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The Formation of the Diminutive in Brazilian Portuguese

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ABSTRACT

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Although the Portuguese diminutive has been analyzed for centuries, there is a lack of descriptive experimental data regarding how native speakers form the diminutive including participants from each state in Brazil. For this study, 1,053 native speakers from each of the 26 states and the federal district of Brazil filled out an online survey, providing information about their age, gender, birth state, and current state of residence in Brazil. Participants selected the form(s) of the diminutive which they would use for 60 test words. Results indicate that the most influential factors in the formation of the diminutive are the age and state of origin of the participant, in addition to the final phone and stress of the word being diminutized. An apparent time shift in diminutive formation is seen in the diminutive endings of *-inho* and *-zinho*.

Keywords: Brazilian Portuguese, diminutive, experimental approach

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1 Introduction

One of the characteristics of the Portuguese language is the possibility of creating a diminutive form of a word to show that it is small or endearing, to express familiarity or disdain, or to indicate that it lacks importance (Tavares, 1999). Analytic forms of the diminutive use separate marker words (such as *little* in English and *pequeno* (little) in Portuguese) as modifiers. Synthetic forms of the diminutive commonly add suffixes to modify a word and express the diminutive (Schneider, 2012). Although the use of the diminutive is less common (especially in synthetic forms) in English, than it is in Portuguese, it is illustrated in words such as *Mommy* and *horsey* (Rocha, 2016). The diminutive in Portuguese is most often formed by adding *-inho/a* or *-zinho/a* to the base of a word (Perini, 2002). For example, for words that end in *-a*, *-e*, and *-o*, adding the form *-inho/a* is usually preferred, which replaces the final vowel in the word, for example:

casa	-	***casinha***
'house'	-	'little house'
gato	-	***gatinho***
'cat'	-	'little cat/kitten'

Words that end in consonants, diphthongs, or stressed vowels will normally take *-zinho/a* as an addition to the end of the word:

pão	-	***pãozinho***
'bread'	-	'little bread'
amor	-	***amorzinho***
'love'	-	'little love, sweetheart'

Although *-inho/a* and *-zinho/a* are the most common ways to form the diminutive, other endings, such as *-im* or *-(z)ito/a*, are also used, such as:

amor	-	***amorzim***
'love'	-	'little love, sweetheart'
casa	-	***casita***
'house'	-	'little house'

Despite the fact that explanations for the way the diminutive is formed are clear cut in Portuguese grammars and textbooks, variation exists in how native speakers actively form the diminutive in everyday speech. Linguists have debated whether there exist two ways to form the diminutive, or if *-zinho* is simply a variant of *-inho* (Bisol, 2010). Numerous articles have been written regarding the diminutive, as will be discussed in Chapter 2, analyzing its formation from the perspective of several linguistic theories. However, there is little data regarding which forms of the diminutive 21st century native speakers of Brazilian Portuguese use in their everyday conversation and which social factors impact that decision, especially looking at Brazil as a whole. While research in the last decade has begun to provide data describing social factors affecting diminutive formation in certain cities and states in Brazil, there are no studies comparing data from multiple areas across Brazil as a whole. This study seeks to answer the question of how Brazilians today choose to form the diminutive and if certain social factors, such as age and gender, influence that formation. The answer to this question will provide new knowledge as to how the Portuguese language is evolving in real time as well as give insight into what diminutive forms are used.

To this end, over a thousand native speakers of Brazilian Portuguese, scattered throughout each state in Brazil, were surveyed as to which form of the diminutive they would use for 60 different words. Demographic data of age, gender, and location of birth and current residence in Brazil was also obtained for the analysis. The relationship between the diminutive forms and the participants' age, gender, and location in Brazil was analyzed. Results indicate that the age of the speaker and their state of origin and residence are the most influential factors in the formation of the diminutive. This thesis will proceed as follows: Chapter 2 will be a review of the existing literature, Chapter 3 will discuss the experiment conducted and the participants involved, Chapter 4 will analyze the results of the experiment, and Chapter 5 will discuss the conclusions of the study and give recommendations for future research.

Chapter 2 Literature Review

Many languages use the diminutive to express an idea of something small or endearing, to express familiarity, or to show disdain or irony. As Portuguese evolved from Latin and became its own language, later spreading from Portugal to Brazil and other areas of the world, its use of the diminutive developed as well (Santana, 2017). Documentation regarding examples of diminutive usage and analysis are abundant, and although it is a commonly studied subject, there is a lack of descriptive studies comparing diminutive formation in different areas of Brazil. This chapter will discuss a selection of notable writings regarding the study of the diminutive throughout history in chronological order, which will provide a base and background for this study. By reviewing the literature in chronological order, the pattern of research topics through time can be noted. Following the chronologically-ordered discussion, a final section will summarize the focus of recent literature and the gap in recent studies pertaining to social variables affecting diminutive formation.

2.1 Early Studies: The Diminutive From the 13th to 19th Centuries

The subject of the diminutive in the Portuguese language has been studied for centuries. Although documentation regarding the evolution of early Portuguese from Latin could be considered, this literature review will begin with studies regarding thirteenth century Portuguese, focusing primarily on accounts regarding the diminutive. In his doctoral dissertation regarding the diminutive suffix between the thirteenth and twentieth centuries, Santana (2017) analyzed corpus data of archaic Portuguese for uses of the diminutive. His findings showed analytic forms of the diminutive (using separate words such as *pequeno* (little) or *moy/muy* (very) to indicate the diminutive form) found in Portuguese texts from the fourteenth to sixteenth centuries. In addition, there are also examples of synthetic forms, which add *-inho* to the root word, such as *cedinho* (early). Santana highlighted that although his study had not found examples from the thirteenth century for the suffix *-inho* preceded by *z*, the diminutive *-zinho* did exist in the form of the suffix *-inho* preceded by the consonants *c, s,* and *ç*.

Starting in the sixteenth century, the diminutive suffix was mentioned in grammar publications. Oliveira mentioned the diminutive briefly in the first Portuguese grammar (1536).

He considered words in the diminutive to be derivational words, referred to as "*palavras tiradas*," and stated that the general rule is that diminutives end in *-inho* or *-inha* such as *moçinho* or *moçinha* (young man/woman). This explanation does not give options for other endings such as *-zinho/a*.

Barros (1540) gave an explanation regarding the use of the diminutive in his grammar. He included examples ending in *-zinho/a* and *-inho/a*, and stated that there are additional endings which are more in accordance with the will of the people than with the rules of grammar:

> Nome Diminutivo é aquelle que tem alguma diminuição do nome principal donde se derivou: como de homem, homenzinho, de molher, molherzinha, de moço, mocinho, de criança, criancinha. E outros muitos se formam e acabam em diferentes terminações; mais per vontade do povo que por regra de boa Grammática (Barros, 1540, p. 7).

Barreto (1671) defined the diminutive on pages 43-44 of his *Ortografia da língua portugueza*, stating the purpose of the diminutive and giving the examples of *montinho* from *monte* (mountain), *raminho* from *ramo* (branch), and *pobrete* from *pobre* (poor). In addition to *–inho* and *-zinho* examples, Barreto specifically mentioned an example with a different diminutive ending: *-ete*.

A little over a century later, Barbosa (1822) gave a further explanation of the diminutive in the first edition of his grammar. He stated:

> Os diminutivos são os que mudando a terminação de seus primitivos, lhes diminuem mais ou menos a significação (...). Os que diminuem mais acabam ou em inho, inha, quando os primitivos terminam em vogal, consoante, como Filinho, Filinha, Mulherinha, Rapazinho; ou em zinho, zinha, quando os primitivos terminam em diphthongo, como Homenzinho, Leãozinho, Paizinho, Mãezinha. O z euphônico faz-se necessário na derivação d'estes diminutivos para evitar o hiato nascido do concurso de três vogaes. Porem quando o mesmo z se emprega sem esta necessidade nos que não acabão em diphthongo; parece fazer sua differença nos mesmos diminutivos, como se vê nestes dois Mulherinha, Mulherzinha (J. S. Barbosa, 1822, p. 83).

As shown in the quote above, Barbosa expanded on the previous definition of the diminutive by Oliveira by mentioning *-zinho* in addition to *-inho*, similarly to Barros, but refered to them as being the same form. The purpose of the *z*, according to Barbosa, is to avoid the hiatus that would otherwise be formed in the word. He also mentioned the existence of multiple forms of the diminutive, citing the example of *mulherinha* and *mulherzinha* (woman).

Freire (1842) also mentioned both *-inho* and *-zinho* forms of the diminutive, and like Barbosa acknowledged the use of *-zinho* when the modified word ends in a consonant or to avoid the hiatus. He also cited examples of variation in forming the diminutive, such as *peixezinho* in addition to *peixinho* for *peixe* (fish), *casinhota/casinha* for *casa* (house), *pobrinho/pobrezinho* for *pobre*. However, unlike Barbosa, Freire considered *-inho* and *-zinho* to be two separate forms of the diminutive rather than the *z* being inserted into the suffix *-inho*.

Ribeiro (1881) described the diminutive in his grammar, not only explaining the usage, but also dividing the suffixes into two categories: primary and secondary. The primary diminutive endings he listed as *-inho* and *-ito*, and the secondary diminutives were *-ejo, -el, -ello, -ete, -eto, -elho, -ico, -im, -ilho, - isco, -ola, -olo, -ote, -oto*. According to Ribeiro, the *z* was a consonant that would be added to the mentioned diminutives as part of the derivation. Ribeiro was also among the first to specifically mention the use of the diminutive with given names, such as *Joãozinho* for *João* and *Pedrinho* for *Pedro*. Descriptions of the diminutive with examples of possible endings continued into the twentieth century, with more linguists beginning to study the diminutive and question the reasoning behind its structure.

