residence. Especially rural areas suffer from poorly developed infrastructure, low educational quality and inefficient school investments (Scott et al., 2018, p.121). This generally decreases the attractiveness of remote regions which makes the best teachers move to the more attractive regions, creating a cycle of further quality downturn (Scott et al., 2018, p.15).

Within the discussion of rural-urban differences, the Programme For International Student Assessment (PISA) analyzed in 2015 that urban and private schools in Mexico tend to have better science-specific resources than rural and public schools. The resulting gap in Mexico is the largest among all OECD countries (OECD, 2016). As attending a private school is a matter of income in Mexico (Scott et al., 2018, p.49), the equity aspect of Mexico's educational system becomes challenged.

One specific group that significantly suffers from unequal educational possibilities due to the remoteness of their residence location and generally lower incomes is Mexico's indigenous

population (Lakhani, 2017; Scott, 2018, p.63; México Evalúa, 2014) which will be focused on in the following section.

2.2.4   Mexico's Indigenous Population and their Inequality Pattern

In Mexico, about 17 million people speak an indigenous language – commonly used as an indicator to identify a country's indigenous population (Stewart, 2002; Puyana, 2015; 2018). This makes it the country with the largest population of indigenous people in the Americas (INEGI, 2015). According to the sociodemographic study (2015)[5] of Mexico's National Institute of Statistics and Geography (INEGI)[6], this represents more than five percent of the country's total population (Lakhani, 2017; Alvarez-Cedillo, 2016).

Mexico-wide, the Nahuas who are descendants of the Aztecs or Mexicas, the Mayas of the Yucatán Peninsula, the Tzeltal–Tzotzil, also known as Mayas from Chiapas, and the Zapotecs and Mixtecs of Oaxaca are the indigenous communities with the largest population (Pérez Velasco Pavón, 2014). Jointly they comprise about 70% of Mexico's total indigenous population (Pérez Velasco Pavón, 2014).

Apart from commonly known group names, there is no official or widely accepted definition of indigeneity. However, Pérez Velasco Payón (2014) stresses on certain characteristics that indigenous people in Mexico share and have further in common with more ethnic minorities all over Latin America: Firstly, they share a painful history of colonialism in which many indigenous societies were forced to defend their land or move to more isolated and mountainous areas in order to maintain their agricultural production for subsistence matters. Secondly, Mexican indigenous societies are characterized by having constructed their own set of institutions and culture, including the preference of non-dominant social groups over hierarchical models. This reinforced their desire for self-sufficiency and self-employment which further strengthened the ties to their land. Lastly, Pérez Velasco Payón (2014) states that throughout history, the income of Mexico's indigenous people was constantly found among the lowest economic levels. He claims that this is closely related to the generally low productivity of the agricultural sector which employs 45% of Mexico's economically active indigenous population (Pérez Velasco Pavón, 2014). High poverty and marginalization rates are the direct consequence: According to The National Council for the Evaluation of Social Development Policy (CONEVAL)[7] and as demonstrated in Graph 3, 40.2% of Mexico's indigenous language

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[5] Original: Panorama sociodemográfico de México
[6] Original: Instituto Nacional de Estadística y Geografía
[7] Original: EL Consejo Nacional de Evaluación de la Política de Desarrollo Social

speakers live in extreme poverty. This is almost four times the national average rate (10.4%). Consequently, a smaller share of indigenous people (3.2%) enjoys the privilege of being neither poor nor vulnerable compared to the national counterpart (19.3%) (CONEVAL, 2010).

Graph 3: Degree of Poverty – National Average/Indigenous Population Comparison, 2010 (Population Distribution in Percentage)
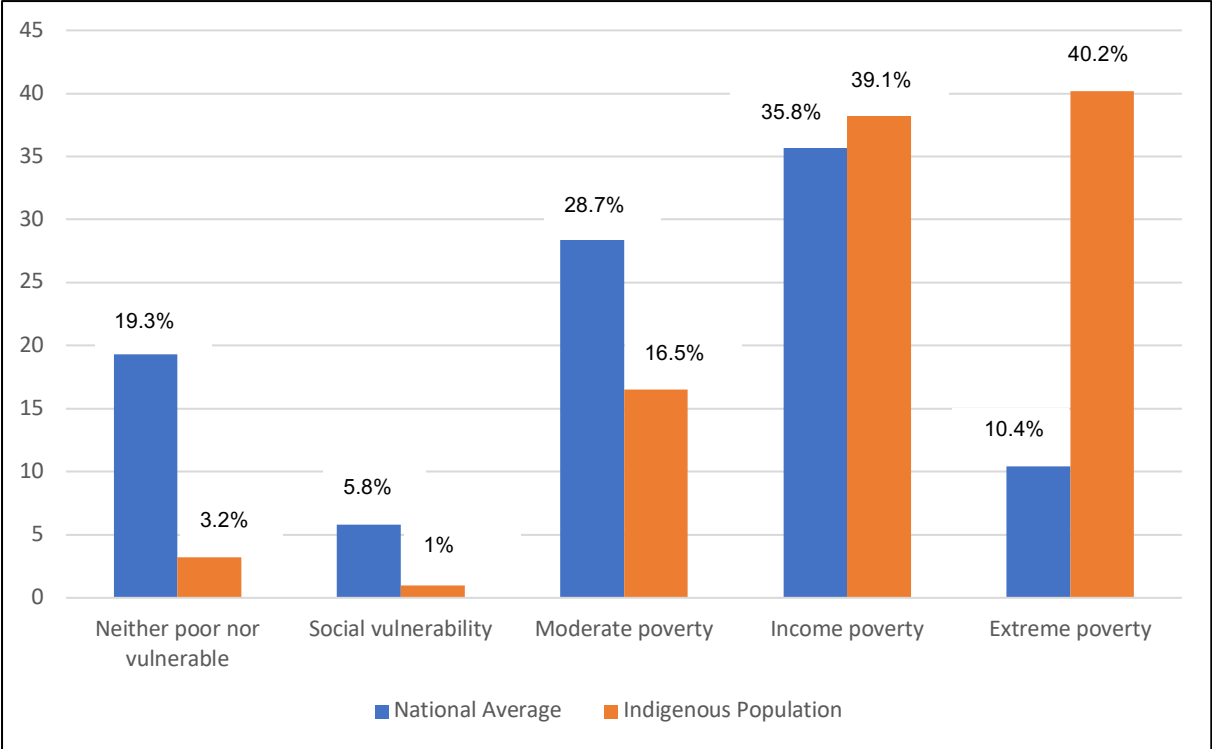
Source: Own elaboration, based on CONEVAL (2010).

In their 2015 study 'Indigenous Latin America in the Twenty-First Century', the World Bank estimated that being born to indigenous parents increases the probability of being raised in a poor household by 11%. This contributes to a poverty trap which further hampers the development of indigenous children (World Bank Group, 2015). For the specific case of Mexico, the 'Economic Marginalization Index' states that 93%, so nearly all indigenous people, suffer from a high degree of marginalization while this is only the case for 47% of the non-indigenous population (Pérez Velasco Pavón, 2014).

Apart from economic indicators, Mexico's indigenous societies face further social deprivation, for instance in regard to education (Lakhani, 2017; México Evalúa, 2014). As mentioned in *3.2.5 'Mexico's Educational System and its Inclusiveness'*, especially families with low incomes and homes in remote areas face significantly worse educational possibilities for their children which is the case for the Mexican indigenous population: Apart from the higher

likeliness of facing extreme poverty, the World Bank (2015) estimates that one out of two indigenous persons in Mexico lives in rural areas.

Although the general improvements in Mexico's educational system and test results also include the 1.3 million indigenous schoolchildren, they still suffer from less access and lower educational quality which has a negative effect on the indigenous/non-indigenous performance gap (Lakhani, 2017). Evidence shows that performance gaps in reading have increased for students whose language spoken at home is different from the language of assessment from 71 score points in 2000 to 95 in 2009 (OECD, 2016). 80% of all children who attend an indigenous school fall below the basic educational benchmark which represents one of the lowest achievement levels among the OECD member countries (OECD, 2016). The 2017 'OECD Economic Survey Mexico' further rises attention to the one-quarter of all Mexican indigenous 15-year-olds who cannot read and write, representing the fourfold illiteracy rate of the Mexican average (OECD, 2017). As generally stated for rural areas, México Evalúa claims that a lack of infrastructure and equipment is considered to be one of the main causes for the lower school performance of indigenous school children. For instance, when it comes to computer classrooms and other digital facilities, only 5% of all schools in rural and indigenous areas account for this equipment (México Evalúa, 2014). The national projects that foresee the incorporation of information and communication technologies in the school curriculum have been significantly underfunded in those states with a higher share of indigeneity (Scott et al., 2018, p.63).

Despite the preference of living a rural, self-sustained life (Pérez Velasco Pavón, 2014), many scholars agree on discrimination being a main reason for the systematic exclusion of the indigenous population from economic, political and social development (Puyana 2015; 2018; Stewart, 2002; Díaz-Cayeros, 2016).

2.2.5 Horizontal Inequality in Mexico

For the specific case of Mexico, Puyana (2015) demonstrates in her 'Horizontal inequality and ethnic discrimination in four Latin American countries'[8] study the existing correlation between indigeneity and poverty as well as further social and economic deprivation factors. In the following, her results will be presented and serve as a basis for comparison with Chiapas' *HI* results that will be presented in Section 3.4.1. 'Comparison of Horizontal Inequality patterns in Chiapas and Mexico, 2010'.

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[8] Original: Desigualdad horizontal y discriminación étnica en cuatro países latinoamericanos

Puyana (2015) sees the roots of *HI* patterns of indigenous communities in the conquest of the Latin American continent. The oppression and displacement of the many Latin American indigenous communities have been consolidated in Colonial time and further perpetuated during the following Republic (Puyana, 2015). Hence, this long trace back in history strengthened the deep roots of discrimination and hierarchy systems in Latin American societies in which: "[…] the white and Mestizos enjoyed their civil privileges in the top while the indigenous population and African slaves were placed on the bottom of the pyramid."[9] (Antón et al., 2009, p.15). Throughout the years, ethnic discrimination was further consolidated due to the general denial of its existence which is characterized by a certain 'invisibility' of the indigenous population and ignorance of their dismissive treatment (Puyana, 2015).

Speaking an indigenous language is her key criterion for the indigenous/non-indigenous identification which is shared by many further scholars working in the field of *HI* (Stewart, 2002; Leivas & dos Santos, 2018; McDoom et al., 2018). However, different language aspects can be considered. While in Colombia statistical offices define their indigenous population by those whose mother tongue is an indigenous language, in Peru and Mexico it is defined by the indigenous language as the common language of usage of the 3-year-old and older population (Puyana, 2015).

To reveal the correlation between indigeneity and backwardness, Puyana first categorizes municipalities by their presence of indigenous language speakers (Table 1 and Table 2). Through a cross-tabulating procedure, she then matches the different municipality types to their degree of social backwardness (Table 3). The specific definition of all variables will be provided in Section 3.2 'Data'.

As defined by the National Institute for Indigenous People[10] (INPI), a municipality is considered an 'indigenous municipality' when its share of the indigenous population is 40% or higher (Serrano Carreto, México & UNDP, 2006). Hence Table 1 includes two indigenous municipality types (A and B) and three non-indigenous municipality types (C, D, and E). The findings of Table 2 show how many municipalities can be found in each municipality type when accounting for their share of indigeneity. Due to the low number of municipalities in type E, Puyana excludes this municipality type in the following calculations and analysis, resulting in a total amount of 2,424 municipalities.

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[9] Original: "Tanto en el período colonial como en los comienzos de la república, en las sociedades latinoamericanos se creó un Sistema de jerarquías sociales basadas en pirámides raciales, donde el blanco y el mestizo estaban arriba y gozaban de sus privilegios ciudadanos, mientras que abajo se situaban los indígenas y los esclavos africanus y sus descendientes." (Antón et al., 2009, p.15)

[10] Original: Instituto Nacional de los Pueblos Indígenas

Table 1: Grouping of Municipalities Regarding Their Degree of Indigeneity

A	Municipalities where the indigenous population is over 70% of the total.
B	Municipalities where the indigenous population is between 40% and 69% of the total.
C	Municipalities where the indigenous population is less than 40% of the total but exceeds 5,000 people.
D	Municipalities where the indigenous population is less than 40% of the total and is fewer than 5,000 people.
E	Municipalities with a scattered indigenous population or none.

Source: Puyana (2015), based on CDI/UNDP (2006).

Table 2: Municipality Division Regarding Their Degree of Indigeneity

Type of municipality	Number of munici-palities	Number of Inhabitants		Percentages		
		Indigenous population	Total population	Distribution of indigenous population by municipality type	Distribution of total population by municipality type	Indigenous population as percentage of total
A. Over 70% indigenous population	468	4,694,923	5,283,947	42.17	4.70	88.85
B. Between 40% and 69% indgenous population	156	1,805,799	3,330,132	16.22	2.96	54.23
C. Less than 40% indigenous population	239	3,644,105	59,706,935	32.73	53.15	6.10
D. Scattered indigenous population	1,561	987,735	43,975,087	8.87	39.15	2.25
E. No or very small indigenous population	32	0	40,437	0	0.04	0
Total	2,456	11,132,562	112,336,538	100	100	9.91

Source: Puyana (2015).

In her next step, she matches the information of each municipality in terms of their indigeneity share and their degree of social backwardness. The results of Table 3 reveal that indigenous municipalities are predominantly represented in the very high and high degree categories of social deprivation. At the same time, they hardly appear in the low and very low degree categories of social deprivation. The opposite scenario is the case for municipalities with low shares of indigenous population (type C and D). These are underrepresented in the high degrees

of social backwardness while having an over-proportioned weight in the degree categories of medium and low social backwardness. A clear pattern from top left to bottom right can be observed through the greying of the cells which demonstrates this 'over-representation'.

Table 3: Social deprivation in different municipality types, Mexico, 2010

	Degree of Social Deprivation					
	Very high	High	Medium	Low	Very low	Total
Type of Municipality	**A. Over 70% indigenous population**					
Observed number of municipalities	264	113	88	2	1	468
Type of Municipality	**B. Between 40% and 69% indigenous population**					
Observed number of municipalities	48	47	57	4	0	156
Type of Municipality	**C. Less than 40% indigenous population**					
Observed number of municipalities	8	32	67	40	92	239
Type of Municipality	**D. Scattered indigenous population or none**					
Observed number of municipalities	120	213	720	340	168	1561

Source: Own elaboration, based on Puyana (2015).

To give a more detailed insight into specific backwardness indicators, Puyana calculates the degree of poverty, specific social deprivation categories as well as the economic well-being of the municipality types A-D Mexico-wide for the year 2010. These results can be derived from Table 4. Firstly, they indicate the population share of each municipality type suffering from a certain deprivation pattern and secondly the ratio that puts the municipality groups into perspective to each other.