2.2 The Diminutive in the 1900s

The twentieth century saw an increase in publications regarding the diminutive, with more analyses and theories emerging in addition to descriptive records. Grammars continued to include the diminutive in their descriptions of the Portuguese language. The grammar published by Maciel (1914) described the diminutive as being *-inho* with the affix of *z* in oxytone words or when the modified word ended in two vowels or nasal sounds, such as *sabiàzinha* (thrush bird), *labiozinho* (lip), and *cãozinho* (dog).

Although many notable linguists began to publish writings about the diminutive in journals as well, grammars continued to include information about the diminutive. One notable

contribution was Said Ali's description in his grammar (1923). Here he stated that the diminutive is principally formed by adding *-inho* or *-zinho*, although similar suffixes of *-ito* and *-zito* can be used at times, such as in *reizito* (king) and *cafézito* (coffee). A few other diminutives exist in specific cases as well, such as *-ote, -ola, -ucho*, and *-eta* in words such as *fidalgote* (nobleman), *rapazola* (young woman), *bandeirola* (flag), *papelucho* (paper), *naveta* (ship). He further explained the diminutive by giving rules of when to use *-inho*, *-zinho*, or either, on page 54 of his grammar:

> Os nomes que acabam nas vogaes simples atonas -o, -a, tomam ora a terminação -inho, -inha, ora -zinho, -zinha. Aos terminados em l ou r accrescenta-se -zinho, -zinha de preferencia a -inho, -inha. Os que acabam em outro phonema accrescentam -zinho, -zinha. Exemplos: — livro: livrinho ou livrozinho; cadeira: cadeirinha; papel: papelzinho ou papelinho; flor: florzinha; jardim: jardimzinho; café: cafézinho; irmão: irmãozinho; chapéu: chapeuzinho. — Em lugar de -inho, -zinho, pode-se empregar, ás vezes, -ito, -zito, como: reizito, cafézito (Said Ali, 1923, p. 54).

Another notable contribution was published not in a grammar, but in Lisbon's Centro de Estudos Filológicos' journal by Skorge (1957). She began by stating that the purpose of her publication was to give a general idea of the vitality and use of the diminutive at that time. Although there are many forms of the diminutive in Portuguese, as noted in previous descriptions of the language, *-inho* is the most productive form, followed by *-ito*. The suffix *-ico* is stated to be more of a regional ending rather than a Portugal-wide form. Skorge also expounded upon less-common suffixes, such as those comprising *-lh- (-alho, -elho, -ilho, etc.), -elo, -ch-, -isco, -ç-,* and *-nch-*. She gave explanations as to their origin, where in Portugal they are used, and how frequent their usage is. Skorge mentioned the possibility of multiple diminutive suffixes in a single word in a section called *"acumulação de sufixos."* Examples of this include *pequinininho* (similar to *itty bitty* in English) and *riachozinho/riachozito* (small stream). Different regions of Portugal have variation in their usage of the diminutive, and Skorge gave examples of several different suffixes, including where and how they are used. A large chapter (chapter C, pages 68-87) of her writing is regarding the relationship between *-inho* and *-zinho*. According to Skorge, *z* is part of *-inho* as an infix, similar to *c* in Latin (such as in navicella). She stated that

the existing writings regarding the rules of when to use *-inho* or *-zinho* are scarce and have unsatisfactory answers. Regarding words that can take either *-inho* or *-zinho*, Skorge observed that the use of one or the other could be based on the rhythm of the phrase, and that monosyllabic nouns only use *-zinho*, whereas any other situation could have either form according to the will of the speaker. She also stated that the more educated speakers would prefer *-zinho* as opposed to *-inho*: "entre o povo emprega-se muito *-inho*. Os portugueses cultos tendem a empregar diminutivos em *–zinho*" (1957, p. 52).

Bechara (1961) explained that *-inho* and *-zinho* (and consequently *-ito* and *-zito*) are not always interchangeable, such as with nouns ending in nasals, diphthongs, or tonic vowels. Words ending in *r* usually don't take *-inho* as well, although there are exceptions. Those that end in *s* and *z* only take *-inho* and *-ito*, such as *lapisinho* (pencil).

> Nem sempre é indiferente a opção por -inho ou -zinho. Não toleram -inho (e -ito) mas -zinho (e -zito) os nomes terminados em nasal, ditongo e vogal tônica: cãozinho, cãozito, irmãzinha, albunzinho, raiozinho, bonezinho, urubuzinho. Também se incluem os terminados em -r, embora aí haja alguns em -inho, facultativamente: serzinho, cadaverzinho, caraterzinho; colher admite colherinha, ao lado de colherzinha. Os terminados em -s e -z só toleram -inho (-ito): tenisinho, lapisinho, rapazinho (Bechara, 1961, p. 362).

Another grammar, published by Cunha and Cintra (1985), also listed common diminutive suffixes, citing *-inho, zinho, -im, -zim, -ito, -zito, - ico,* and *-isco* as the principally used endings.

Subsequent publications continued to acknowledge *-inho* and *-zinho* as the most productive forms of the diminutive, citing examples of usage similar to those above. Debates emerged over whether they are different forms of the diminutive or the same, but with an addition of a *z*, and writings shift to be more analytical and focused on syntactic theory rather than grammar-style descriptions. Mauer Jr. (1969) stated that *-zinho* is the equivalent of *-cito* in Spanish and considered it to be a variant of *-inho*, as *-cito* is a variant of *-ito* in Spanish. However, he did say that the use of *z* gives *-zinho* a certain type of autonomy and makes it seem more independent.

Another publication about the diminutive published shortly after is Leite's doctoral dissertation (1974), in which she approached the diminutive from a Generative standpoint and defended that *-inho* is an affix and *-zinho* is a compound affix. Leite defended her perspective by citing the inflection of number and gender of the word that *-zinho* is added onto, and she considered *-inho* the addition to words ending in consonants and *-zinho* for words ending in vowels.

Câmara Jr. (1975) analyzed the formation of the diminutive in Brazilian Portuguese, in which he considered *-zinho* to be a derivational suffix by juxtaposition and an allomorph of *-inho*. He considered the use of *-zinho* imperative when a word ends in a tonic vowel, such as *cão* (dog). "Assim, em português, o elemento lexical de estrela apresenta uma variante, sem *-r-* medial, no adjetivo estelar, por exemplo. Ao lado de *gatinho*, temos *cãozinho*, com o sufixo gramatical variante, ou alomórfico, *-zinho* em vez de *-inho*." (1975, p. 25).

In his master's thesis, Moreno (1977) discussed the diminutive and considered *-inho* and *-zinho* to be two separate suffixes. He stated that their use is dependent upon the structural attributes of the specific words in which they appear.

Vieira (1978) published her master's thesis on the diminutive analyzed using Standard Generative Theory, in which she concluded that *-zinho* is the base form. She stated that *-inho* is the derived form and is achieved through agglutination in certain situations by applying the morphological *z* deletion rule. "Foi obtida a forma derivada *-inho* por aglutinação em determinados ambientes, pela aplicação da regra morfológica de queda do *z*, de caráter opcional, na maioria dos casos... Desta forma, a gramática revelou-se mais simples, com uma só entrada no léxico para *-zinho* e tornou-se mais explícita, eliminando-se as aparentes exceções" (1978, p. xiii).

Menuzzi (1993) considered *-inho* and *-zinho* to be the same underlying diminutive morpheme, or rather, two allomorphs in complementary distribution. He considered both *-inho* and *-zinho* to be suffixes prosodically and analyzes the necessary rules and several examples proving his claims.

Lee's doctoral dissertation (1995) briefly mentioned the diminutive in the context of compound words, saying that it is uncommon but possible for the diminutive to be found in compound words. The examples Lee cited are *guarda-roupinha* (wardrobe), *homenzinho-rã*

(frogman), and *horinha-extra* (overtime). He emphasized that lexical compounds such as the first example are treated as a single unit and the second two examples are post-lexical compounds with a nucleus that can conserve its independent word state. Four years later, Lee (1999) published an article specifically regarding the formation of the diminutive in Brazilian Portuguese. He explained that the diminutive formation must have an independent status in grammar due to its characteristics being different from those of derivational, inflectional, and compound suffixes. As far as the application of the diminutive in different levels of the word formation process, Lee stated that the diminutive occurs at level B, where inflectional forms are added, as opposed to level A, where derivational and compound lexical processes occur.

Publications from the end of the twentieth century continued to debate the status of *-inho* and *-zinho*. As will be shown in the next subsection, research from this time included a larger number of analyses and syntactic arguments as compared to past centuries and fewer descriptions of what native speakers are doing regarding diminutive formation.

An exception to the trend of syntactic analyses is an article published by Tavares Jr. (1999), in which he studied the speech of fishermen in the northern Rio de Janeiro region. His research focused on analyzing the possible semantic meanings of *-inho* and *-zinho* using the corpus of the *Atlas Etnolinguístico dos Pescadores do Estado do Rio de Janeiro* project which interviewed fishermen by trade with little to no formal education. Tavares determined three semantic meanings for the use of the diminutive: intensity ("*Sardinha é gostozinha, é a mais saborosa*"/ "Sardines are delicious, it's the tastiest [fish]"), affectivity ("*Tenho uma filinha agora*"/ "I have a daughter now"), or pejorativity ("*Ninguém come ... é um peixinho ruim*"/ "No one eats it… it's a bad fish"). The study also confirmed that factors such as age and location of origin affect the use of the diminutive. Regarding age, older participants tended to use the diminutive suffix to show semantic meaning, whereas the younger participants tended to use free morphemes such as *mais* (more), *menos* (less), *bom* (good), *ruim* (bad), etc. Participants from one location, São João da Barra, of all age groups, avoided using *-inho/-zinho* in any of the three semantic meanings mentioned and generally only used it referring to size. Tavares also found usage of multiple diminutive suffixes in the same word, with each suffix showing a different semantic meaning, such as: "*Esse é um passarinhozinho que canta aí*" ("That's a little birdy that's singing there") where *-inho* would be diminishing for size and *-zinho* for affectivity.

2.3 The Diminutive in the 21st Century

While a large quantity of current research regarding the diminutive continues to be done through the lens of syntactical analyses, Optimality Theory, and other analytical methods, more studies are emerging similar to Tavares' which focus on gathering data of what native speakers are doing with language. Although studies continue building upon each other, the most recent studies usually focus on either syntactic/morphological analysis with examples from corpus data or analyzing results collected from surveying native speakers specifically for the study.

Villalva (2000) explained that diminutive suffixes can be found in contemporary Portuguese being added to several classes of words (nouns, verbs, adjectives, interjections, etc.). The most common diminutive suffixes, *-inho* and *-zinho*, differ from most derivational and inflectional morphemes in that they do not change syntactic classification or modify the base's morphosyntactic/morphosemantic properties. Villalva considers *-inho* and *-zinho* to be separate suffixes as they present different properties from each other. She listed several contrasts between the forms to make her point, such as the fact that *-inho* diminutives only have one lexical accent (*sapatínho*/shoe) as opposed to *-zinho* forms which have two (*chapéuzínho*/hat).

Cagliari and Massini-Cagliari (2000) used Optimality Theory to study consonantal epenthesis in Portuguese. Although this study did not focus exclusively on the diminutive, the authors considered *-inho* to be the morpheme and state that the *z* in *-zinho* functions as an epenthetic consonant in specific contexts to follow language rules. The authors concluded that the insertion of the consonant *z* shows that the word root plus the diminutive follow the rules of derivation, and epenthetic consonants are needed in order to avoid the hiatus or to fill the onset of the first syllable of the second morpheme.

Ferreira (2005) wrote about the phonological effects of vowel alternation in the formation of plural diminutives with final *s*, with Output-Output correspondence being a central idea of his study. By using Optimality Theory, Ferreira showed that final *s* triggers phonological changes to the bases of words to which the *s* attaches. He discussed the affixal nature of diminutives (rejecting the idea of infixation or compounding) and explains how faithfulness constraints enforce similarities between diminutive words and non-diminutive forms. For Ferreira, *-inho* and *-zinho* are two allomorphs: *-inho* is added onto the root, such as in *livro>livrinho* (book), and *-zinho* is added onto the word, such as in *flor>florzinha* (flower).

Bachrach and Wagner (2007) published a study analyzing the formation of the diminutive in terms of syntactic adjunction. Their study looked at the diminutive through a syntactic lens and analyzed specific morpho-phonological characteristics of the diminutive. Bachrach and Wagner claimed that because the diminutive can take different scopes, which is a general property of adjuncts, it explains the variance in forms of the diminutive.

Teixeira (2008) analyzed the formation and use of *-inho* and *-zinho* in southern Brazil, specifically Porto Alegre and Curitiba. She analyzed two sets of data, one being productivity test responses from 20 participants forming the diminutive for nonce words and another being interviews from Projecto VARSUL of 24 speakers from Curitiba. For the productivity test, participants were given nonce words, defined as phonotactically appropriate but non-existing words, in the context of a sentence where they needed to select the form (ending in *-inho* or *-zinho*) that they would use. Results from analyses of both data sets showed *-inho* as the most used suffix, with *-zinho* being preferred in the context of nonce words. Participants followed the established pattern of diminutive formation explained in the literature, although there were cases where usage was variable. Analyses considered factors of the linguistic nature of the words in addition to the age, age group, sex, location (Porto Alegre and Curitiba), and educational background of participants.

Among the publications regarding the diminutive, there have been many which serve as a base for linguists to continue expanding upon and which shift the direction of the research. One such publication was written by Bisol (2010), which returned to the description of diminutive formation based on Barbosa's 1822 explanation of *z* being an epenthetic consonant. Bisol used Optimality Theory to analyze the forms of *-inho* and *-zinho* with the intent of answering the long-debated question: are *-inho* and *-zinho* one or two morphemes? She presented an analysis focusing on the morphological and phonological aspect rather than the semantic properties of the diminutive.

Bisol began with an explanation regarding the base of a diminutive and its thematic vowel, citing examples of nominal morphological classifications and their thematic/athematic vowels, such as *parede* (wall) and *café* (coffee), and noting that Portuguese is a primarily vowel-ending language and thus the majority of words are thematic. Although the thematic/athematic root of the word is what constitutes as the base of the diminutive, it may not

be seen directly at the word surface, such as *mares* (oceans). The restrictions of diminutive formation (referred to, at times, as DIM) are essential to the Optimality Theory analysis and are laid out and explained, such as ONSET (where each syllable needs to have onset). In addition to explaining the restrictions and their use in the study, Bisol highlighted the restriction ANCHOR, regarding where the plural S must be anchored in the word, and the effect it has on word formation as it adjusts itself to thematic/athematic words, at times resulting in a supporting vowel, such as in *flor* (flower) becoming *flores*. Bisol then presented several subsections, where each includes Optimality Theory tableaus and examples with explanations of each situation. The subsections are, in order: avoidance of the hiatus, faithfulness, and morphological and phonologic interface. A subsequent section continues the analysis, although this section focused specifically on variation in the diminutive and the use of *z* for epenthesis. Each situation that introduces *z* does so due to a structural demand, such as preserving ONSET or morphological traces. This section is also split the following subsections: DIM and grammatical gender, DIM and OCP (Obligatory Contour Principle, which forbids representations in which identical elements are adjacent), DIM and nominals ending in hiatus, and DIM and written accents. Like the previous section, each subsection included examples and tableaus to illustrate the points being made. Bisol concluded arguing that the Optimality Theory analysis of the diminutive provides ample evidence to justify the principal properties of the diminutive being the following: avoiding the hiatus, faithfulness to input traces, faithfulness to the base's syllabic structure, and reoccurring output forms in the plural of certain athematic-based diminutives. Thus, the diminutive form is the singular morpheme of *-inho*, based upon the evidence analyzed. The author stressed that interpreting the *z* as an epenthetic consonant is not a novel idea, but rather something proposed in the eighteenth century which also extends to other derivational suffixes. Bisol ended on a brief note regarding multiple diminutive endings. The use of the double diminutive (such as *-inhozinho*) or *-zinho* where the common form would be *-inho*, such as in *patozinho* vs. *patinho* (duckling) isn't an error, but rather an abundance of information.

Another study by Villalva (2010) analyzed the formation of the diminutive in European Portuguese. The study surveyed 100 young adult college students, all native speakers of European Portuguese from Lisbon. For the survey, participants filled in blanks in large sets of sentences to form the diminutive. The instructions for the survey asked for participants to form a

diminutive for a noun in a neutral context. The results showed that participants used the diminutive endings of *-inho* and *-zinho* in 89% of cases, with forms such as *-(z)ito*, *-(z)eco*, and *-(z)ico* making up the other 11%. Of all of the endings, *-zinho* was used 65% of the time. Villalva explained that cases with a preference for *-zinho* were due to processing requirements.

Monteiro (2011) defended the idea that the phonetic segments, which often appear between two radicals or a base and a suffix, should be analyzed as autonomous morphemes, even without meaning. For example, the word *flor* (flower) can become *florzinha* in the singular and *florezinhas* in the plural. Monteiro explained that both *z* and *e* are added between the base and suffix, and to avoid any problems with adjacent infixes *z* and *e* should be analyzed as interfixes without specific meaning but following morphophonological rules. Monteiro explained how the concept of being an interfix reduces derivational morphemes, such as in the example mentioned, and the article concluded with a call for more studies regarding interfixation in Portuguese. This study is important as it highlights the complexity of diminutive formation, rather than just being a suffix tagged on to the root of a word.

A second study analyzing the diminutive as an infix was published in the same year by Guimarães and Mendes (2011). This article questioned whether the diminutive in Brazilian Portuguese is a suffix, as traditionally stated in prior research, or an infix. For example, the diminutive in *bolinha* (ball) would be the morpheme *-inh-* between the root and the final vowel. Guimarães and Mendes also considered *-inho* and *-zinho* to be separate lexical items even though they may seem to be allomorphs at first sight. They argued that treating the diminutive as an infix accounts for usual data more naturally than other types of analyses, as seen in examples of words such as *problema* (problem). Because *problema* is never masculine, *probleminho* is not a possible suffix. By treating *-inh-* as an infix and *-a* as the final vowel, the word *probleminha* is analyzed in a more natural way.

In a different vein than infix categorization, Armelin (2011) analyzed the interaction between markers in the diminutive and the augmentative. This research focused on studying whether markers can shed light on the controversial diminutive formation process. She focused her study on the interaction between morphology and syntax and gave a syntactic perspective on diminutive formation. Armelin concluded that diminutives and augmentatives are not adjuncts due to possessing different markers; compositional markers appear after the root and first

categorizer, but non-compositional markers need to connect directly to the root. It is a syntactical requisite to have the augmentative precede the diminutive in the same word, such as in *fogãozinho* (stove).

Another study conducted by Lee (2013) explained that *-inho* and *-zinho* are not allomorphs due to the fact that they possess different properties than inflectional and derivational suffixes. Lee explained the formation of the diminutive and its phonological, syntactic, and morphological properties, highlighting the fact that diminutives show different properties and can be treated as productive suffixes.