To begin with, the results demonstrate that more people living in indigenous municipalities (type A and B) suffer from poverty than in non-indigenous municipalities: While 84.2% and 77.6% of all people living in municipalities of type A and type B respectively suffer from poverty, it is only 63.8% in municipality type D. Surprisingly, the results reveal that fewer people in municipalities of type A suffer from extreme poverty. This is clearly contradicting as people living in municipalities of type A face worse circumstances in all other categories that would lead to a higher poverty level. Puyana mentions this contradiction and calls for further research to explain this specific dichotomy. It could be the outcome of a certain respondence bias which can generally be seen as a weakness of these result. This issue will be further addressed in Section 4 'Limitations'.

Apart from poverty, a significantly higher population share in municipality type A suffers from social deficits: 74.2% of all people living in municipalities of type A suffer from at least three

social deficits, while this only accounts for 40.6% of the population living in municipality type D, resulting in a D/A municipality ratio of 0.56. This ratio indicates that for every 100 people, suffering from three social deficits in municipalities of type A, this only applies to 56 people who live in municipalities of type D. When testing for the share of people suffering from at least one social deficit, the values for all municipality types are high, resulting in an indigenous/non-indigenous gap of only 0.91.

Puyana considers education as one of the most important social deprivation indicators and furthermore as a key component of Mexico's *HI*. In this regard, Table 4 indicates that four out of ten people living in municipality type A suffer from an educational gap. This number drops with the decrease of a municipality's share of indigeneity. Not less important is the wide gap she detects for access to health services: For every 100 non-indigenous persons, only 80 indigenous people had access to this right (D/A ratio: 0.8). She sees this lack closely related to the differences between the occupation patterns of the two groups, as health insurances are often tied to formal jobs in which indigenous people are less likely to be employed. In her analysis, Puyana mentions that there is no significant gap in terms of labor participation and unemployment when comparing the two groups. Still, the share of people with an income below the line of well-being is higher in municipalities with a larger share of the indigenous population. This gap further increases when the income below the minimum line of well-being is considered. Puyana (2015) sees this economic deprivation and higher likeliness of facing poverty closely related to the larger share of indigenous people being employed in the primary sector.

Table 4: Impact Indicators by Type of Municipality, Mexico, 2010 (In Percentages and Ratios)

Impact Indicator	Municipality Type				Ratios			
	A	B	C	D	A/A	B/A	C/A	D/A
Poverty State								
Population in the state of poverty	84.20	77.60	53.50	63.80	1	0.92	0.64	0.76
Population in the state of moderate poverty	47.00	35.70	15.60	18.70	1	0.76	0.33	0.40
Population in the state of extreme poverty	37.20	42.00	37.80	45.10	1	1.13	1.02	1.21
Social Deprivation								
Population with at least one social deficit	98.10	95.60	80.20	89.20	1	0.97	0.82	0.91
Population with at least three social deficits	74.20	62.20	36.00	40.60	1	0.84	0.49	0.55
Indicators of Social Deprivation								

Educational gap	40.20	34.10	22.60	28.50	1	0.85	0.56	0.71
No access to health services	41.20	36.70	33.00	33.10	1	0.89	0.80	0.80
No access to social security	89.50	83.00	66.40	76.20	1	0.93	0.74	0.85
Lack of quality and space in living facilities	79.70	70.90	33.30	40.00	1	0.89	0.42	0.50
Lack of basic services in living facilities	44.30	34.30	20.10	19.80	1	0.77	0.45	0.45
Lack of sufficient and healthy alimentation	35.20	32.60	27.50	26.40	1	0.93	0.78	0.75
Well-being								
Population with an income below the line of well-being	84.70	78.90	58.10	67.10	1	0.90	0.70	0.80
Population with an income below the line of minimum well-being	56.10	46.90	24.70	31.50	1	0.80	0.40	0.60

Source: Puyana (2015).

In order to detect a certain development between the different municipality types over time, Puyana compares their degrees of food, capability and asset poverty for the years 1990, 2000 and 2010 (Table 5). In line with the previous table, the results of Table 5 show that indigenous municipalities also face higher food, capability and asset poverty. Regarding their development patterns over time, Table 5 further reveals that the situation of indigenous poverty has significantly worsened in all three categories between 1990 and 2000. The share of people living in municipalities of Type A who suffer from food and capability poverty has increased by nearly 15% during this period. These patterns have also worsened in municipalities with lower shares of indigenous people but at a much lower degree. During the following period, between 2000 and 2010, poverty rates have decreased again for all municipality types. However, people living in municipalities with lower shares of indigenous population enjoyed larger improvements than those living in indigenous municipalities. While in municipality type A, the patterns of capability and asset poverty did not even drop back to their 1990 values, municipality types C and D enjoyed the lowest poverty levels in all three categories for the whole period. Consequently, over the 20-year-period, the situation has significantly improved for people living in municipalities with lower shares of indigenous population while for those living in municipalities of type A, it has only slightly improved in terms of food poverty and worsened regarding capability and asset poverty.

This stands in line with the increasing poverty gaps between municipalities of lower and higher shares of indigenous population which are indicated through the ratios in Table 5. While in 1990 the food poverty gap between municipality type A and D was 0.61, this number decreased to 0.53 by 2010, indicating a widening of the gap. Hence, in 2000, the population share suffering

from food poverty in municipality type A was nearly twice as high as in municipality type D. Besides food poverty, the D/A gap has also increased regarding the other two poverty types.

Table 5: The Development of Mexico's Poverty Gaps between 1990 and 2010 (Percentages and Ratios)

Type of municipality	Food Poverty			Capability Poverty			Asset Poverty		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
A. Over 70% indigenous population	53.60	69.70	52.70	62.40	76.00	63.00	80.80	87.80	84.00
B. Between 40% and 69% indigenous population	47.90	58.20	42.60	56.70	65.30	52.60	76.50	80.50	75.60
C. Less than 40% indigenous population	28.50	31.80	24.00	36.60	39.20	32.40	58.70	58.90	56.30
D. Scattered indigenous population	32.60	36.80	26.10	41.00	44.00	34.90	63.00	62.20	59.50
Ratios	1990	2000	2010	1990	2000	2010	1990	2000	2010
A/A	1	1	1	1	1	1	1	1	1
B/A	0.89	0.83	0.81	0.91	0.86	0.83	0.95	0.92	0.90
C/A	0.53	0.46	0.46	0.59	0.51	0.51	0.73	0.67	0.67
D/A	0.61	0.53	0.49	0.66	0.58	0.55	0.78	0.71	0.71

Source: Puyana (2015).

2.3 Chiapas

The 1994 Zapatista Movement in the Mexican State of Chiapas showed the severe consequences that group-based inequality of indigenous people can have. The conflict outbreak underlines the clear predominance of *HI* that the indigenous population has suffered for decades. This context reveals the relevance for further *HI* analysis on a municipality level.

After providing an insight into the economic and social background of Chiapas, a section about one of the state's key characteristics, its indigenous population with its significant inequality, follows. Consequently, this ties into the analysis of the riots in Chiapas in 1994 and the governmental projects in the after years. Finally, this chapter ends by elaborating on the research that has been done on the state's *HI*.

2.3.1 Chiapas' Economic Background

Out of 32 states, mountainous Chiapas is Mexico's most southern state, bordering Guatemala (Figure 3). Although it is Mexico's sixth most populated and ninth largest state in terms of its geographical area (Portal de Gobierno, 2019), it only accounts for 1.73% of Mexico's GDP (Enciclopedia de los Municipios y Delegaciones de México, 2016).

This does not only make it to one of the smallest contributors of the country's overall GDP composition (Portal de Gobierno, 2019) but also results in a comparably low GDP per capita for its inhabitants. As Graph 4 indicates, Chiapas ranks last in terms of its GDP per capita, only achieving around 40% of the country's average rate and not even one-seventh of Mexico's top performer state, Campeche.

Figure 3: The state of Chiapas

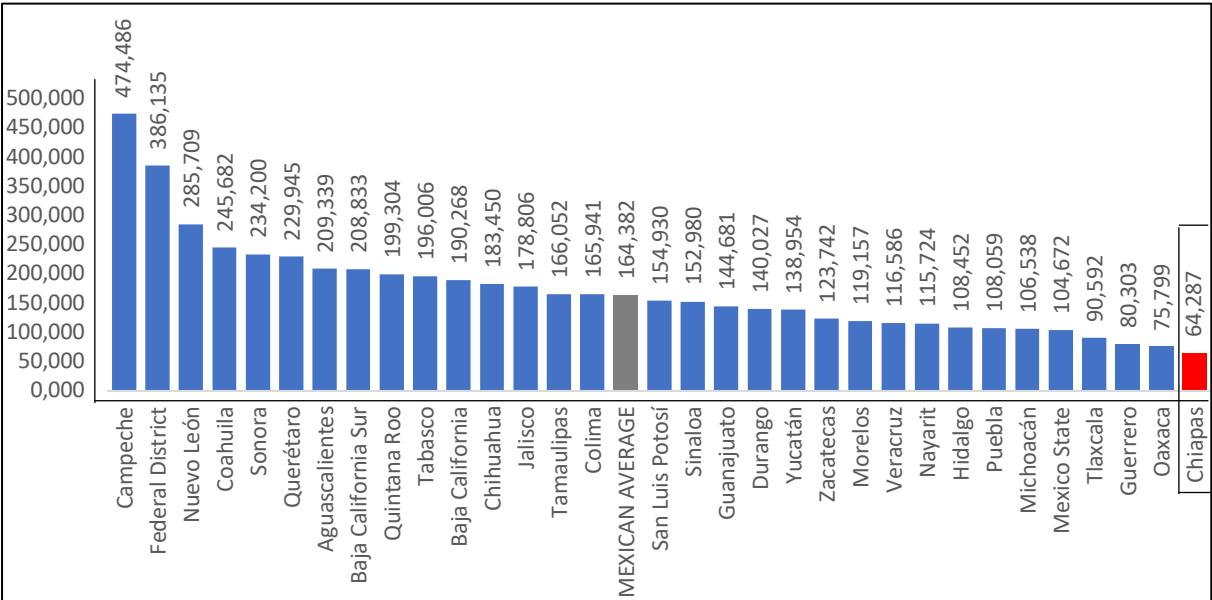Source: Own elaboration, based on descargalmapas.net (2019).

The Center for International Development at Harvard University estimated in their 2016 'Why is Chiapas Poor?'[11] paper that the state's growth rate was the lowest[12] between 2003 and 2013

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[11] Original: ¿Por qué Chiapas es pobre?
[12] Annual growth rate of 0.2%

which further widened the gap between Chiapas' and the national average growth rate from 53% to 60%. For the year 2016, they further estimate that the income of the average Mexican is two and half times higher than that of the average population in Chiapas. These strikingly high differences between Chiapas and other Mexican states are further reproduced within Chiapas: While the difference between Chiapas, the poorest state, and Federal District, the richest state, has a factor of six, it increases to more than eight when it comes to the differences between Chiapas poorest municipality, Aldama y Mitontic, and the state's richest municipality, Tuxtla Gutiérrez (Levy et al., 2016).

Graph 4: Mexican States by GDP per capita, 2016 (in 1,000 current pesos)

Source: Own elaboration, based on OECD (2019b).

According to INEGI and Levy et al. (2016), the low income per capita and the state's small GDP growth makes Chiapas to Mexico's poorest state[13]. A major reason for the low incomes and high poverty of Chiapas' population roots in its economic sector composition (Rebón, 12; Puyana 2015): The primary sector, which has an overall lower productivity rate, is the main source of occupation in Chiapas. It employs more than half of the working population in Chiapas while accounting for less than a third of the state's GDP (Rebón, 2001, p.15) Many scholars hold the NAFTA Free Trade Agreement between the USA, Canada, and Mexico responsible for the impoverishment of Mexico's southern states and the enrichment of the country's north (Schuster, 2009; Puyana, 2015). While Mexican's northern states increased

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[13] As of 2012, 74.7% of Chiapas' population live in poverty; 46.7% live in extreme poverty which represents the highest state poverty levels in Mexico (Levy et al., 2016).

their trade and exports due to their closeness to the US, the prices for agricultural products – dominantly being produced in the South of Mexico – fell and therefore increased the pressure on small-scale farmers (Schuster, 2009).

In their analysis of the roots of Chiapas' low economic performance, Levy et al. (2016) came to the conclusion that the state is locked in a low productivity trap: For decades, Chiapas' economy held low complexity patterns. Together with low returns on investments, this further decreased the general economic production diversity of the state as well as private investment incentives. The authors claim that these discouraging circumstances have been further aggravated by a lack of infrastructure and low levels of human capital.

Despite Chiapas richness of natural resources, its population lacks behind in nearly all socio-economic indicators compared to the national average (Rebón, 23; Levy et al., 2016). Especially in terms of education levels but also regarding health provision and housing facilities, Chiapas scores worse than the Mexican average (Lastra, 1994; Veloz, 2010). Figure 4 indicates that Chiapas population, compared to the Mexican average, has a significantly higher share of people without schooling (14.6% versus 5.8%) or only basic schooling (57.2% versus 53.3%). On the other hand, the population share holding a medium (16.4% versus 21.7%) or superior schooling (11.7% versus 18.6%) degree is much lower in Chiapas. The share of illiterate people is also significantly higher in Chiapas compared to the Mexican average (Annex 1).

Figure 4: Schooling Level – Mexico/Chiapas Comparison
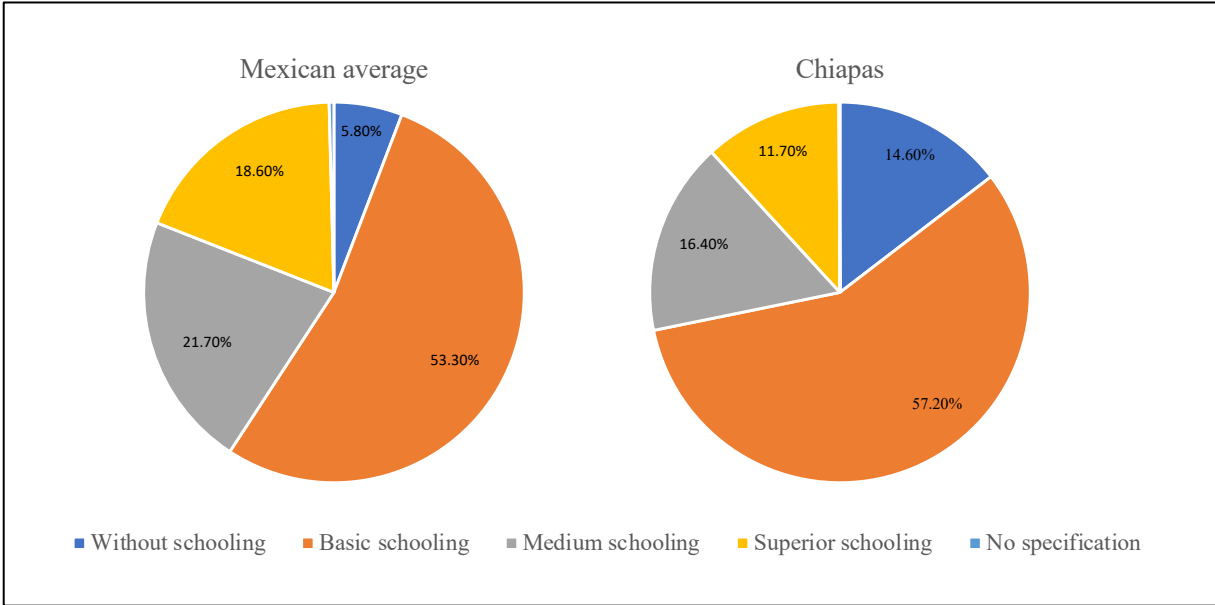
Source: Own elaboration, based on Secretaría de Educación Del Estado de Chiapas (2019).