Freitas and Barbosa published two subsequent articles in which they studied the formation of the diminutive primarily in Rio de Janeiro. The purpose of the first study (2013) was to analyze the alternation of *-inho* and *-zinho* to determine if there were one or two forms of the diminutive, delineating which factors determine the speakers' choice between one form or the other. There were 40 participants: 17 males and 23 females between the ages of 18 and 26. All had completed high school and were from the dialectal regions of Carioca (33 participants), Fluminense (5 participants), or other (2 participants). Participants were given 10 sample sentences containing uses of *-inho* and *-zinho* and asked to rate each sentence for acceptability using a 1-5 scale. The scale was set up in the following way: #1 *"perfeitamente possível"* (completely possible), #2 *"possível, mas não utilizaria"* (possible but I would not use it), #3 *"indiferente"* (indifferent), #4 *"improvável, raramente utilizaria"* (unlikely, I would rarely use it), and #5 *"não aplicável, nunca utilizaria"* (unacceptable, I would never us it). Participants chose #1 (completely possible) most often with *-inho* and *-zinho* diminutive endings, accounting for 52.8% and 49.8% of #1 responses. Inversely, *-inhozinho* was most commonly scored with a #5 (unacceptable, I would never us it), as it accounts for 75.3% of #5 responses. After analyzing the data with a multi-factor analysis of variance, the results indicated that regional dialect, sex, and age are interaction variables. Additionally, Freitas and Barbosa concluded through the analysis of diminutive choices in the study, that *-inho* and *-zinho* are two distinct diminutive forms. Another interesting finding was that the suffix *-inhozinho* was most commonly used among Carioca women between the ages of 21-23, competing with *-zinho* among the same conditions of use.

Barbosa and Freitas' second article (2014) analyzed corpus data of the Carioca and Fluminense dialectal regions. The purpose of the study was to analyze the formation of diminutives using *-inho* and *-zinho*, their usage frequency, and the probability of using each form (in their most typical uses). Data analyses indicated that *-zinho* is categorical in oxytone roots, whether they be monosyllabic or disyllabic, and that *-inho* tends to be selected for paroxytone words, independent of the number of base syllables. The linguistic environment favors *-inho* when words end in a vowel and favors *-zinho* when words end in a consonant or diphthong. The corpus results showed that *-inho* is the most common/productive. There was also a possible influence between *-inho/-zinho* and sexual orientation and that bisexual women tend to use *-zinho* more and homosexual men use *-inho* more, although the authors encouraged future research in the area to determine result accuracy.

Armelin (2014) published additional research regarding the compositional vs non-compositional forms of the diminutive and augmentative. Until this publication, the majority of diminutive research had focused on examples of compositional forms of the diminutive. For example, the word *vaca*, meaning "cow", can become *vaquinha*, with a compositional (composed of the root word, in this case *vaca*) meaning of "small or young cow" and a non-compositional (not related to the root word) meaning of "pool of money." Syntactically speaking, the compositional and non-compositional forms of the diminutive are formed differently, with separate markers and interactions between those markers and the morphological and syntactical properties of words. Formations using *-zinho* cannot be interpreted non-compositionally, whereas those ending in *-inho* can and may be ambiguous in meaning. For example, the word *carro* (car) can become *carrinho* and mean "small car" compositionally and "sliding tackle" (a move in soccer) non-compositionally. However, *carrozinho* can only mean "small car" and never "sliding tackle." Another characteristic of compositional forms of the diminutive is that these forms may come from many types of words, such as adjectives and verbs, whereas non-compositional forms derive exclusively from nouns. Non-compositional diminutives and augmentatives in Brazilian Portuguese also may determine the formal properties of the structure. For example, the presence of the diminutive in a word may change it from [-animate] to [+animate], such as *almofada* (pillow) becoming not only the compositional *almofadinha* meaning "small pillow", but also the non-compositional *almofadinha* meaning "spoiled person."

Another study focusing on the usage of the diminutive in a specific area of Brazil was conducted by Rodrigues (2015). This study focused on the diminutive endings *-zinho* and *-zim* and the stereotypes of diminutive usage in Minas Gerais. There were 40 participants interviewed for this study, 20 from the city of Mariana (MG) and 20 from Piranga (MG), divided into the following age groups: 9-29, 35-59, 69 and older. In addition to analyzing the conversations for use of the diminutive, additional participants from urban and rural areas of Minas Gerais of a wide range of age and education levels were asked questions about the stereotypes regarding the Mineiro dialect. Results indicated that the younger generation prefers the standard/long form of *-inho* and *-zinho* whereas the older generation prefer the reduced form of the diminutive of *-zim* and *-im*. Another finding was that women use the standard *-inho/-zinho* form more than men, who tend to use the reduced *-im/-zim* form more often. Word class also shows that adverbs have higher likelihood of reduction. Rodrigues gave examples of the standard diminutive compared to what people say and how that played into sex, age, and city. This study focused not only on descriptive diminutive formation, but also the role of linguistic prejudice among the Mineiro dialect. For example, one of the stereotype questions was whether the Portuguese spoken by Mineiros (people from Minas Gerais) was worse, to which 44% of participants responded yes.

Although it is not related to the study of the diminutive in the same manner as previously mentioned publications, an article written in Spanish by Criado de Diego and Andión-Herrero (2016) discussed the importance of understanding the diminutive in the context of teaching Spanish as a foreign language to native Portuguese speakers. The authors used a contrastive analysis to analyze the use of the diminutive in Spanish and Portuguese. An emphasis in this study is the importance of having an awareness of the context in which the diminutive is used, a point which is essential for any speaker of the language. Teachers should make their students aware of the different varieties and uses of the diminutive not only in Spanish speaking countries, but also how the affective and strategic (ironic/pejorative and intense) diminutive is used in Portuguese.

In addition to the aforementioned study comparing the diminutive in Spanish and Portuguese, a publication comparing the diminutive in English and Portuguese was published by Rocha and Vicente (2016). This contrasting study focused on comparing Portuguese diminutives *-inho* and *-zinho* to English diminutives *-ie/-y*, such as *daddy* or *horsey*, in the context of

analyzing whether the diminutive is inflectional or derivational. The authors based their study on individual analyses of the diminutive in the two languages and then compared diminutive usage in similar situations. For example, the semantic purpose of the diminutive in Portuguese is categorized as being subjective (*filinho*(son)), valuative (*timinho* (team)), or diminutive in size (*casinha* (house)). However the classification of the semantic meaning of English forms *-ie/-y* have less of a consensus among linguists, as the diminutive is usually referring to size but can also be used to show appreciation, depreciation, irony, or familiarity. The authors conclude, based on comparative analyses outlined in the study, that the English diminutive falls in the category of being a derivational suffix and is different than in Portuguese.

Armelin (2018) also analyzed the morphosyntactic structure of *-inh* diminutive formation and how it relates to gender projection. Assuming a syntactic approach to word formation, this study proposed that *-inh* is not able to project its label in the syntactic structure. Armelin also explained how *-inh* attaches to the gender projection, which categorizes the root and thus is understood as part of the extended projection of the noun. This makes it so the structure can derive the locality relations between the root, the gender head, and the diminutive morpheme.

Ulrich and Schwindt (2018) published an article regarding the morphological and prosodic formation of *-inho* and *-zinho*. The authors described how Portuguese affixes are joined to the root at the morphological level and to other unstressed syllables at the prosodic level. However, *-inho* and *-zinho* attach to the stem and the prosodic word. Due to the later attachment of *-inho* and *-zinho* during the word formation process (as compared to other Brazilian Portuguese affixes), they are more independent as far as language processes.

Another article published in 2018 used corpus data to study diminutive usage in the Brazilian state of Goiás, specifically in regard to gender marking. Cruz and Oliveira Azevedo (2018) used the *Atlas Linguístico de Goiás* and analyzed 19 interviews from the database with participants from three different cities in the state. The analyses explained the use of the diminutive in words such as adverbs and pronouns in addition to the more common nouns and adjectives. Another finding was that the *-im* diminutive form is used to modify masculine words into neutral forms, such as *netinho* (grandchild) becoming *netim*. Results showed that in 44.4% of cases with a neutral word, the diminutive form *-im* was used by participants.

A study conducted by Simioni and Schwindt (2019) at the Federal University of Bahia (UFBA) surveyed participants at the university regarding the use of *-inho* and *-zinho*. The objective of the research was to find how paroxytone words (stressed on the penultimate syllable, such as *cadeira* meaning "chair") are formed in the diminutive using nonce words, such as *jugurabe*. The study involved 311 participants, 237 women and 72 men, all from the same university (UFBA) between the ages of 18-65. Results indicated that word size didn't affect the diminutive ending, and that paroxytone words ending in [e] favor *-zinho*, such as the nonce word *jugurabe* or the word *cidade* (city).

The final publication that will be mentioned in this subsection was conducted by Pereira (2020). This study is a corpus study of 30 diminutive words which analyzed the formation of the diminutive *-inho* in corpora, however, the words lacked the context in which they were used. A main finding from this study was that the context in which the diminutive is found is important to consider, not only for meaning but also as it affects the formation process. According to Pereira, it is vital, especially in corpus data, to take into account the context of use of the affix rather than the isolated word being used to form the diminutive, as commonly done in classical diminutive analytical approaches. The context in which the diminutive is used conveys different messages, such as to indicate size, familiarity, irony, or affection. This underlying message conveys information about the word itself that is missed when analyzing the word individually rather than in the context in which it originally appears.

2.4 The Use of the Diminutive According to Social Variables

Although the studies mentioned previously are beneficial for seeing the use and formation of the diminutive from a descriptive grammatical point of view or in context of native speakers on a smaller scale, it is difficult to capture an image of what speakers of Portuguese in Brazil as a whole are doing as far as diminutive formation. A study published by Eddington (2019) examined how the factors of age, gender, location, and level of education affect diminutive formation in Spanish. In his study, 656 Spanish speakers from 21 different Spanish-speaking countries filled out an online survey selecting between the long or short diminutive form of 100 base words. The results indicated that "a great deal of variation exists within each country studied, and few participants prefer the same diminutive form for all base words with a similar

structure. Moreover, the influence of age, gender, and educational level is also apparent for certain classes of words" (Eddington, 2019, p. 1). His country-specific analyses of Spain and Mexico in the same study also showed the influence of the social factors of age, gender, and education level on diminutive formation. While Eddington's study provides a fascinating general view of the formation of the diminutive in the Spanish-speaking world, up until now there has not been a similar study for this element of the Portuguese language.

2.5 Summary of Recent Literature

In the last 40 years, debates have emerged regarding whether *-inho* and *-zinho* are different forms of the diminutive or the same form with an addition of a *z*. The style of studies have also shifted to be more analytical and focused on syntactic theory rather than grammar-style descriptions.

There continues to be a debate regarding whether *-inho* and *-zinho* are one or two separate forms. Several scholars state that *-inho* and *-zinho* are two separate forms of the diminutive, such as Mauer Jr. (1969), who claimed that *-zinho* is a variant of *-inho*, and Moreno (1977), who claimed that they are two separate suffixes. Leite (1974) analyzed the diminutive from a generative standpoint, concluding that *-inho* is an affix and *-zinho* is a compound affix. Villalva (2000) considered *-inho* and *-zinho* to be two separate suffixes as they have different properties from each other, while Ferreira (2005) stated that they are two allomorphs, where *-inho* is added to the root and *-zinho* to the word itself. Guimarães and Mendes (2011), however, considered the diminutive *-inh-* to be an infix rather than a suffix and therefore *-inho* and *-zinho* are separate lexical items rather than allomorphs. Finally, Lee (2013) explained that *-inho* and *-zinho* are not allomorphs because they possess different properties than inflectional and derivational suffixes.

However, many scholars claim that *-inho* and *-zinho* are the same form of the diminutive, with the *z* in *-zinho* taking on the role of an epenthetic consonant or *-zinho* being a derived form. Câmara Jr. (1975) explained that *-zinho* is a derivational suffix by juxtaposition and is an allomorph of *-inho*. Vieira (1978) concluded similarly that *-zinho* is the base form and *-inho* is the derived form from *-zinho*. Menuzzi (1993) considered *-inho* and *-zinho* to be the same underlying diminutive morpheme, or rather, two allomorphs in complementary distribution.

Cagliari and Massini-Cagliari (2000) and Bisol (2010) stated that *-inho* is the sole form of the diminutive, with *z* acting as an epenthetic consonant to fulfil structural demands.

Although many scholars have focused on researching the diminutive to determine whether *-inho* and *-zinho* are separate forms, other recent studies examine diminutive formation from other views. Lee (1995) researched the role of the diminutive in compound words and concluded that diminutive formation has an independent status in grammar and different levels of the word formation process (1999). Bachrach and Wagner (2007) analyzed the diminutive in terms of syntactic adjunction and conclude that because the diminutive can take different scopes due to being an adjunct, the classification of the diminutive as an adjunct explains the variance in diminutive forms. In a different vein of study, Monteiro (2011) concluded that phonetic segments should be analyzed as autonomous morphemes and highlights interfixation and the complexity of diminutive formation. Analyzing the diminutive from a compositional vs. non-compositional perspective, Armelin (2011) concluded that diminutives are not adjuncts due to possessing different markers, where compositional and non-compositional markers appear in different locations in the word. A few years later, Armelin (2014) examined how compositional and non-compositional forms of the diminutive use *-inho* and *-zinho* differently. Armelin (2018) also analyzed the morphosyntactic structure of *-inh-* diminutive formation and how it relates to gender projection. Another study analyzing the diminutive from a syntactic point of view was conducted by Ulrich and Schwindt (2018). Here they analyzed the morphological and prosodic formation of *-inho* and *-zinho*, concluding that these diminutive forms attach later during the word formation process than other affixes. In addition to syntactic characteristics, context affects diminutive formation. Pereira (2020) conducted a corpus study of 30 diminutive words, concluding that context in which the diminutive appears is vital to diminutive formation. As far as comparing the Portuguese diminutive to other languages, Rocha and Vicente (2016) compare English and Portuguese diminutive formation, explaining the different processes used in each language for diminutive formation.

Although the majority of diminutive research focuses on analyzing the formation from the viewpoint of grammar rules and syntactic structure, more recent studies have also begun to describe how social factors affect diminutive formation. Tavares (1999) analyzed the use of the diminutive in the speech of fishermen in Rio de Janeiro, including possible semantic meanings of

-inho and *-zinho*. Teixeira (2008) studied the formation and use of diminutive in the southern Brazilian cities of Porto Alegre and Curitiba, finding *-inho* to be the most used diminutive form in the study and *-zinho* the preferred form for nonce words. Villalva (2010) analyzed diminutive formation among 100 young adult college students in Lisbon. Freitas (2013) and Barbosa (2014) examined the diminutive formation in Rio de Janeiro and Carioca/Fluminense dialectal region, analyzing the impact of social factors, although with small test groups and concluding that the factors of age and gender affect diminutive formation. Similarly, Rodrigues (2015) analyzed diminutive formation in two cities in Minas Gerais and found that the younger generation prefers the standard/long form of *-inho* and *-zinho* whereas the older generation prefer the reduced form of the diminutive of *-zim* and *-im*. Another finding from Rodrigues' study was that women use the standard *-inho/-zinho* form more than men, who tend to use the reduced *-im/-zim* form more often. Cruz and Oliveira Azevedo (2018) studied gender marking in the diminutive using Goiás corpus data, discovering that the *-im* diminutive form is used to modify masculine words into neutral forms, such as *netinho* (grandchild) becoming *netim*. Results showed that in 44.4% of cases with a neutral word, the diminutive form *-im* was used by participants. Simioni and Schwindt (2019) analyzed diminutive formation in paroxytone words among students at the Federal University of Bahia. Results indicated that word size didn't affect the diminutive ending, and that paroxytone words ending in [e] favor *-zinho*, such as the nonce word *jugurabe* or the word *cidade* (city). These studies all focused on diminutive formation in certain areas of Brazil, however, some focused on the effect of social factors while others looked more closely at the types of words being used.

Although scholars have examined the diminutive through different linguistic lenses, there is a lack of research depicting how social factors affect diminutive formation comparing several regions of Brazil to each other. Therefore, the purpose of the present study is to test for variation in the formation of the diminutive among native speakers of Brazilian Portuguese and whether social factors of their age, gender, or location in Brazil affects the forms selected. By answering this question, new knowledge will be gained as to how the Portuguese language is evolving among the oldest to youngest generations who participated in the survey, in addition to insight into what diminutive forms are used and by whom.

Chapter 3 Experiment

3.1 Participants

To gather information regarding the current formation of the diminutive in Brazilian Portuguese, I conducted a survey among adult Brazilians who were born in and currently live in Brazil. I solicited participants to take the survey through word of mouth and social media, inviting those who qualified to take the survey and those who knew people who met the qualifications to share it with others. As part of the invitation, I shared a link to access the survey and a brief explanation of what the study entailed to Facebook posts and groups, Instagram posts and stories, Reddit groups, and WhatsApp messages to individuals and groups. Participants and others who knew potential participants also shared the survey link through various social media channels. Digital flyers (in both English and Portuguese) were also used to advertise the survey as part of the method listed above and are included in Appendix B.

The 1,053 participants in this study consisted of 402 males, 649 females, and two others (one "gender-fluid" and one unspecified "other"). Participants were grouped into age brackets, as seen in Table 3.1.

Table 3.1: Number of participants by age group.

Age Group	Number of Participants
18-22	304
23-27	212
28-32	138
33-37	98
38-42	87
43-47	80
48-52	52
53-57	46
58-62	25
63+	11

Responses were collected from participants who were from and residing in each of the 26 Brazilian states and the Federal District, as seen in Table 3.2. Of the 1,053 participants, 889 lived in the same state in which they were born, and 164 lived in a state other than their state of origin.

Table 3.2: Number of participants by state origin and residence.

State	Origin	Residence
Acre	6	6
Alagoas	9	6
Amapá	5	5
Amazonas	19	20
Bahia	41	39
Ceará	27	27
Espírito Santo	16	19
Distrito Federal	18	17
Goiás	19	29
Maranhão	43	40
Mato Grosso	8	14
Mato Grosso do Sul	22	20
Minas Gerais	87	83
Pará	22	14
Paraíba	14	12
Paraná	85	85
Pernambuco	47	39
Piauí	25	24
Rio de Janeiro	71	67
Rio Grande do Norte	12	14
Rio Grande do Sul	57	49
Rondônia	11	7
Roraima	4	5
Santa Catarina	31	45
São Paulo	342	353
Sergipe	10	10
Tocantins	2	4

Qualtrics provided the latitude and longitude for survey participants, which were plotted using Geo Point Plotter to give a visual representation of where in Brazil they were located, as seen in Figure 3.1.