2.3.2 Chiapas' Indigenous Population

Throughout history, Chiapas' indigenous population has been characterized by the following groups in descending order: Tzeltales, Tzotziles, Choles, Zoqzes, Tojolabales and Mames (Instituto Nacional de los Pueblos Indígenas, 2018). According to the 2015 INEGI Census, the total population of Chiapas is 5,218,000 of which 36.15% consider themselves as indigenous while 27.94% of the 3-year and older population speaks an indigenous language (INEGI, 2015). One-third of Chiapas' indigenous language speakers does not speak Spanish, indicating a significant burden regarding the integration into the labor market (INEGI, 2015; Hamnett, 2006).

As stated by Mexico's National Institute of Indigenous People[14] (CDI), Chiapas is home to around 13.5% of Mexico's total indigenous population which makes it rank among the six 'most Indianized' States of Mexico (CDI/UNDP, 2006). As Figure 5 indicates, the share of indigenous populations is especially high in the North-East, and some Central parts, which are the mountainous and jungle regions of the state.

As in the rest of Mexico, in Chiapas, the indigenous working-age population is predominantly occupied in the agricultural sector (Levy et al., 2016). As the primary sector is characterized by its low factor productivity as well as low wages, it keeps the indigenous population of Chiapas in poverty. This becomes evident when comparing the exact areas of high indigeneity density and high poverty regions in Chiapas (Figure 5 and Figure 6). Two important observations can be derived from this comparison: Firstly, it can be seen that, compared to the other Mexican states, Chiapas has many municipalities of high indigeneity and also more municipalities with an extreme poor population. Secondly, when comparing the colors of both figures, there seems to be a clear correlation between highly indigenous municipalities and extremely poor municipalities as the share of higher indigeneity (red part of Figure 5) are overlapping with the areas of extreme poverty (red part of Figure 6). The same applies when looking at a municipality-based map indicating social backwardness (Annex 2; for a closer zoom into Chiapas: Annex 3).
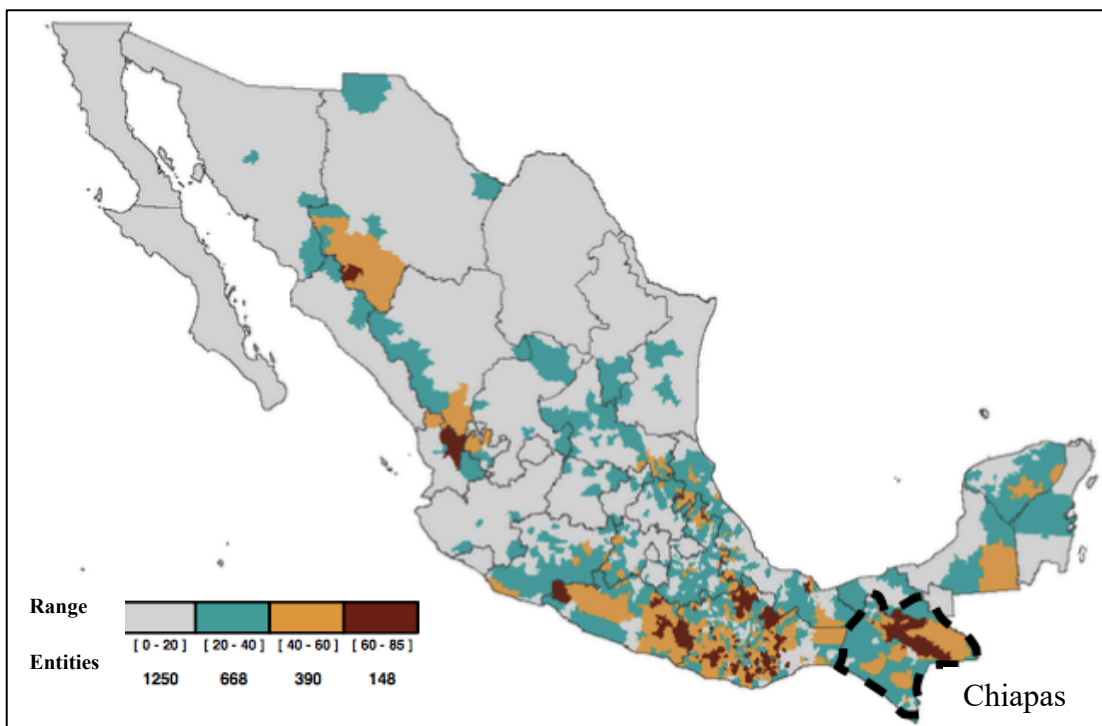
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[14] Original: Comision Nacional para el Desarollo de los Pueblos Indigenas

Figure 5: Indigenous population per municipality in Mexico, 2010
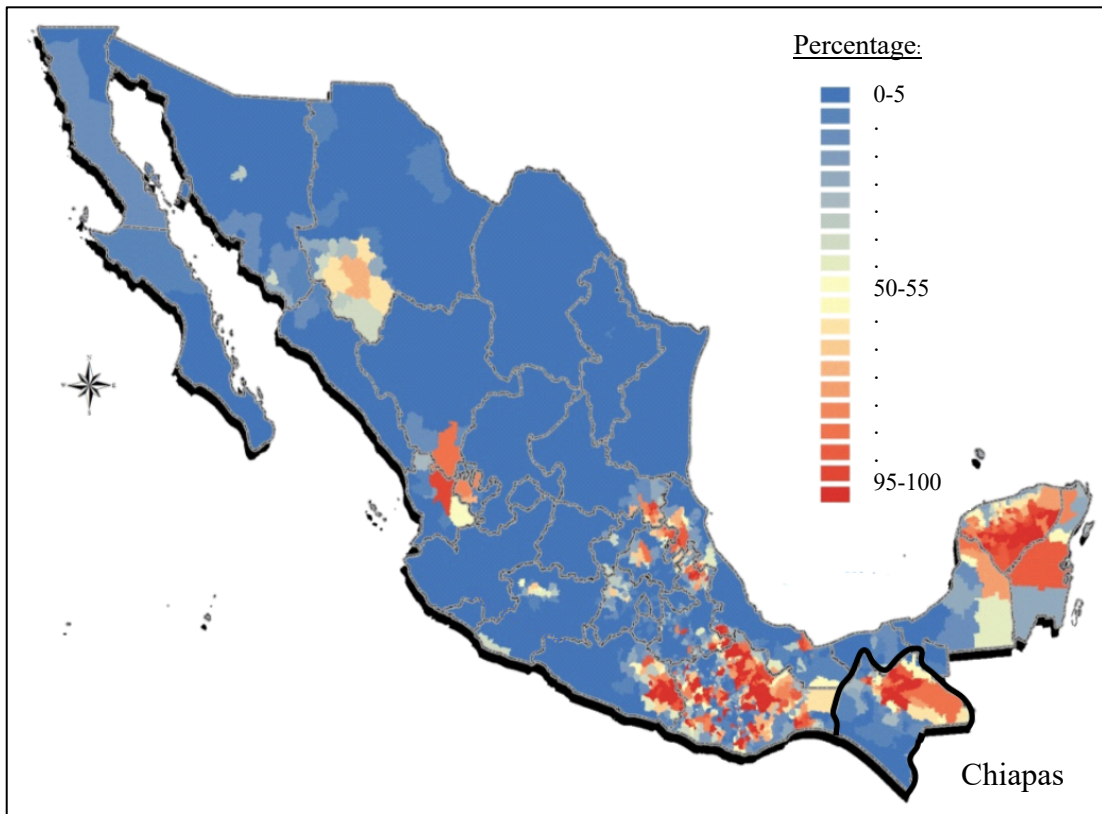
Source: Comision Nacional para el Desarollo de los Pueblos Indigenas (2014).

Figure 6: Extreme poverty per municipality in Mexico, 2010

Source: CONEVAL (2010)

2.3.3 The State's 1994 Riots and Its Further Development

The devastating conditions of social and economic deprivation and the perception of having little power in political questions arose tension between the indigenous population and local as well as national governments throughout the 20th Century. A key in the inequality debate of the indigenous population in Chiapas is the reform of Article 27 of the Mexican Constitution which was pushed forward by Mexico's President Salinas for the preparation of NAFTA. This amendment terminated the agrarian reform which was carried out sporadically since the Mexican revolution. These changing circumstances, as well as the consequences of NAFTA itself, worsened the situation of indigenous farmers in terms of land distribution and prices for agrarian products (Rosset & Cunningham, 1994). As the revenues of the remaining land became increasingly insufficient, it forced many indigenous families to move into cities and to look for alternative occupations. This further fueled the impression of unfairness and the need for redistribution (Veltmeyer, Petras & Vieux, 1997, p.205).

As a consequence, the armed group of the Zapatista National Liberation Army[15] (EZLN) – under the head of Subcomandante Marcos – decided to invade into Chiapas' city, San Cristobal de las Casas at New Year's day 1994, the same day that the NAFTA Free Trade Agreement came into effect (SíPaz, 2019).

During this day, the revolting group took power over five more cities in Chiapas and announced the beginning of an armed struggle against the Mexican government. Throughout their 12-day battle – or widely known as 'Zapatista movement' – Marcos and his army demanded more rights for the indigenous population and an agricultural reform implying land redistribution (Instituto Nacional de los Pueblos Indígenas, 2018). This rebellion quickly arose international attention and sympathy which increased the pressure on the Mexican government who was soon forced to search for a dialogue with the EZLN (The New York Times, 1997; SíPaz, 2019).

Although Salinas, Mexico's president at that time offered the EZLN a massive monetary package and official work projects by February 1994, the Zapatistas denied the deal. They claimed that Salinas projects were aiming to raise attention rather than truly satisfying the needs of the indigenous population. In the fear of being forgotten soon after the deal, they kept manifesting and dialoguing until the 29th of August of the same year. By then the manifestations were terminated on behalf of the EZLN who accused the government of a lack of commitment towards its indigenous population (SíPaz, 2019).

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[15] Original: Ejército Zapatista de Liberación Nacional

As various authors (Stewart, 2002; Gabbert, 2004; New York Times, 1997; Lacey, 2007) claim, still many years after the 1994 rebellion nothing essential has been changed. Despite the officially announced projects on behalf of the Mexican government, the indigenous population still suffer from miserable conditions (Gabbert, 2004). Three consecutive projects (1) Cañadas[16], (2) PIDDS[17] and (3) Prodesis[18] have been sharply criticized for their lack of efficiency and their counter-insurgency nature as they aimed at controlling and pacifying the indigenous population rather than improving their living conditions (Gabbert, 2004).

The lacking improvement and the stagnation of the dialogue led to further violent riots and manifestations until today. While 54 people got killed throughout the initial 12-day Zapatista movement itself, in the after years of the conflict the number of people who lost their live rose to more than 100 (SíPaz, 2019). Consequently, the government increased the amount of military that was stationed in Chiapas: From 37.000 soldiers after the ceasefire in January 1994 to 60.000 after an army offense in February 1995 to over 70.000 after the massacre of 45 people in Acteal in December 1997 (Gabbert, 2004).

Although the active support for the indigenous revolution group is shrinking, Gabbert (2004) claims that throughout the years, the numerous historical events of protests in Chiapas have achieved three major steps: The Zapatistas have worked towards a stronger inclusion of indigenous communities into political decision making and generally the political participation of young men and women. Secondly, democratization discussions, especially in regard to power-relations between indigenous communities and the Mexican state have been triggered through the many years of dialogues between the EZLN and the Mexican government. And lastly, Gabbert (2004) claims that the Zapatistas became an important symbol of resistance against neo-liberal forms of globalization worldwide.

2.3.4 Horizontal Inequality in Chiapas

In this context, Stewart – long before Puyana – drew the international attention within the *HI* debate on Mexico and especially on Chiapas. Although much shorter and without specific calculations, Stewart (2002) identified Mexico as a country with high *HI* pattern. Alongside other case studies of this paper – Uganda, Sri Lanka, South Africa, Ireland, Fiji, the US, Malaysia, and Brazil – Stewart claimed that Chiapas' 1994 riots were a clear outcome of *HI*. In this analysis, Stewart (2002) connects the features of Chiapas' large share of indigenous

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[16] Plan Cañadas: 1994-2001
[17] Programa Integral para el Desarollo Sustentable de la Selva (PIDDS): 2001-2004
[18] Prodesis: 2004-2008

population and its high deprivation of economic, social and political nature. In this regard, she further raises the attention to Chiapas' income and educational levels that clearly lie below the Mexican average. Regarding the after years of the 1994 conflict and the ongoing protests, Stewart (2002) supports the claim of lacking results of negotiations. Stewart (2002) even states a worsening of some indicators, such as income. However, other indicators, such as secondary education and the distribution of federal investments have seen a slight improvement regarding Stewart (2002).

3   Quantitative Analysis

As commonly known and stressed in the qualitative part, *VI* has declined sharply in nearly all Latin American countries since its peak at the change of the millennium. However, still today the region is marked by the most unequal income distribution patterns worldwide (Coady & Dizioli, 2017, p.9). If the Mexican government truly aims at reducing inequality patterns of its indigenous population, more information about its magnitude is a precondition for further policy action. The Qualitative analysis has shown that the governmental actions after 1994 seemed little efficient in terms of equalizing Mexico's society. The specific findings about the increasing *HI* pattern in Mexico leave little hope that group-based inequality has actually improved in Chiapas in the last decades. However further research on *HI* in Chiapas is necessary in order to confirm this claim.