In addition to analyzing the states that participants were from, the dialectal regions were taken into account as another potential influential variable. Speakers were grouped into nine different dialects of Brazilian Portuguese based on the city and state they indicated that they were from. The dialect regions were taken from the division proposed by Nascentes, as found in *Nova Gramática do Português Contemporâneo* by Cunha and Cintra (1985), with the following

Figure 3.1: Geographical coordinates of participants.

modification. The Sulista dialect, as shown on his map, was divided into three different regions to include the Caipira and Paulistano dialects in the state of São Paulo, as shown in Figure 3.2. This was done because this study had a large number of participants from the state of São Paulo alone. The areas of Caipira and Paulistano dialects in São Paulo were taken from a Brazilian Portuguese dialectology map on Wikipedia, which was created by Allice Hunter and an author with the handle of "PedroPVZ" as a more modern expansion of Nascentes' original (Hunter, 2019). The creators of the map noted that the map based on Nascentes' works was a bit outdated and simplified, as it was missing important dialectal zones such as Sulista, Caipira, and Gaúcho. They also took into account studies conducted by several universities regarding dialectal zones in Brazil. A full explanation and a list of sources used for the map can be found in the image note on Wikipedia.

The dialectal region of Território Incaracterístico is also an outdated term, as this region was more sparsely populated during Nascentes' time and today includes the country's capital: Brasilia. However, although Nascentes' map is not the most up-to-date, for the purpose of this study the larger dialectal zones were used as the data was also analyzed being divided by state.

The number of participants from each dialect region, based on both their dialectal region of origin and dialectal region of residence, is shown in Table 3.3.

Figure 3.2: Map of Brazilian Portuguese dialectal regions, edited from Cunha (1985)

3.2 Test Items

To select the test items included in the survey, a sample of corpus data from the *Corpus do Português* (Davies, 2016), comprising words in the diminutive (about 20,000 tokens) was sorted by frequency of use and diminutive ending (*-inho, -zinho, -zito*). A selection of 100 of the most frequently used words ending in *-zito/a* was considered, with the idea that if the corpus showed the word being used in *-zito/a* frequently, it was likely that participants would also tend to use *-ito/a* or *-zito/a* diminutives in addition to the more common *-inho/a* and *-zinho/a*. Those 100 words were then sorted by part of speech (adjective, adverb, name, noun, pronoun, and interjection) and other characteristics (word ending, stress, nasalization, and loan word). A few nonce words, defined as phonotactically appropriate but non-existing words, were also added to

Table 3.3: Number of participants by dialect region origin and residence.

Dialect Region	Origin	Residence
Amazônico	56	50
Baiano	71	70
Caipira	84	84
Fluminense	87	86
Incaracterístico	19	21
Mineiro	87	83
Nordestino	177	162
Paulistano	258	269
Sulista	214	228

the survey, in addition to a few common Portuguese names and English loan words. Once added to the list, the options were narrowed down to 60 test items reflecting a variety of parts of speech and characteristics, which included words such as *branco* (white), *animal* (animal), *árvore* (tree), and *eu* (I). A full list of test words can be found in Appendix C as part of the survey.

3.3 Procedure

Participants accessed the survey, also included as Appendix C, through the *Qualtrics* platform and all instructions were in Portuguese. Upon clicking the survey link, participants were directed to the survey consent form, and once they indicated that they agreed to participate in the study by clicking next, they were able to continue on to the survey itself.

After completing the consent, study participants next filled out a two-section survey written in Portuguese. In the first section, they answered questions about themselves to determine participation eligibility and to provide demographic data. In the second section, participants selected the form(s) of the diminutive that they would be most likely to use in their everyday speech.

I debated the best way to format the survey, particularly the second section explaining the instructions as well as the format of the answer choices. This was done keeping in mind that providing too much detail regarding the formation of the diminutive and that referring to it as a pattern could sway the results and trigger the choice of *-inho/a*, *-zinho/a*, and *–(z)ito/a*. However, I decided that it was more important for the participants to clearly understand the objective of

what they were being asked to do rather than for me to receive incorrect data due to misunderstandings. I therefore tried to give very commonly diminutized examples, such as *bolinha*, and a diminutive example that was not *–(z)inho/a*, as seen in *caseta*. By formatting the survey as a "select all that apply" with a text box, I was also able to receive clearer data and not have the large quantity of results be hindered by typos or other logistic issues.

The first section was designed to gather data about the participants and asked the following questions:

- Do you currently live in Brazil?
- Were you born in Brazil?
- Which state and city were you born in?
- Which state and city do you currently live in?
- What is your gender? (Options including: male, female, or other with an answer box.)
- What year were you born in?

The second section began with a brief explanation regarding the formation of the diminutive in Portuguese. It stated (translated from the original) that "in Portuguese, it is possible to modify the end of a word for several reasons, such as to indicate a diminished size, show an increase in affection, show insignificance, etc. For example, the word *bola* can become *bolinha*, the word *casa* can become *caseta* or *casinha*." This explanation was followed by the following instructions (also translated from the original):

> "How would you modify the following words according to that pattern? Choose the option that makes the most sense to you and/or write another form in the *other* box. You can choose more than one option if you would use them. If you do not know a word, choose the option of the diminutive that makes the most sense and that you would use. If it is not possible to modify the word, choose the *other* option and write 'impossible'."

The instructions were followed by an example question showing the word *casa* (given in the instructions) so they could see the layout before beginning. Each diminutive form had possible answer forms for *-inho*, *-zinho*, and *-ito*/*-zito*, however, participants were encouraged to write in any other form that they would use.

Participants indicated which form(s) of the diminutive they would likely use by selecting all possible answers, in addition to writing in any unlisted forms. The most productive diminutive forms were divided into the following groups, with "miscellaneous" encompassing any other form not listed, such as *-im*, *-zim*, *-eco*, or double forms like *-inhozinho*.

- *-inho*, as in *narizinho* (nose)
- *-Xinho*, as in *descontinho* (discount)
- *-XXinho*, as in *negocinho* (business)
- *-zinho*, as in *jardimzinho* (garden)
- *-ito*, as in *rapazito* (young man)
- *-Xito*, as in *descontito* (discount)
- *-zito*, as in *raiozito* (ray)
- *-misc*, as in *descontim* (discount)

The X listed in *-Xinho*, *-XXinho*, and *-Xito* represents the final vowel(s) replaced with the diminutive form, such as *casa* becoming *casinha*. Although all diminutive forms ending in the masculine [o] can also be formed in the feminine [a], they will simply be referred to as -inho, -zinho, etc. rather than -inho/a, -zinho/a, etc. for brevity.

Chapter 4 Results

A total of 1,945 responses were recorded by Qualtrics over a period of 13 days. This number was given by Qualtrics as the number of survey responses started by clicking the link. Because not all participants that began the survey completed it, the number of completed responses recorded on Qualtrics was 1,280. However, of those responses, the following were not valid for the study and were disregarded for the following reasons:

- 107 responses from people who were not living in Brazil at the time of the study
- 15 responses from people not born in Brazil
- 24 responses from participants under the minimum age of 18, due to IRB restrictions for minors
- 19 responses from participants of unknown age who provided birth date/month but not birth year

Responses were timed to verify that the participants were reading and answering the questions in a realistic time-frame. To ensure that participants had enough time to consider the questions and responses, and as a result give accurate responses, the following criteria were established. The mean response time was determined to be 8.7 minutes. One standard deviation below the mean was 4.7 minutes, so the 62 responses that were completed in less time than that were disregarded to prevent inaccurate or incomplete responses. In total, there were 1,053 responses analyzed in this study.

The completed survey results of the 1,053 participants were downloaded from Qualtrics into Microsoft Excel and subsequently analyzed using Language Variation Suite (M. Scrivner Olga & Díaz-Campos, 2016) and jamovi (The jamovi project, 2021). This chapter will discuss the results and main findings of the study, focusing on giving a broad picture of diminutive formation in Brazil as obtained through the survey answers. As shown in Chapter 2, many studies have viewed the diminutivization process in different theoretical models. The present study does not deal with those models, but examines how social factors influence speakers to choose one diminutive form over another.

An important factor to note prior to analyzing the results is that participants were not spread evenly across Brazil nor distributed equally by age. There was a higher concentration of participants in certain states, such as São Paulo with over 300 participants, whereas other states had fewer than 10 participants, such as Tocantins, Roraima, and Amapá. Participants also tended to be younger, with the highest number of participants by age group being 304 participants between the ages of 18-22 and each progressively older age group having fewer participants than the previous, as noted in Chapter 3. This is important to note as the difference in quantities of participants affected the statistical analysis and flagged some results as statistically significant when it did not result in a large effect size to draw an accurate conclusion.

4.1 Random Forest Analysis

A random forest analysis was conducted as a first step in the analytic process to achieve a general view of the data. The purpose of the random forest analysis is to determine the relative importance of the independent variables of the study (age, gender, state of origin, state of residence, part of speech, etc.) with respect to each dependent variable, in this case the diminutive form endings given in the results. According to Tagliamonte and Baayen (2012), "random forests provide information about the importance of predictors, whether factorial or continuous, and do so also for unbalanced designs with high multicollinearity, cases for which the family of linear models is less appropriate" (p. 25). Language Variation Suite, an online software program, was used for the calculations. Information regarding the use of Language Variation Suite in linguistic statistical analyses can be found in an article by M. Scrivner O. & Diaz-Campos (2016). As each of the 1,053 participants were required to provide a minimum of 60 diminutive-formation responses (with multiple responses being allowed per question) the total number of data points obtained was nearly 67,000. Due to the large data set and software memory constraints which come set in the suite, all of the results from the study were divided into four random subsets of over 15,000 each, which included a variety of suffixes. Each of the four subsets were processed in Language Variation Suite and the results were practically identical. While only a single subset of this size would suffice, this process was followed to verify that results would be consistent regardless of which random subset was chosen. Using this method to analyze the data with Language Variation Suite produced a random forest for each of

the diminutive endings, as well as a miscellaneous ending category, as seen in Figures 4.1–4.8. The X listed in *-Xinho*, *-XXinho*, and *-Xito* represents the final vowel(s) replaced with the diminutive form, such as *casa* becoming *casinha*.