It was the specific contribution of Puyana's and Stewart's work and their call for further research that paved the path to this quantitative analysis. While Puyana (2015; 2018) draws the attention to the severe *HI* in Mexico through various socio-economic indicators, Stewart (2002) emphasizes on the specific relevance of Mexico's state Chiapas. Despite Puyana's recentness of results, she gives no insight into Mexico's different states. On the other hand, the weakness of Stewart's analysis is that it dates back more than 15 years which makes it impossible to analyze a recent *HI* development over time. Moreover, and in contrast to Puyana's (2015) thorough analysis, it is a short country case-study that rather makes general claims instead of providing specific *HI* values for Chiapas. Therefore, the following part of the thesis will make use of Puyana's (2015) approach in order to identify HI in Chiapas for the year 2010 through socio-economic indicators. With a further insight about the poverty pattern of indigenous people over time, it closes the literature gap and finally confirms whether or not the claim of lacking improvement is true.

3.1   Methodology

In order to identify Chiapas' *HI* patterns for the year 2010, I will make use of Puyana's (2015; 2018) methodology. Accordingly, the procedure that is necessary to calculate *HI* in Chiapas includes three steps: The (1) Categorization of municipalities into five different indigeneity groups, the (2) Identification of social and economic indicators and the (3) Matching of the municipality groups to the categories of social and economic deprivation indicators.

More specifically, this third step implies cross-tabulating the variables of the first two steps which means that for each municipality the variable of indigeneity is crossed with a further variable of a certain deprivation. The tables that result from this cross-tabulating procedure then provide information about the share of indigeneity and simultaneously, the degree of social and economic backwardness of all 118 municipalities in Chiapas. The different degrees of social and economic backwardness of each municipality further allow to calculate ratios between the five municipality groups.

Instead of proving a direct relationship, this procedure rather aims at showing the trends of correlation that exist between a municipality's higher share of indigeneity and more acute social and economic backwardness.

Although *HI* might exist on all four dimensions, – economic, social, political and cultural – Langer and Stewart (2013) detect a certain difficulty in measuring *HI* for one country on all four dimensions. This difficulty especially arises regarding the latter two dimensions due to a lack of data. Puyana (2015) agrees on this lacking data for the specific region of LA. However, Stewart claims: "While it is neither possible nor desirable to collect data on every aspect of the four dimensions of *HI*s, it is important to get an idea of the prevailing distributional group disparities [...]" (Langer & Stewart, 2013, p.5). Therefore, the *HI* analysis of Chiapas follows Stewart's recommendation of rather establishing a comprehensive picture of the prevailing *HI* patterns. It does not include the political and cultural dimensions but focuses solely on social and economic deprivation, as well as poverty pattern.

Once the results of Chiapas' 2010 *HI* in terms of social and economic deprivation have been revealed and discussed, the two following comparisons are made: Firstly, the *HI* patterns and degree of Chiapas in 2010 will be compared to those of Mexico in the same year. This sheds light on the magnitude of indigenous suffering in Chiapas. This comparison allows to put Chiapas' *HI* levels into perspective and to further analyze if the indigenous population in Chiapas faces more inequality than the Mexican average indigenous population.

Secondly, and in order to analyze whether or not the situation has improved since Chiapas' 1994 Zapatista Movement, poverty degrees will be compared between the years 1990, 2000 and 2010. As the data on social and economic deprivation on municipality level does not date back until 1990, this last step identifies *HI* and its development from 1990 until 2010 through poverty gaps. The same five municipality groups will be used and further matched to their degree of food, capability and asset poverty for the years 1990, 2000 and 2010.

3.2   Data

Mexico's National Commission for the Development of Indigenous People[19] (CDI) and the United Nations Development Programme (UNDP) provide the following suggestion about how to group municipalities regarding their share of indigeneity:

Table 6: Municipality Division Regarding Their Degree of Indigeneity

A	Municipalities where the indigenous population is over 70% of the total.
B	Municipalities where the indigenous population is between 40% and 69% of the total.
C	Municipalities where the indigenous population is less than 40% of the total but exceeds 5,000 people.
D	Municipalities where the indigenous population is less than 40% of the total and is fewer than 5,000 people.
E	Municipalities with a scattered indigenous population or none.

Source: Puyana (2015), based on CDI/UNDP (2006)

In order to classify Chiapas' 118 municipalities into these five different municipality types, information about the indigenous share of each municipality is necessary. INEGI's '2010 Population and Housing Census' provides the two necessary variables *total population* and *total indigenous population* per municipality. These are used to calculate the indigenous population share for each of Chiapas' 118 municipalities and hence group them into the five municipality types. The *total indigenous population* is defined as the population of 3-year-olds and older people speaking an indigenous language. So, as in most *HI* analyses, language will be used as indicator for being indigenous/non-indigenous (Puyana, 2015; 2018; Stewart, 2002).

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[19] Original: 'Comisión Nacional para el Desarrollo de los Pueblos Indígenas'

In step two, social and economic deprivation – or also referred to as backwardness – are being identified for Chiapas' 118 municipalities as of 2010. These are being derived from the '2010 Social Deprivation Index Database'[20] provided by The National Council for the Evaluation of Social Development Policy (CONEVAL). Regarding CONEVAL, social and economic deprivation are the result of various social and economic indicators comprised. In order to calculate social deprivation, they consider aspects of educational levels, health as well as basic services and space in the living facilities. Economic deprivation refers to income indicators and poverty levels (CONEVAL, 2012).

Table 7 and Table 8 show the exact variables and their definition which will be used to detect HI in Chiapas:

Table 7: Poverty and Economic Deprivation Variables

Variable	Explanation and Definition
State of Poverty	
Total population in the state of poverty	The definition of poverty considers the living conditions of the population in three regards: economic well-being, social rights and territorial context.
Population share suffering moderate poverty	The population with income inferior to the minimal line of well-being and who further suffers from at least 1 social deprivation indicator.
Population share suffering extreme poverty	The population with income inferior to the minimal line of well-being and who further suffers from at least 3 social deprivation indicators.
Well-being	
Population share with income inferior to the line of well-being	The population that does not have enough resources to acquire the goods and services you need to meet your needs (food and non-food).
Population share with income inferior to the minimal line of well-being	The population that, even when all their income is solely spent for the purchase of food, cannot acquire what is indispensable to have adequate nutrition.

Source: Own elaboration, based on 'Social Deprivation Index Database', CONEVAL (2010).

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[20] Original: 'El Índice de Rezago Social'

Table 8: Social Deprivation Variables

Variable	Explanation and Definition
Degree of Social Deprivation	
Population share suffering from at least 1 social deprivation indicator	For each of the six indicators social variables a dichotomous variable is generated that allows to distinguish if a person presents a lack in the respective dimension or not. These indicators take the value one when the individual has the lack, and zero otherwise.
Population share suffering from at least 3 social deprivation indicators	This index is constructed for each person from the sum of the six indicators associated with social deprivation.
Social Deprivation Indicators	
Educational gap	People who suffer from at least one of the following aspects: a) Population of 3-to-15-years-olds who have not finished the secondary school or do not assist a school. b) Population born until 1981 who has not finished primary school. c) Population born from 1982 onwards who has not finished secondary school.
No access to health services	Population not affiliated or registered to receive health services by 'Seguro Popular', nor being beneficiary of any social security institution.
No access to social security	People who suffer from at least one of the following aspects: a) Employed and salaried population that does not receive work benefits regarding illness and disability insurance. b) Employed and non-salaried population that does not receive work or self-employment medical services by a public institution of Social Security, SAR or Afore. c) Population without access to social security for any of the first two criteria, which does not enjoy any retirement or pension, nor be a direct relative of a person inside or outside the home with access to social security. d) Population aged 65 or over who do not have access to social security for any of the previous criteria nor is it a beneficiary of a social pension program for older adults.
Lack of quality and space in the living facilities	Houses with at least one of the following characteristics: a) The material of most of the floors is earth. b) The material of most of the roof is cardboard or scrap. c) The material of most of the walls is embankment, reed, bamboo, palm, sheet cardboard, metal, asbestos or waste material. d) Being overcrowded.
Lack of basic services in living facilities	Population living in houses with at least one of the following characteristics: a) The water is obtained from a fountain, river, lake, stream, pipe, or, the piped water is obtained by hauling from another house, public facilities or a hydrant. b) No drainage, or the drain has a connection to a pipeline that goes to a river, lake, sea, canyon or crack. c) No electric power.
Lack of sufficient and healthy alimentation	Population in households with a moderate or severe degree of food insecurity.

Source: Own elaboration, based on 'Social Deprivation Index Database', CONEVAL (2010).

As CONEVAL measures social and economic deprivation indicators only since 2005, different variables are used to identify if the circumstances for Chiapas' indigenous population have improved since 1990. As Puyana (2015) suggests in her Mexico analysis, a development over time (1990-2000-2010) can be detected through poverty levels and poverty gaps. The following three poverty variables of INEGI's 1990, 2000 and 2010 'Population and Housing Censuses' are being used to detect a development over time in Chiapas:

Table 9: Poverty Type Variables

Variable	Explanation and Definition
Food Poverty	The inability to afford a basic food basket even if the whole of the household's available income were spent in this.
Capability Poverty	The inability to afford a basic food basket even if the whole of the household's available income were spent in this Food poverty, as well as the inability to afford health care and education.
Asset Poverty	The inability to afford a basic food basket even if the whole of the household's available income were spent in this Food poverty, the inability to afford health care and education, as well as the inability to afford housing and transport.

Source: Own elaboration, based on 'Population and Housing Censuses', INEGI (1990; 2000; 2010).

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3.3 Chiapas' HI in 2010 - Results and Discussion

3.3.1 Municipality Grouping

Following the classification of Mexico's National Commission for the Development of Indigenous People (CDI/UNDP, 2006) and using data from the 2010 Population and Housing Census, Chiapas' 118 municipalities are separated and classified as follows:

Table 10: Chiapas' municipality division based on their indigeneity in 2010

Type of municipality	Number of municipalities	Number of inhabitants		Percentages		
		Indigenous population	Total population	Distribution of indigenous population by municipality type	Distribution of total population by municipality type	Indigenous population as percentage of total
A. Over 70% indigenous population	17	437,660	587,321	38.34	12.19	75.75
B. Between 40% and 69% indgenous population	17	381,699	676,096	33.43	14.03	59.01
C. Less than 40% indigenous population	12	238,901	1,412,344	20.93	29.30	23.43
D. Scattered indigenous population	57	82,360	1,866,658	7.22	38.73	7.52
E. No or very small indigenous population	15	879	277,323	0.08	5.76	0.40
Total	118	1,141,499	4,819,742	100	100	23.68

Source: Own calculation, based on CONEVAL (2010), INEGI (2010).

As Table 10 reveals, in 2010, Chiapas had a total amount of 34 indigenous municipalities (type A and B). Half of those have an indigeneity share of over 70% and the other half is characterized by an indigeneity share of between 40% and 69%. Similar to the indigeneity division of all municipalities in Mexico (Table 2), only few (12 municipalities) are categorized as type C while most of Chiapas' municipalities (57) have a scattered indigenous population[21]. No or a very small indigenous population accounts for 15 municipalities in Chiapas.[22]

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[21] Below 40% and fewer than 5.000 indigenous people; as of definition on Page 38.
[22] Less than 100 indigenous people; as of definition on Page 38.

3.3.2   Cross-Tabulating Procedure

When cross-tabulating the category of social deprivation with the degree of indigeneity of each municipality, the following values occur:

Table 11: Chiapas' Municipalities regarding their Social Backwardness

	Degree of Social Deprivation					
	Very high	**High**	**Medium**	**Low**	**Very low**	**Total**
Type of Municipality	A. Over 70% indigenous population					
Observed number of municipalities	6	10	1	0	0	17
Type of Municipality	B. Between 40% and 69% indigenous population					
Observed number of municipalities	4	11	2	0	0	17
Type of Municipality	C. Less than 40% indigenous population					
Observed number of municipalities	0	4	5	2	1	12
Type of Municipality	D. Scattered indigenous population or none					
Observed number of municipalities	0	7	28	21	1	57
Type of Municipality	E. Scattered indigenous population or none					
Observed number of municipalities	0	2	11	2	0	15

Source: Own elaboration, based on CONEVAL (2010).

Puyana (2015) has shown for the year 2010 that indigenous municipalities are over-represented in the high degrees and under-represented in the low degree categories of social deprivation. The opposite is the case for municipalities accounting for lower or no shares of indigeneity. This pattern of over-representation is equally observable for the case of Chiapas. The grey marked cells in Table 11 show the categories in which each municipality group is most represented. While municipality type A has 16 out of their 17 municipalities in the high and very high share of social deprivation and no one in the low or very low category, most of the municipalities of types D and E are situated within the categories of medium and low degree of social deprivation. Although the last municipality type is more heavily represented in the category of medium social deprivation, a certain pattern from the upper left to the lower right can be observed.

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The cross-tabulation of the five municipality types with their specific economic and social deprivation indicators provides the following, more detailed insight into *HI* values for Chiapas' municipalities in 2010:

Table 12: Impact Indicators by Type of Municipality, Chiapas, 2010 (In Percentages and Ratios)

Impact Indicator	Municipality Type					Ratios				
	A	B	C	D	E	A/A	B/A	C/A	D/A	E/A
Poverty State										
Total Population in the state of poverty	92.90	92.50	80.00	82.60	81.60	1	1	0.86	0.89	0.88
Population in the state of moderate poverty	28.80	32.50	43.10	46.90	46.10	1	1.13	1.50	1.63	1.60
Population in the state of extreme poverty	64.10	60.00	37.00	35.70	35.50	1	0.94	0.58	0.56	0.55
Social Deprivation										
Population with at least one social deficit	98.90	98.70	92.40	95.50	95.90	1	1	0.93	0.97	0.97
Population with at least three social deficits	79.90	76.50	56.40	55.80	57.40	1	0.96	0.71	0.70	0.72
Indicators of Social Deprivation										
Educational gap	43.20	43.10	38.00	36.90	34.50	1	1	0.88	0.86	0.80
No access to health services	32.20	39.20	38.10	30.60	32.40	1	1.22	1.18	0.95	1.01
No access to social security	94.80	94.10	84.60	85.30	84.10	1	0.99	0.89	0.90	0.89
Lack of quality and space in living facilities	53.80	43.40	29.60	31.80	35.70	1	0.81	0.55	0.59	0.66
Lack of basic services in living facilities	86.30	82.00	56.00	59.10	64.00	1	0.95	0.65	0.69	0.74
Lack of sufficient and healthy alimentation	39.90	36.50	31.70	30.70	28.90	1	0.92	0.79	0.77	0.72
Well-being										
Population with an income below the line of well-being	93.30	92.90	82.30	84.30	83.10	1	0.99	0.88	0.90	0.89
Population with an income below the line of minimum well-being	75.00	72.20	51.20	52.50	51.40	1	0.96	0.68	0.70	0.69

Source: Own elaboration, based on CONEVAL (2010).