The mean decrease in gini is a measure of the importance of an independent variable (e.g., age, state origin) for estimating a target dependent variable (e.g., *-inho*, *-zinho*). On the random forest plots, it is seen that factors with a greater mean decrease in gini than that indicated by the red line (i.e. to the right of the red line) are statistically significant. The importance of each independent variable varied with the different diminutive endings, but general conclusions for the study were drawn. Table 4.1 shows a summary of which independent variables were found to be statistically significant in the random forest analysis, where each check mark represents an independent variable to the right of the red line.

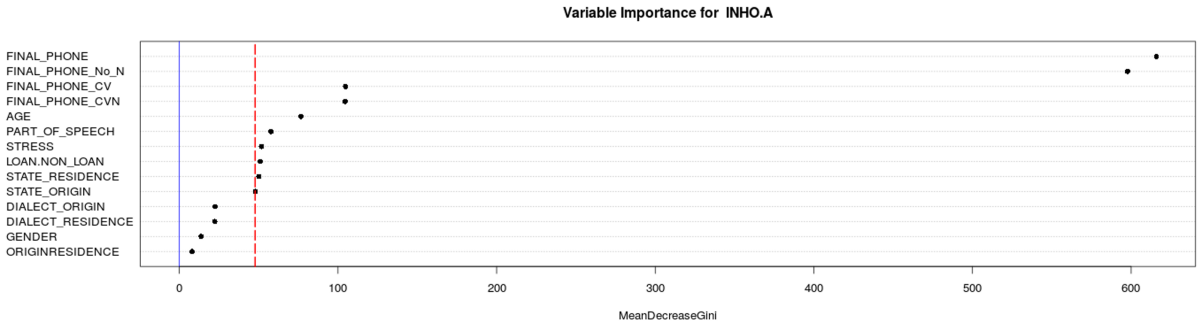

Figure 4.1: *-inho* random forest results.

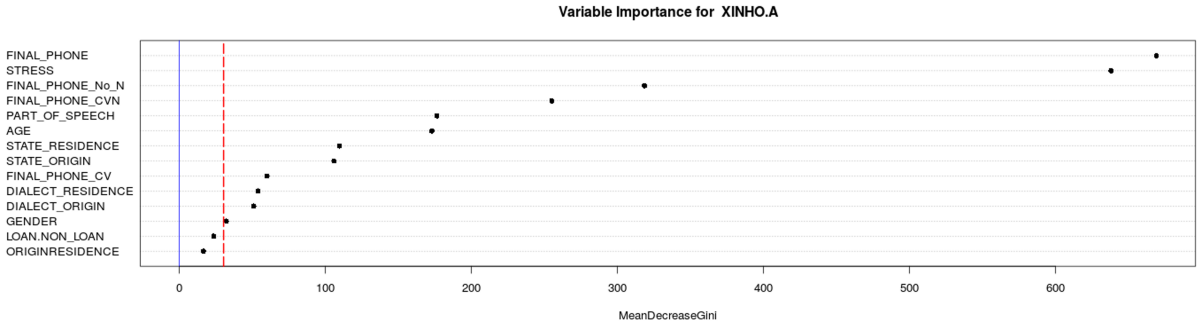

Figure 4.2: *-Xinho* random forest results.

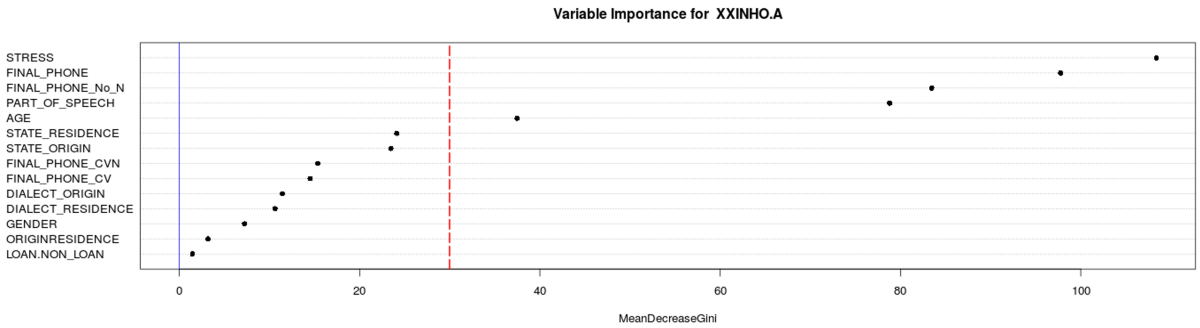

Figure 4.3: *-XXinho* random forest results.

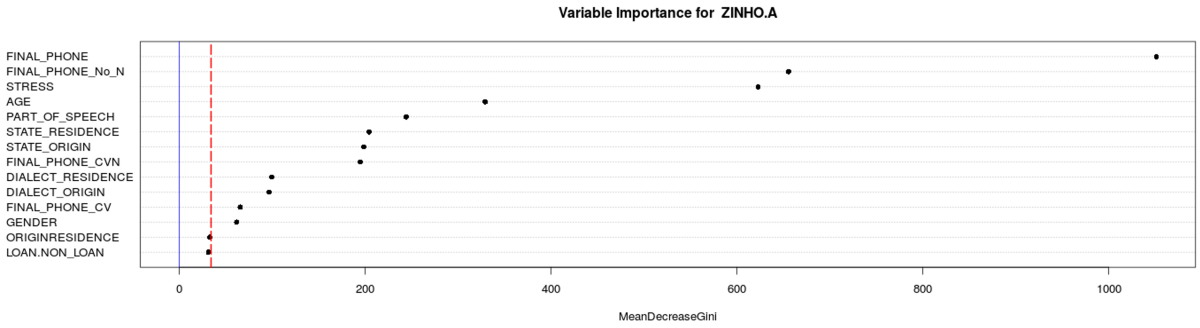

Figure 4.4: *-zinho* random forest results.

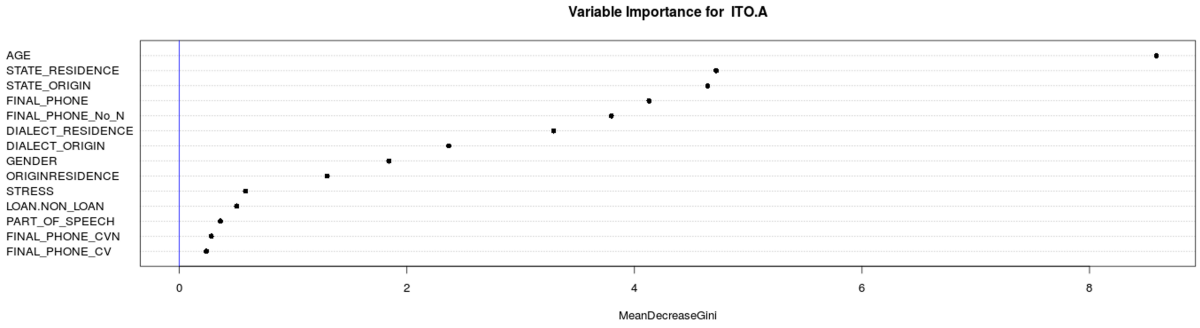

Figure 4.5: *-ito* random forest results.

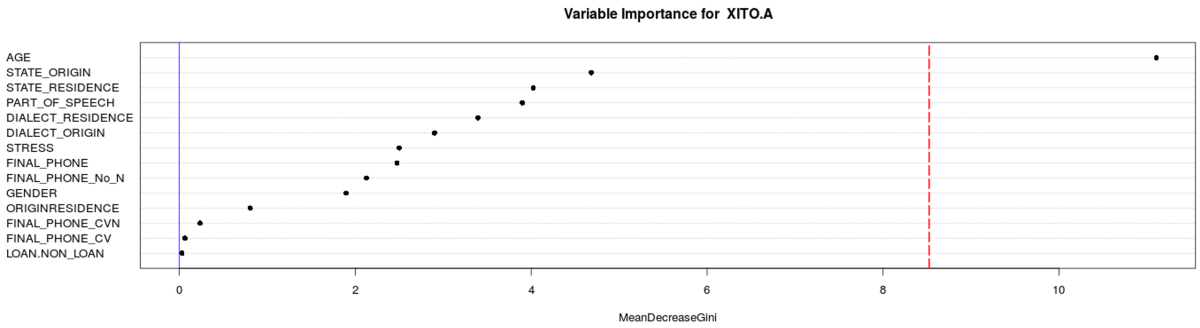

Figure 4.6: *-Xito* random forest results.

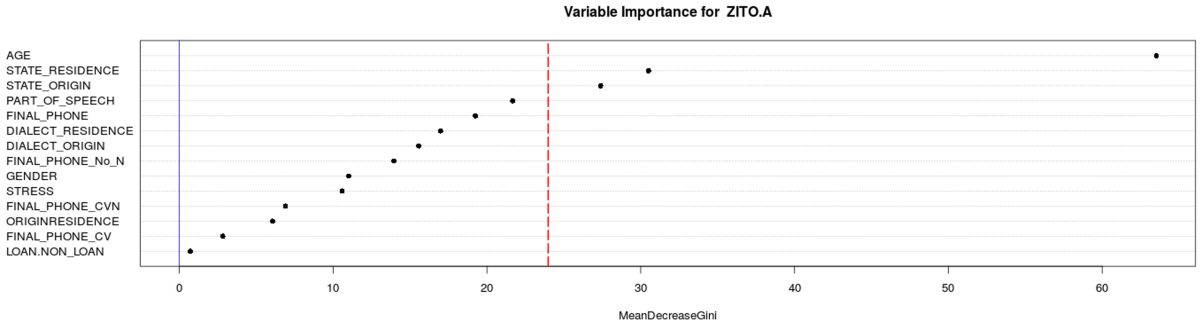

Figure 4.7: *-zito* random forest results.