To begin with, if the population suffering from poverty, social and economic deprivation is compared among the different municipality types, it gets evident that the higher the share of indigeneity (from municipality type E to A), the higher is the degree of deprivation. Hence, for all indicators, the degree of deprivation increases almost constantly with the density of a municipalities' indigeneity.

As the results of Table 12 indicate, a higher share of the total population living in municipality type A (92.9%) suffers from poverty compared to all other municipality types (municipality type B: 92.5%, C: 80%, D: 82.6%, E: 81.6%). If comparing the most indigenous municipality

type (A) with the least indigenous municipality type (E), their different degrees of poverty result in a 0.88 E/A gap. This gap indicates that for every 100 people suffering poverty in municipality type A, only 88 people do so in municipality type E. This gap widens even more if the sub-category of extreme poverty is considered: While 35.5% of all people living in municipalities of type D suffer from extreme poverty, it is 64.1% of the total population of municipality type A, almost double the amount (E/A gap: 0.55). As more people suffer from extreme poverty in municipality type A, a smaller population share suffers from moderate poverty. This explains the higher degrees of moderate poverty for municipality groups of lower indigeneity and the reverse ratios.

A similar scenario can be observed when accounting for the degree of social deprivation: While nearly all people, no matter which municipality type suffer from at least one social deficit (E/A gap: 0.97) in Chiapas, this gap widens when testing for the population share that suffers from three social deficits. While this number drops down to 57.4% for people living in municipality type D, it stays high (79.9%) for municipality type A, causing an E/A gap of 0.72.

When accounting for the specific social deprivation indicators, the results reveal that people living in indigenous municipalities lag significantly behind in terms of education and living standards: While 43.2% of all people in municipality type A have an educational gap, only 34.5% of the total population in municipality type E does so. This E/A gap of 0.80 confirms the claim that has been made during the qualitative part about the significant difference in educational access and attainment between indigenous and non-indigenous people. While the gap narrows down between type E and A municipalities in terms of access to social security, it widens immensely when accounting for specific housing facility indicators. For instance, while 53.8% of all people living in municipalities of type A lack quality and sufficient space in their living facilities, this is only the case for 35.7% of the population of municipality type E. The degree of indigeneity in a municipality seems to have no effect on the accessibility of health services (E/A gap: 1.01).

Finally, the correlation trend of high indigeneity and high social and economic backwardness of a municipality stands in line with the results of the well-being indicators. Similar to the pattern of moderate and extreme poverty, most people in Chiapas, no matter the municipality type, have an income that falls below the line of well-being. However, when it comes to the populations with an income below the line of minimum well-being, it hardly drops down in indigenous municipalities (type A: 75%, type B: 72.2%) while it does so in non-indigenous municipalities (type C: 51.2%, type D: 52.5%, type E: 51.4%), causing an E/A ratio of 0.69.

3.4 Comparison of Chiapas' 2010 Horizontal Inequality

3.4.1 Comparison of Horizontal Inequality patterns in Chiapas and Mexico, 2010

When comparing the recent results of Chiapas' *HI* levels (Table 12) with the equally calculated *HI* values for the Mexican average of the same year (Table 4) several differences arise: Generally, the share of people suffering from social and economic deprivation is significantly higher in Chiapas' indigenous municipalities than in the average indigenous municipalities of Mexico. This is especially alarming when it comes to extreme poverty: While in Chiapas, 64.1% of all people who live in municipalities of type A suffer from extreme poverty, the share of the national average lies at 37.2% (type A municipalities).

When accounting for the share of people suffering from at least one and at least three social deficits, the population shares for Chiapas and the Mexican average show similar values. However, people suffer from different deficits depending on their region of residence: While Chiapas has higher shares of people suffering from educational gaps, social security, basic services in the living facilities and a lack of sufficient and healthy alimentation, the suffrage in Chiapas is lower than average in terms of access to health services, as well as space and quality in the living facilities.

When comparing the E/A gaps of Chiapas and the D/A[23] gaps of the Mexican average, many similarities can be observed. For instance, these gaps widen significantly when testing for more extreme circumstances: They rise from 0.97 to 0.72 in Chiapas and from 0.91 to 0.56 in Mexico when comparing the share of people suffering from one social deficit with those suffering from three social deficits respectively. The same applies when comparing the income variable below the line of well-being with the income variable below the minimum line of well-being: The gaps rise from 0.89 to 0.69 in Chiapas and from 0.80 to 0.60 in Mexico. This clearly indicates that while a large share of the Mexican population suffers from a social deficit and insufficient income, it is predominantly the indigenous population that suffers from more extreme backwardness.

Despite similarities between the ratios of the two areas, a significant difference is Chiapas' larger E/A gap in terms of the likeliness of facing extreme poverty. While in Chiapas 64.1% of all people living in municipalities of type A suffer from extreme poverty, this is only the case for 37.2% of all municipality type A inhabitants nation-wide. In the Annex, further visual

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[23] As mentioned earlier, Puyana excluded municipality type E due to the comparably low amount of municipalities in this category; this has not been the case for Chiapas.

comparisons between Chiapas and all other Mexican states are provided in terms of their social and economic deprivation indicators.

3.4.2 Comparison of Chiapas' Poverty Pattern of 1990, 2000 and 2010

The comparison of food, capability and asset poverty of Chiapas' indigenous municipalities (type A and B) between the years 1990, 2000 and 2010 reveals the following result:

Table 13: The Development of Poverty Levels for Chiapas' Indigenous Municipalities over Time (In Percentages and Ratios)

Type of municipality	Food Poverty			Capability Poverty			Asset Poverty		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
A. Over 70% indigenous population	51.50	60.40	52.60	60.40	68.00	62.30	79.50	83.30	82.30
B. Between 40% and 69% indigenous population	50.20	64.80	57.00	59.40	72.20	66.60	79.30	86.60	85.60
Ratios	1990	2000	2010	1990	2000	2010	1990	2000	2010
A/A	1	1	1	1	1	1	1	1	1
B/A	0.97	1.07	1.08	0.98	1.06	1.07	1	1.04	1.04

Source: Own elaboration, based on CONEVAL (2010), INEGI (1990; 2000; 2010).

Table 14: The Development of Poverty Levels for Mexico's Indigenous Municipalities over Time (In Percentages and Ratios)

Type of municipality	Food Poverty			Capability Poverty			Asset Poverty		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
A. Over 70% indigenous population	53.60	69.70	52.70	62.40	76.00	63.00	80.80	87.80	84.00
B. Between 40% and 69% indigenous population	47.90	58.20	42.60	56.70	65.30	52.60	76.50	80.50	75.60
Ratios	1990	2000	2010	1990	2000	2010	1990	2000	2010
A/A	1	1	1	1	1	1	1	1	1
B/A	0.90	0.80	0.80	0.90	0.90	0.80	0.90	0.90	0.90

Source: Puyana (2015)

As Table 13 indicates, and similar to the development of Mexico's food, capability and asset poverty over time (Table 14), there was a significant aggravation of all poverty types between the years 1990 and 2000 for Chiapas' indigenous municipalities. While 51.5% of the population

living in municipalities of type A suffered from food poverty in 1990, this value has risen to 60.4% by 2000. For municipality type B, this number increased from 50.2% to 64.8% in the same period. This change of 9 and 14 percentage points respectively, represents the steepest increase of all three poverty types. However, capability and asset poverty have also significantly increased during this time period. These worsening patterns support the previous claim of lacking efficiency of the Mexican government's measures for the state of Chiapas. However, they might have been also influenced by the initially mentioned 1995 economic crisis.

In line with the poverty developments of all Mexican municipalities, the patterns improved again for all three poverty types between 2000 and 2010. It is remarkable however, that in Chiapas, none has dropped down to their initial 1990 levels. Consequently, for the whole 20-year-period, poverty patterns have worsened in terms of food, capability and asset for indigenous municipalities in Chiapas. In contrast, by 2010 they have dropped down to their initial 1990 levels in terms of food poverty and partly regarding capability and asset poverty for the Mexican average.

4 Limitations

Regarding the data and the methodology used in this thesis, three mayor limitations to this study can be revealed: Firstly, using survey data implies a certain bias as the answers of many respondents are likely to be inaccurate. Due to reasons of discrimination, wrong answers might be given regarding a person's ethnicity.

Secondly, in order to identify a municipality's share of indigeneity, the variable about speaking an indigenous language served as the only indicator. This can be seen critically as it does not capture the whole indigenous population. As stated in a UNICEF (2013) report about Mexico's indigenous population, the amount of people that is able to speak an indigenous language widely deviates from the number of self-identified indigenous people. The 2010 World Bank study about Mexico further specifies this deviation: While in 2010, 15% of Mexico's population identified themselves as indigenous, less than half (7%) of those indicated to speak an indigenous language. Taking into account the likely risk of underestimating the calculated indigenous effect, the decision of considering only indigenous language speakers was based on two factors: Firstly, and regarding the previously mentioned survey bias, Yanes (2004) claims that for the case of Mexico the likeliness of not telling the truth is higher when asking for the indigenous self-identification than for the spoken language. Secondly, as the indigenous

population of a country can never be captured completely accurate, the thesis follows the procedure of INEGI's Population and Housing Censuses. These use the share of 3-year-olds[24] and older speaking an indigenous language as indigeneity indicator (INEGI, 2000; INEGI, 2005; INEGI, 2010) and seem to be the most reliable source.

A third limitation can be seen in the wide grouping procedure. As mentioned in the analysis, Chiapas is home to people belonging to different ethnicities. While some of the groups share cultural characteristics and resembling languages, there are also significant differences between one another. According to Langer and Stewart (2013), the grouping procedure within *HI* research is generally one of the most important and difficult steps at a time. They claim that detailed knowledge about indigenous culture and ethic awareness are prerequisites for a correct and precise grouping procedure. In order to facilitate this research, only the two groups of non-indigenous and indigenous people in Chiapas have been compared, ignoring the wide diversity of the latter's sub-groups. However, based on Puyana (2015; 2018), this study further categorized Chiapas' municipalities regarding their share of indigenous population. Nevertheless, in order to identify which specific indigenous group faces high *HI* and why this is the case, further research should focus on an even smaller scale. This way *HI* can be tackled as precisely as possible.

The same variety of possible procedures applies for the measurement of *HI* patterns. While Stewart uses her self-elaborated group inequality formulas throughout all her *HI* studies, this study follows Puyana's approach of comparing the density of indigeneity and social and economic backwardness between different municipality types. Although no causal nor direct relationship can be proved by this procedure, its contribution lay – as Stewart called for – in "[…] get[ting] an idea of the prevailing distributional group disparities [...]" (Langer & Stewart, 2013, p.5) of Chiapas' indigenous population.

For a more precise understanding of *Horizontal Inequality* in Mexico and specifically in Chiapas, this analysis should be expanded by the two further aspects of *HI*: cultural and political discrimination. Due to lacking data this was not possible in this thesis.

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[24]With the 2010 Census this was changed to 3-year-olds and older. Before 2010, Censuses used 5-year-olds as the lower bound. This change was due to their argumentation that already with 3 years, children are able to express themselves verbally in a way that is sufficient to detect whether or not it belongs to an indigenous language. (http://cuentame.inegi.org.mx/poblacion/lindigena.aspx?tema=P)

5 Policy Recommendations

The purpose of this study was to elaborate on Chiapas' 2010 *HI* levels and further compare them with Mexico's national *HI* patterns of the same year as well as the poverty development of indigenous people in Chiapas since 1990. The results at hand have drawn the attention to the persisting social and economic deprivation as well as high poverty patterns which ethnic minorities face in Chiapas and Mexico-wide. Despite the previously mentioned limitations the results leave space for policy advice which is further supported by the literature. It refers to Mexico in general and further and more specifically to the case of Chiapas.

Firstly, and as Puyana (2015; 2018) stresses, the main responsibility in addressing *HI* lies with local, national but also international policymakers. In a first step, they are encouraged to gather relevant information which enables them to refine general distinctions between social, economic and cultural groups and their specific needs (Puyana, 2015; 2018). As emphasized earlier, a correct and precise grouping procedure of the target group is the main prerequisite to efficiently tackle group inequality (Langer & Stewart, 2013). In this regard, policymakers need to turn away from solely focusing on the conventional differentiation between social classes, regions, income deciles or household incomes but further include the measurement of gaps between certain disadvantaged groups and the rest of the population (Puyana, 2015).

Apart from the correct grouping procedure, the study also stressed on choosing the right inequality indicators. Thus, it has been emphasized that solely tackling individual income inequality does not mean that further inequality types between groups equally improve. Even contrarily, some cases showed that while *VI* decreased, *HI* has increased (Stewart, 2002). It indicates that inequality patterns of individuals can be no indication for *HI* developments. Therefore, the policy implications also need to step beyond the measures taken to tackle *VI*. As suggested in the thesis, this can be shown through gap measurements between different groups in terms of their social and economic well-being. These specific group-inequality measurements provide policymakers and governments with a clear picture of the discrimination and deprivation of certain groups. Hence, the next step is to elaborate and further establish concepts that counteract these disadvantageous patterns (Puyana, 2015).

It hereby depends on the country context on which indicator should be put the emphasis (Stewart & Langer, 2008). For the specific case of indigenous people in Mexico and Chiapas, a high importance is ascribed to the variable of education. Despite improvements of indigenous general educational attainment, it is alarming that the indigenous/non-indigenous gap has significantly increased over time. Especially the lacking access to high-quality schooling has

been detected as a mayor hinderance for the indigenous population. As they live predominantly in remote areas, their access to more and better education can be increased through better infrastructure as well as improved teaching in urban schools.

Such efforts should not halt at the improvement of primary education (Puyana, 2018). Especially secondary school access is seen as a crucial factor for an individual's further development in Mexico, for instance, in terms of access to superior education or wider labor possibilities (Puyana, 2018). As mentioned earlier, it is the "[…] way to provide individuals with the ability to decide over their own destiny, to empower someone to exercise the civil rights and to widen the labor possibilities […]."[25] (Puyana 2015, p.60).

Compared to the rest of Mexico, the 1994 riots in Chiapas have proofed the high relevance of *HI* in this specific state of Mexico. Although the initial riots occurred a long time ago, the analysis has pointed to the still ongoing dissatisfaction and hence unrest of the indigenous population. This is a logical consequence of the strikingly high group inequality that still exists more than 25 years after the Zapatista movement. Hence, governmental action aiming at reducing inequality patterns of Chiapas' indigenous population was and still is more than necessary. Clearly, this can be said for Mexico's indigenous population in general. However, in terms of conflict-prevention, it is especially acute for Chiapas. Besides conflict prevention, the results align the urge for a reinforced focus on Chiapas' *HI* patterns for the sake of justice.

In response to the initially mentioned three approach recommendation of Langer and Stewart (2013), the first two approaches seem especially important when it comes to reducing *HI* in Chiapas: The first, 'direct' approach has the highest potential to improve inequality patterns of the ethnic minority without extensive time advance. For instance, through the use of governmental quotas access to education can be improved (Langer & Stewart, 2013).

In order to improve the discrimination and deprivation patterns of Chiapas' indigenous population in the long-term, the indirect policy approach is the most appropriate. In contrast to the direct approach, it includes more general policies, such as progressive taxation or specific regional expenditure models. It is especially suitable for the case of Chiapas as it would improve the situation of the indigenous population without raising the already high boundaries between the indigenous and non-indigenous groups.

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[25] Original: "[…] como medio para ampliar al individuo la posibilidad de decidir sobre su propio destino, facultar el ejercicio de los derechos ciudadanos y ampliar las opciones laborales […]", (Puyana 2015, p.60)

6 Conclusion

The main objective of this thesis has shed light on the persisting *Horizontal Inequality* patterns in the state of Chiapas. It has been shown that the indigenous population in Mexico, and so in Chiapas, is mainly employed in the low-income agricultural sector. In this regard, the qualitative analysis aimed at connecting the dots of occupational and education constraints which trapped the indigenous population in a vicious circle of poverty and social deprivation for decades.

Through the Zapatista Movement, the indigenous population of Chiapas grabbed international attention which triggered governmental promises for improvement. However, various scholars criticize that little has changed (Stewart, 2002; Gabbert, 2004; New York Times, 1997; Lacey, 2007). This has been confirmed through the second, quantitative part of this thesis, in terms of food, capability and asset poverty. The comparison of these poverty patterns over time (Table 13) has shown a significant increase for people living in Chiapas' indigenous municipalities between 1990 and 2000. This is surprising, considering that the 1994 revolt and further smaller riots happened exactly in this time period and increased the pressure on the Mexican government. Certainly, this indicates the inefficiency of governmental projects which rather aimed to pacify Chiapas' population instead of improving the circumstances of the indigenous population (Gabbert, 2004). Furthermore, during 2000-2010, all three poverty types decreased again which goes in line with the significant economic growth in Mexico since the change of the millennium. Despite these improvements, the values did not fall to their initial 1990 level in the region of Chiapas. Contrarily, they did so for the indigenous municipalities of whole Mexico and even fell below the poverty levels of 1990. The worsening pattern for Chiapas compared to the Mexican average have been further demonstrated by the results of specific social and economic indicators for the year 2010 (Mexico: Table 4; Chiapas: Table 12). In line with the previous findings they show that a person living in an indigenous municipality in Chiapas is more likely to suffer from extreme poverty than the average person inhabiting an indigenous municipality in Mexico. Although the share of people suffering from social deficits is quite similar in the whole country, it clearly depends on the region which deficits they suffer. In indigenous municipalities of Chiapas, more people suffer from lacking social security, basic services in the living facilities, educational gaps and insufficient alimentation.

The result about higher educational gaps of the indigenous population in Chiapas aligns with the findings of Figure 4 in the qualitative part. These stressed the significant differences in terms of educational attainment and illiteracy rates between Chiapas and Mexican as a whole.

Throughout the thesis, a certain emphasize has been put on education as it is considered to be a main trigger to break through the poverty trap of indigenous people in Mexico (Puyana, 2015; 2018). Although the significant improvements of national educational patterns also include the indigenous population, it has been shown that their increasing educational attainment only refers to basic and low-skill education. This is clearly insufficient and needs to be expanded to higher educational attainment, if the government aims at lifting the indigenous population out of poverty and further preparing them for employment outside the agricultural sector. In terms of the unequal access to education, this thesis identified that a family's income and their location of residence in rural or urban areas mainly determines a schoolchild's opportunities. As identified in this thesis, it is especially the indigenous population that is characterized by low incomes and predominant residence in rural areas which makes the latter finding even more alarming.

The need for equalizing access and generally social and economic circumstances has been expressed in the previous policy section. This final part closed the circle of the thesis, claiming again the importance of group-based inequality and how it can be tackled in the specific case of Chiapas. Although indigenous civil wars and group protests characterize the history of many countries, *HI* country-analyses are only starting to reach the International Development Community. Concluding, this thesis contributes in understanding the specific deprivation pattern of Chiapas' indigenous population and how these can be tackled – in order to prevent future conflict but also for the sake of justice.

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8 Appendix

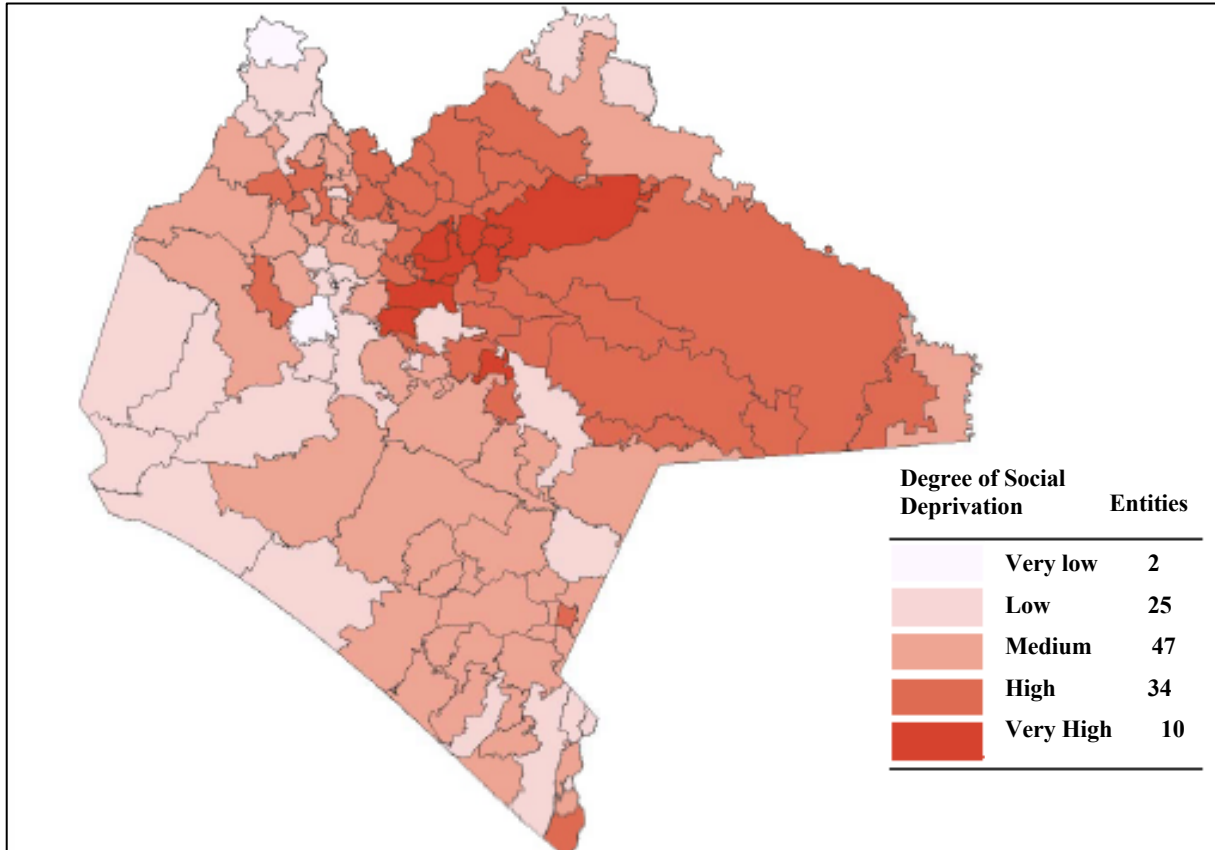Annex 1: Literacy Rate – Mexico/Chiapas Comparison
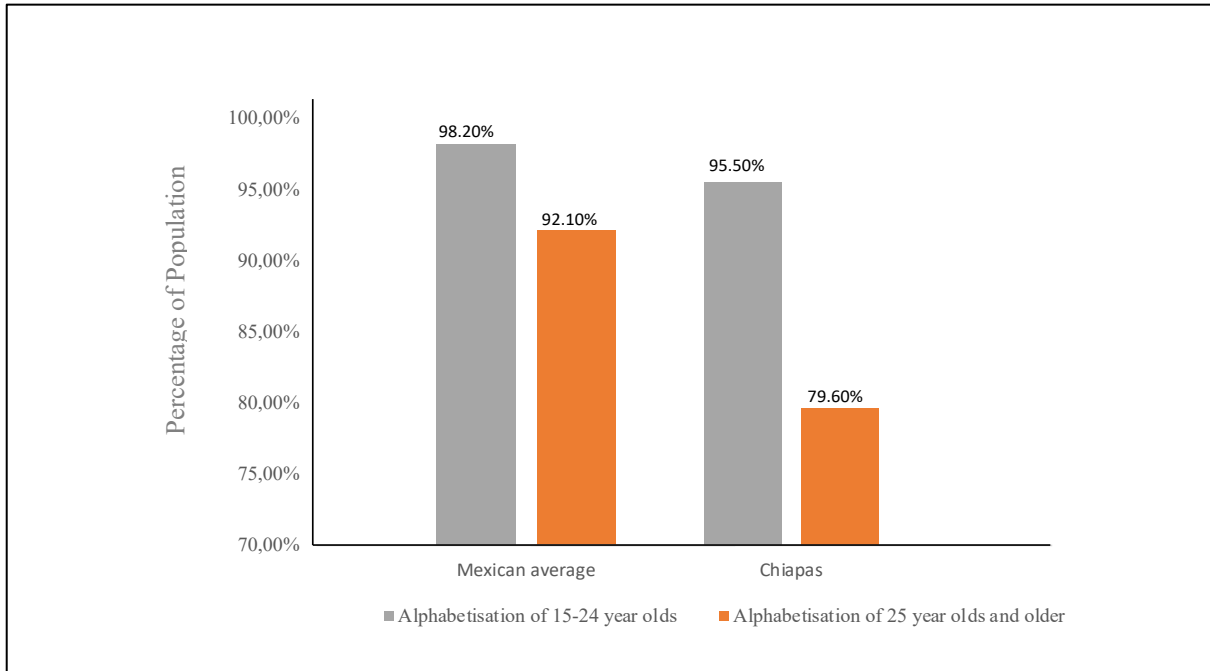
Source: Own elaboration, based on Secretaría de Educación Del Estado de Chiapas (2019).

Annex 2: Degree of Social Deprivation, Municipality level, Mexico, 2010
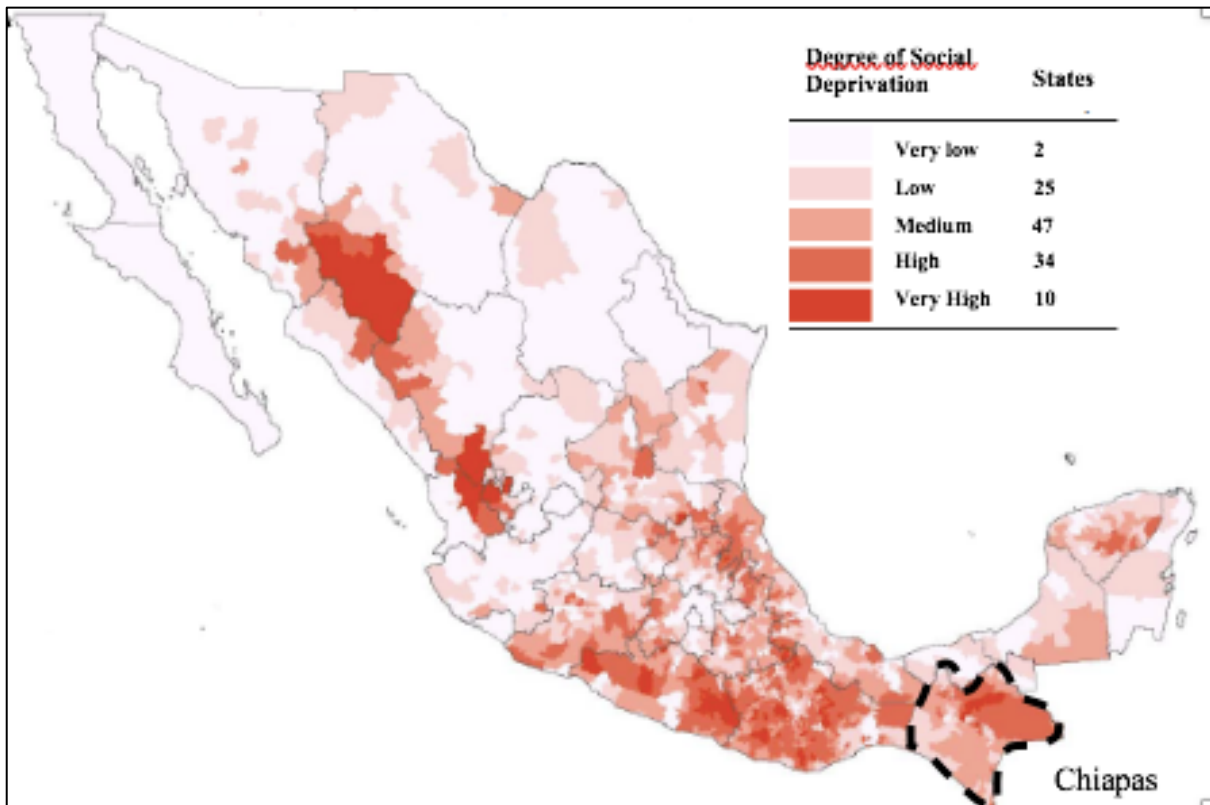
Source: CONEVAL (2010).

Annex 3: Degree of Social Deprivation, Municipality level, Chiapas, 2010

Source: Estimation of CONEVAL, based on Population and Living Census 2010 (INEGI)

Annex 4: The Development of Chiapas' Poverty Levels over Time (all municipality types)

| Type of municipality	Food Poverty			Capability Poverty			Asset Poverty		
	1990	2000	2010	1990	2000	2010	1990	2000	2010
A. Over 70% indigenous population	51.5	60.4	52.6	60.4	68	62.3	79.5	83.3	82.3
B. Between 40% and 69% indigenous population	50.2	64.8	57	59.4	72.2	66.6	79.3	86.6	85.6
C. Less than 40% indigenous population	49.1	57.2	51.6	58.6	65.5	61.8	78.9	82.4	82.4
D. Scattered indigenous population	53.7	64.7	61.4	62.5	72	70.8	81	85.7	88
E. No indigenous population	54.3	61.5	56.6	63.3	69.5	66.3	81.7	85	85.4
Ratios	1990	2000	2010	1990	2000	2010	1990	2000	2010
A/A	1	1	1	1	1	1	1	1	1
B/A	0.97	1.07	1.08	0.98	1.06	1.07	1	1.04	1.04
C/A	0.95	0.95	0.98	0.97	0.96	0.99	0.99	0.99	1
D/A	1.04	1.07	1.17	1.03	1.06	1.14	1.02	1.03	1.07
E/A	1.06	1.02	1.08	1.05	1.02	1.06	1.03	1.02	1.04

Source: Own elaboration, based on CONEVAL (2010), INEGI (1990; 2000; 2010).

Annex 5: Population share living in poverty, Municipality level, Mexico, 2010
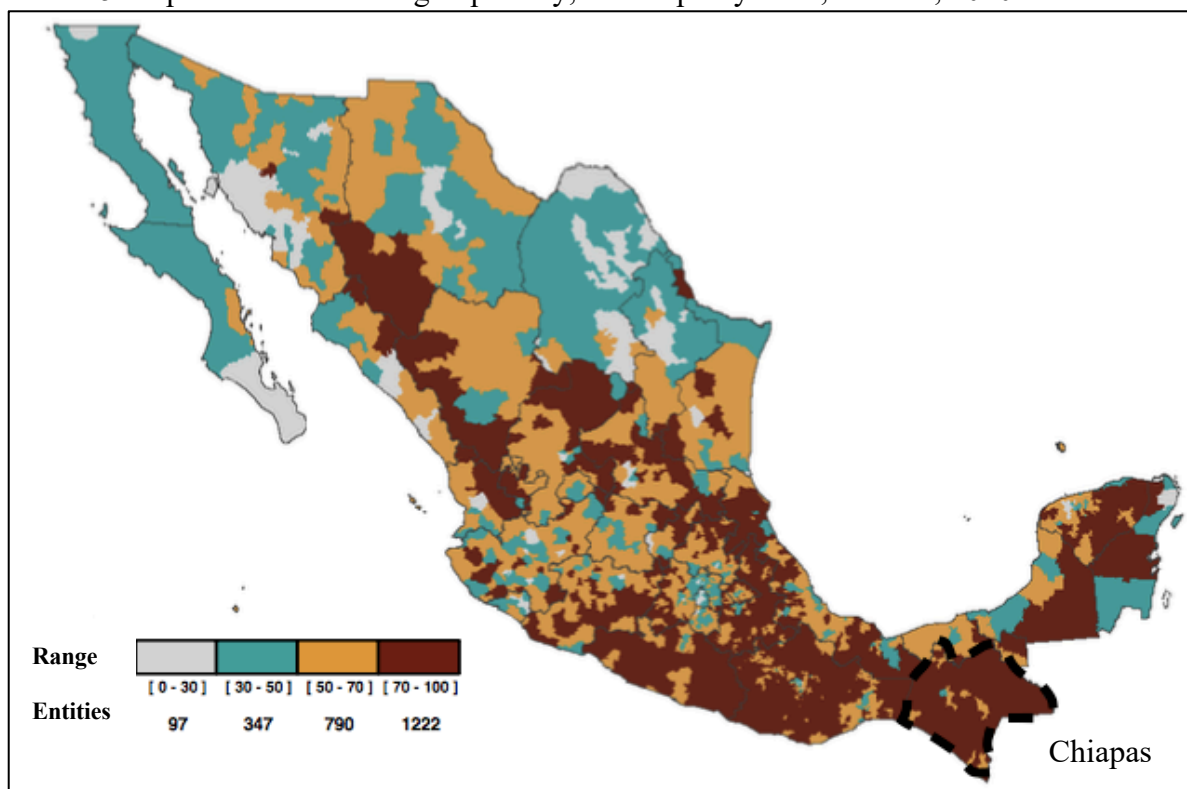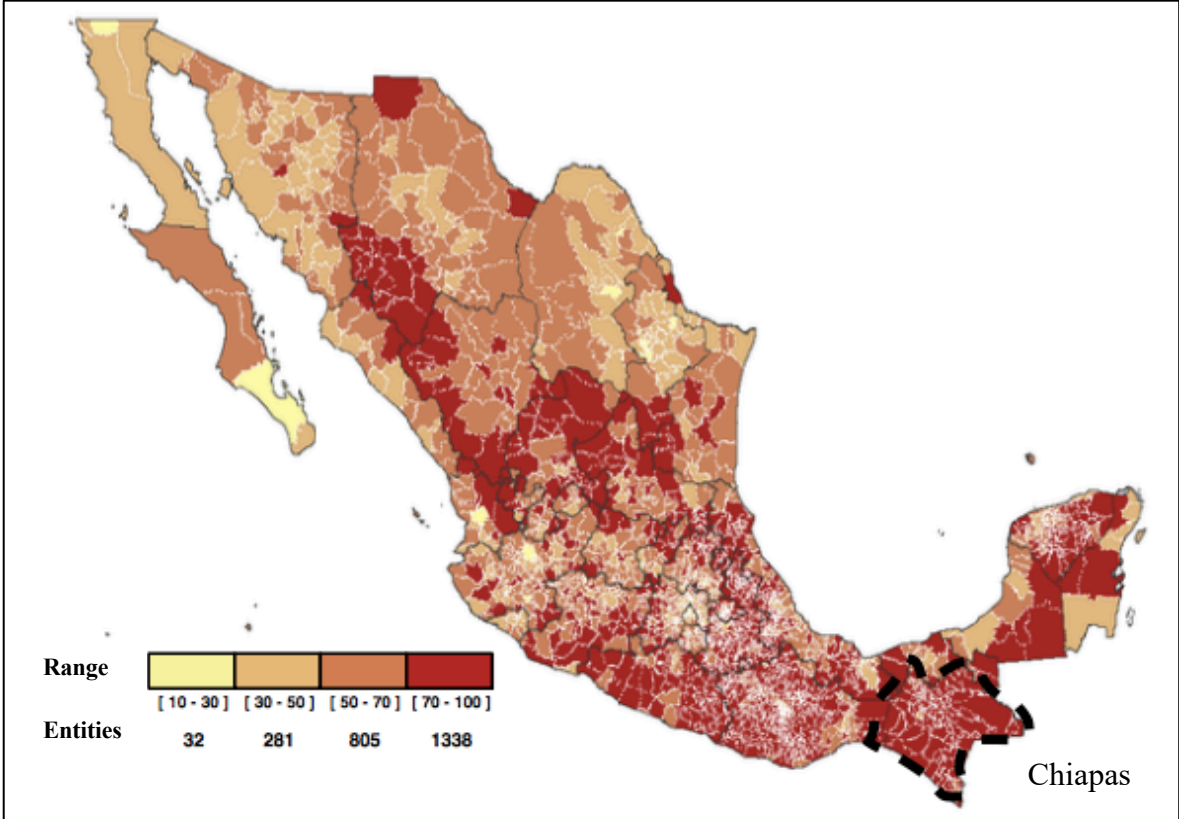

Source: CONEVAL (2010).

Annex 6: Average number of social deficits of the population living in poverty, Municipality level, Mexico, 2010
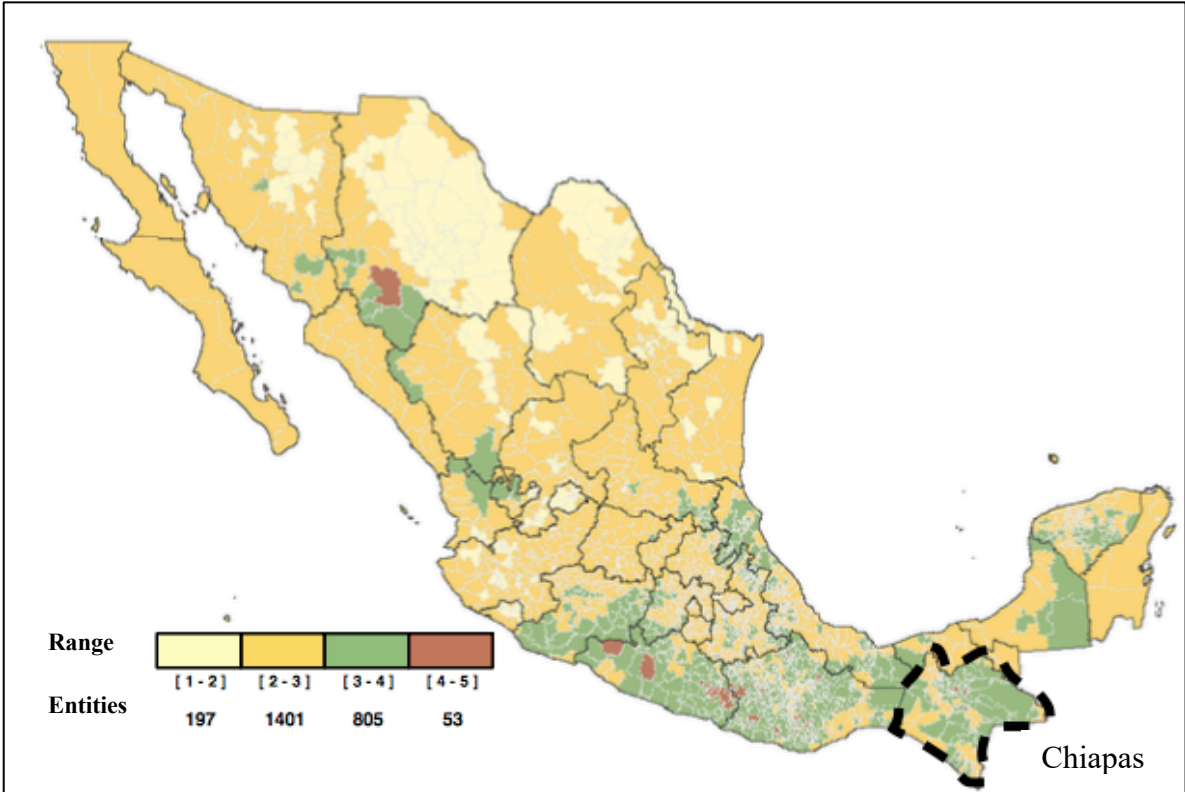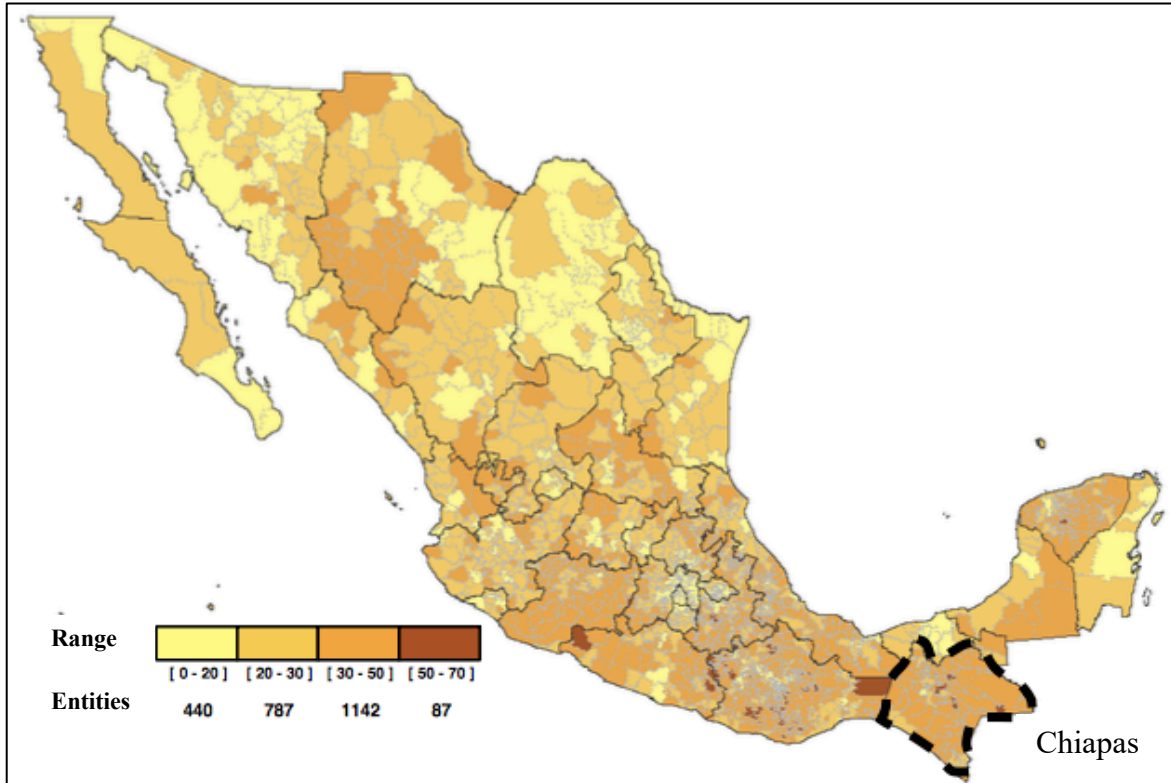

Source: CONEVAL (2010).

Annex 7: Population share with an income below the line of well-being, Municipality level, Mexico, 2010
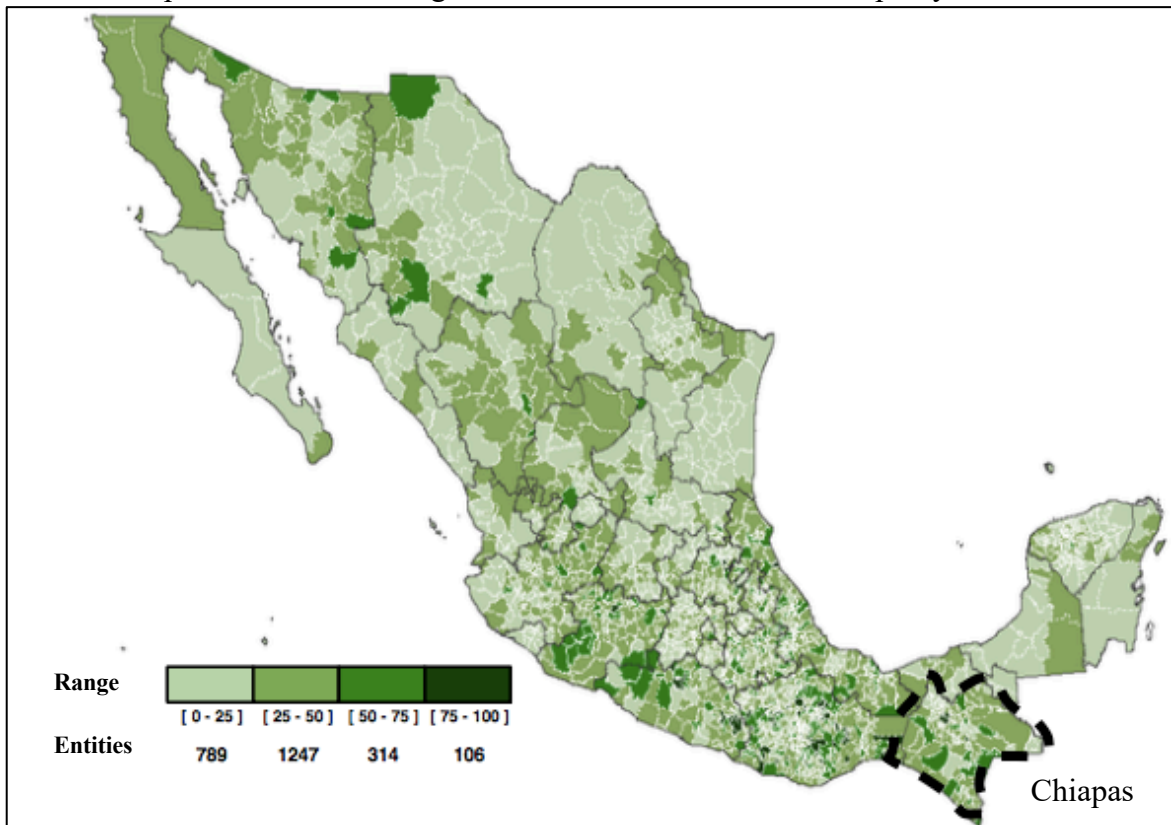

Source: CONEVAL (2010).

Annex 8: Population share with an educational gap, Municipality level, Mexico, 2010

Range	[0 - 20]	[20 - 30]	[30 - 50]	[50 - 70]
Entities	440	787	1142	87

Source: CONEVAL (2010).

Annex 9: Population share lacking access to health services, Municipality level, Mexico, 2010

Range	[0 - 25]	[25 - 50]	[50 - 75]	[75 - 100]
Entities	789	1247	314	106

Source: CONEVAL (2010).

Annex 10: Population share lacking social security, Municipality level, Mexico, 2010
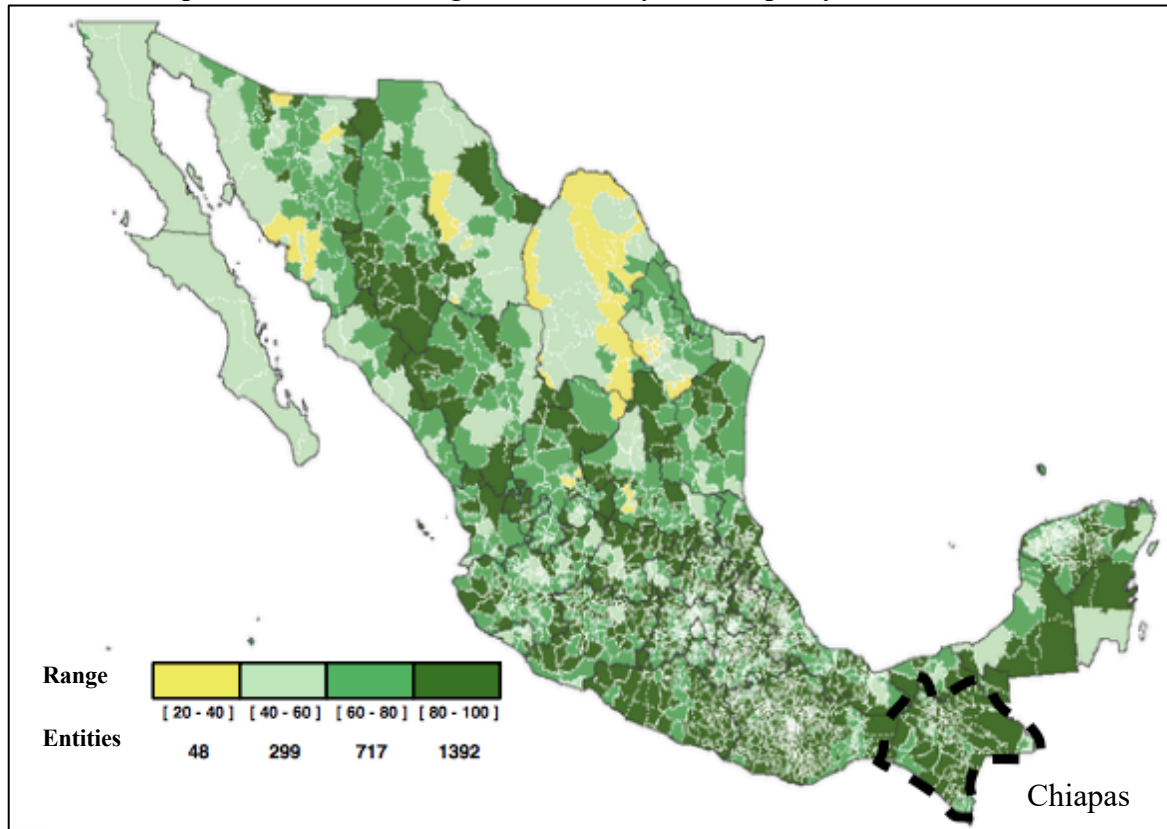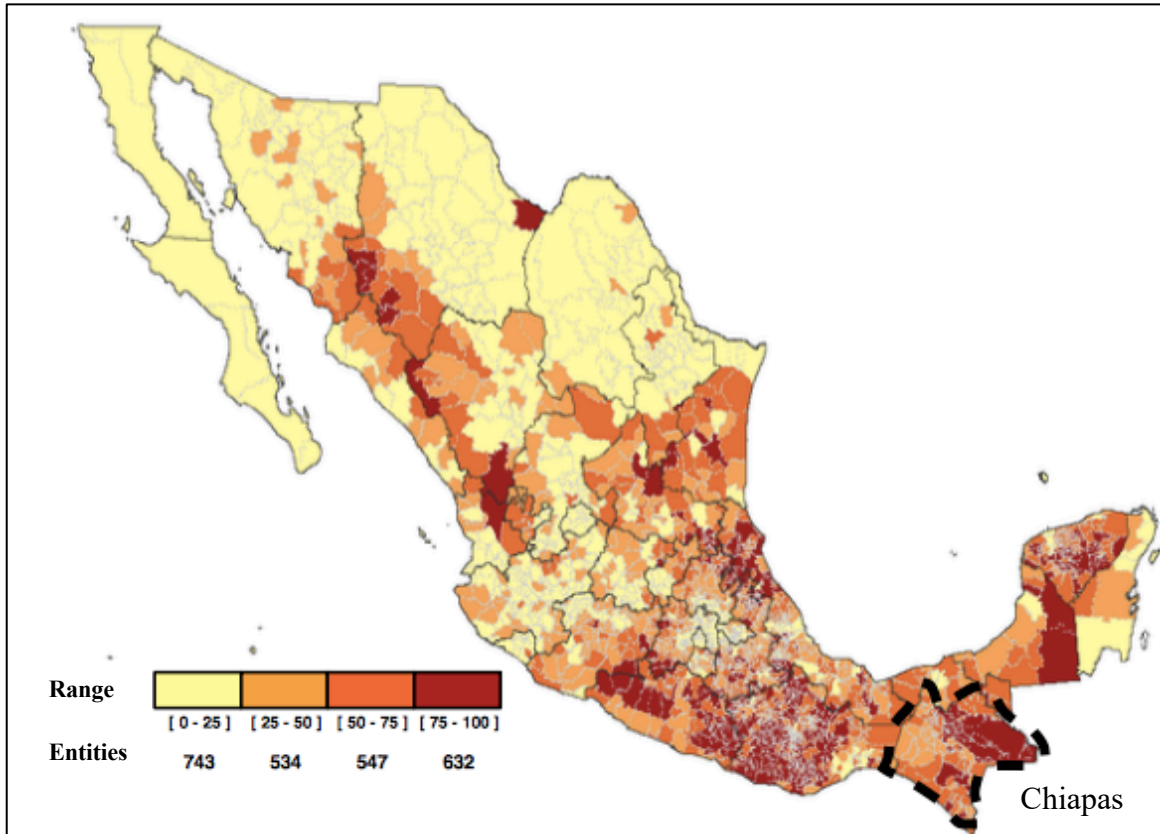

Source: CONEVAL (2010).

Annex 11: Population share lacking quality and space in the living facilities, Municipality level, Mexico, 2010
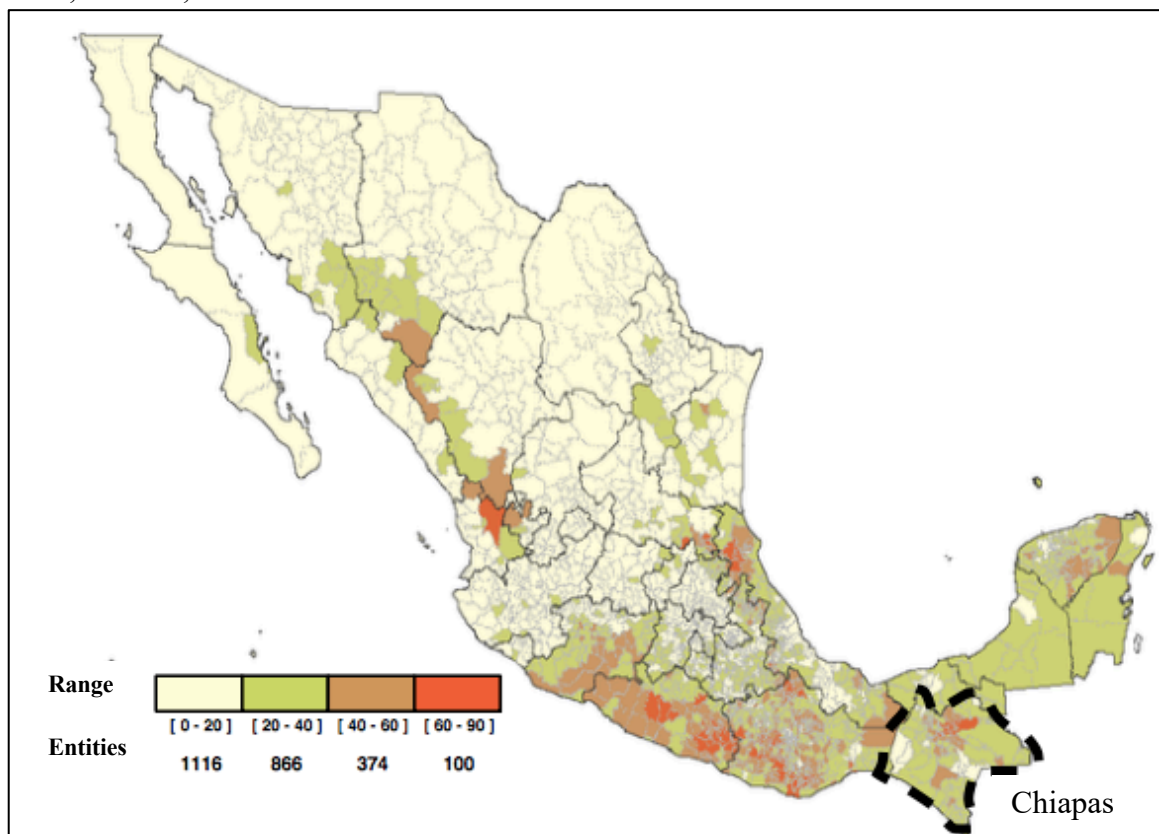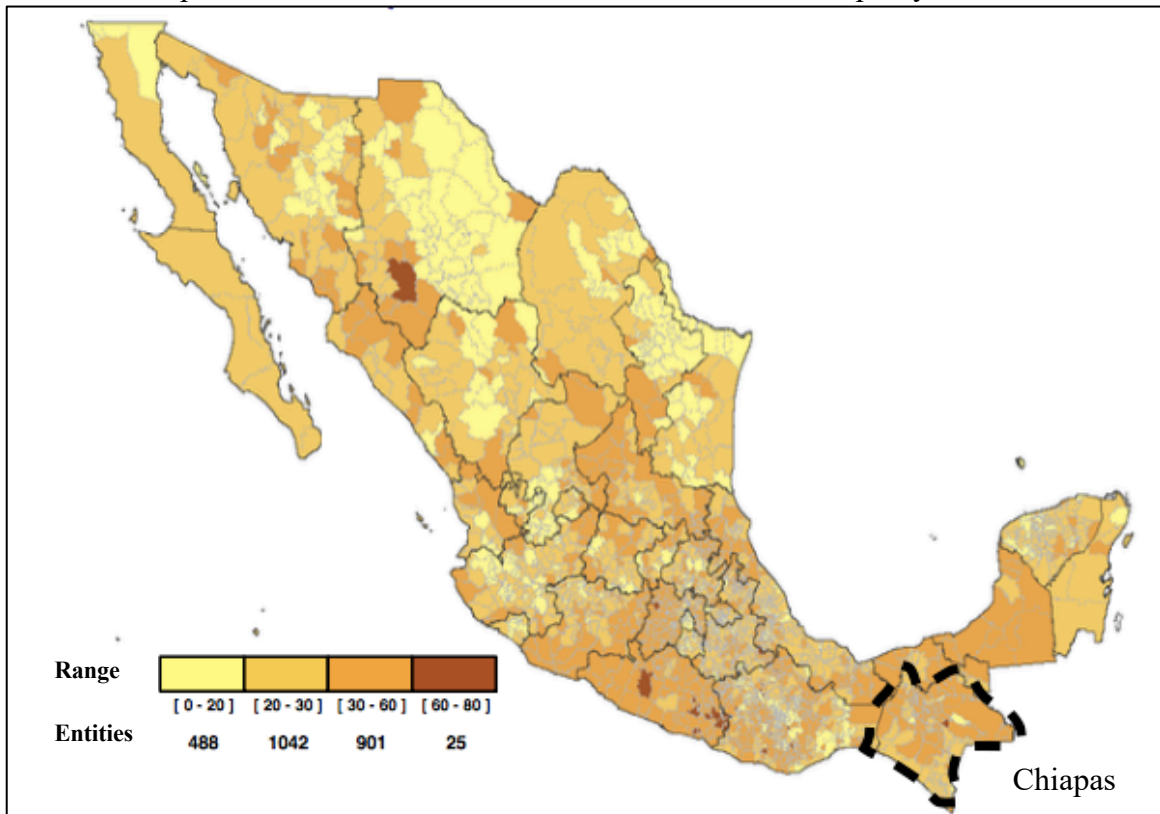

Source: CONEVAL (2010).

Annex 12: Population share lacking basic services in the living facilities, Municipality level, Mexico, 2010

Source: CONEVAL (2010).

Annex 13: Population share with insufficient alimentation, Municipality level, Mexico, 2010

Source: CONEVAL (2010).