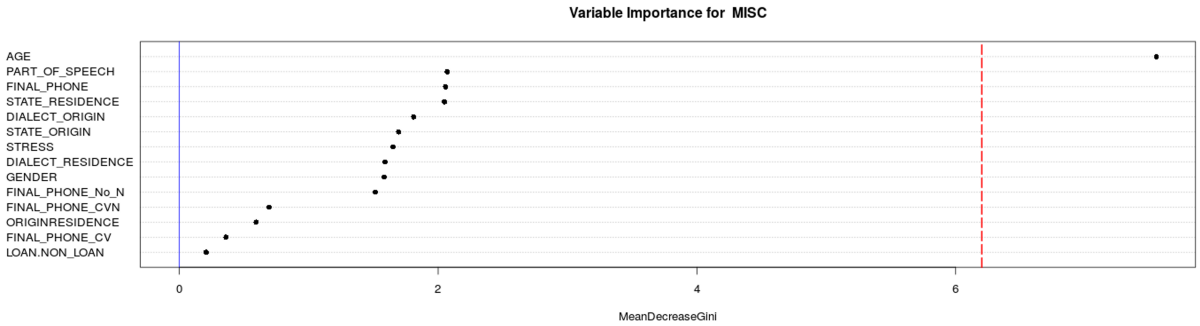

Figure 4.8: -misc. random forest results.

Table 4.1: Summary of which independent variables were found to be statistically significant in the random forest analysis, as indicated by the check marks.

	-INHO	-XINHO	-XXINHO	-ZINHO	-ITO	-XITO	-ZITO	-MISC.	Total
Age	✓	✓	✓	✓		✓	✓	✓	7
STATE_ORIGIN	✓	✓		✓			✓		4
STATE_RESIDENCE	✓	✓		✓			✓		4
PART_OF_SPEECH	✓	✓	✓	✓					4
STRESS	✓	✓	✓	✓					4
FINAL_PHONE	✓	✓	✓	✓					4
FINAL_PHONE_NO_N	✓	✓	✓	✓					4
FINAL_PHONE_CV	✓	✓		✓					3
FINAL_PHONE_CVN	✓	✓		✓					3
GENDER		✓		✓					2
DIALECT_ORIGIN		✓		✓					2
DIALECT_RESIDENCE		✓		✓					2
LOAN.NON_LOAN	✓								1
ORIGIN.RESIDENCE									0
Total	10	12	5	12	0	1	3	1	

In addition to information about the participants obtained through the survey (e.g., age, sex, state of origin), information regarding each test word was measured. Factors such as whether the word was a loan word, which syllable in the word was stressed, and what the final phone was all play a role in diminutive formation and were analyzed as part of this study. Regarding the different final phone variables, it was found that the final phone categorization was the best representation of the final phone variable, instead of CV (consonant vowel) or CVN (consonant vowel nasal-consonant) for example, in all the random forest plots. Additionally, final phone is statistically significant in four of the eight random forest plots, making it a point of interest. Because final phone and word stress are collinear variables, the individual influence of each one cannot be determined separately. Thus, for the purpose of this study, these variables will be analyzed by combining them into a single variable of final phone by stress. Final phones by stress are referred to by acronyms, first noting the position of stress as either antepenultimate (AP), penultimate (Pen), or final (F). Following the stress abbreviation is the final phone, such as ”AP-stop”, ”F-r”, or ”Pen-Nasal-e.” A full list of acronyms for the final phones by stress is found in Appendix D.

Another important finding taken from the random forests is that the state of origin and state of residence of a person are more influential than the dialect of origin and dialect of residence, with the state of origin/residence being statistically significant in five of the eight random forest plots. The origin/residence variable measured whether it was statistically significant for the participant to be residing in a state other than their state of origin. Because this factor was never statistically significant and because most participants were from the state they resided in, only the state of origin was analyzed.

Of the independent variables associated with the participant (as opposed to the construction of the word itself), age is shown in the random forests as the most commonly significant variable, appearing as statistically significant in seven of the eight random forest plots. Although sex/gender was an influential factor in diminutive formation in similar studies, such as in Eddington (2019), it did not seem to be as significant of a factor in the results of the current study, only coming across as significant in two of the eight random forest plots.

Based on the information drawn from the random forest analyses, the independent variables to be statistically analyzed in greater depth were the following: age, state origin, and

final phone by stress. The interactions of these three variables with one another and their effect on diminutive formation were also analyzed as interaction factors: for example, the combined effect of age and state origin.

Three pivot tables were created to show which suffix participants use in which situations. The overall proportion of *-inho*, *-zinho*, etc. use for age by final phone by stress, age by state, and state by final phone by stress is shown in these pivot tables in Appendix A.

4.2 Statistical Analysis

The statistical analysis on the data gathered in the survey was conducted using jamovi, an open source standalone software that acts as an interface for the statistical computing language R (The jamovi project, 2021). Survey data were imported into jamovi. The data included repeated effects since the participants gave more than one response to test items of the same kind. This required using a statistical model that included a random effect for participant. I initially tried running multinomial mixed effects logistic regression with all of the values of the dependent variable, and with random effects for participant and test word, but that proved too computationally intense and after letting the program run for several days it still had not produced an outcome. I dropped the random effects and tried a multinomial logistic regression. Even this simpler model ran for four days without finishing the computations. For this reason, I opted for running a series of binomial logistic regressions to calculate the omnibus results in which each value of the dependent variable was pitted against the combination of the remaining values. This meant that the same data were analyzed eight times, and this required a Bonferroni adjustment of the alpha level from 0.05 to 0.006. I adopted an even more stringent alpha level of 0.001 for the analyses.

If an interaction value and individual predictor both had statistically significant p-values, only the interaction value was analyzed further. Additionally, this analysis provides a McFadden R^2 value for each dependent variable. This value provides an estimate of how much of the variance in the dependent variable the independent variables account for.

Post hoc analyses were performed for significant predictors. For significant interactions involving continuous variables this was done by running Pearson's correlation and Kendall's Tab B. Together the data showed which specific variables had statistically significant trends on

individual diminutive endings. Although plots and correlation values were created and obtained for all combinations, only the results pertaining to p-values of less than 0.001 will be discussed. The findings for the statistical analyses will be explained individually for each diminutive form analyzed.

4.3 -inho

The diminutive form of adding *-inho* to the end of a word was used in 8.44% of the total responses to this survey. However, participants could choose multiple responses per word, and thus this percentage (and subsequent variable use percentages) does not indicate a participant's sole diminutive preference. The most common words using *-inho* were those ending in the archiphoneme /S/, such as *lápis* (pencil) ending in orthographic {s} and *nariz* (nose) ending in orthographic {z}; words ending in archiphoneme /R/, such as *devagar*; and English loan words, such as *blog*. Additionally, the word *mãe* (mother) also had a large number of *-inho* responses. *Mãeinha* or *mãinha* [mɐ̃ẽĩɲə] is considered to be a regional form in northeastern Brazil, such as in the Baiano dialect. Although the prescriptive grammatical rule is that words ending in diphthongs use the *-zinho* diminutive form, *mãeinha* can be an exception (Perini, 2002).

The findings of the omnibus likelihood ratio tests showed a p-value of less than 0.001 for final phone by stress as well as the interaction value of age and final phone by stress, as seen in Table 4.2. Because of the interaction, only the interaction between age and final phone by stress was further analyzed. The McFadden R^2 was 0.616, which indicates that the model accounts for 61% of the variance in the choice of *-inho* vs another suffix.

Table 4.2: Results of the binomial logistic regression on *-inho*.

Predictor	**X^2**	**df**	**p**
Age	1.68e-7	1	1.000
State Origin	1.40e-7	26	1.000
Final Phone by Stress	67.0	21	<0.001
Age * State Origin	28.5	26	0.335
Age * Final Phone by Stress	49.6	21	<0.001
State Origin * Final Phone by Stress	293.9	546	1.000

McFadden R^2 = 0.616

Post hoc analysis of the interaction of age with final phone by stress was done by correlating the percent of *-inho* chosen with the age of the participants. Not all test items were given *-inho* endings in certain phone/stress combinations, and those particular combinations are indicated with a dash in Table 4.3. As Figures 4.9 - 4.11 indicate, most of the correlations were not linear so they were analyzed with Kendall's tau B rather than with a Pearson correlation. The final phones by stress that interacted with age in a statistically significant way in the use of *-inho* were words with final stress ending in a diphthong with [ẽĩ̯] (F-Nasal-e), final stress ending in a diphthong with [õ] (F-Nasal-o), final stress ending a stop (F-stop), final stress ending in a diphthong with [u] (F-u), words with penultimate stress ending in a diphthong with [ẽ] (Pen-Nasal-e), and penultimate /S/ (Pen-s). All of the previously mentioned final phones by stress had p-values of less than 0.001 and were determined using the correlation p-values. These final phones by stress were plotted against Age, which resulted in Figures 4.9–4.11.

Three final phones by stress indicate an apparent time shift towards using *-inho* instead of any other suffix, meaning that younger participants are more likely than older participants to use *-inho* in words ending with these final phones. The most prominent is with words with final stress ending in a diphthong with [ẽĩ̯] (F-Nasal-e). Figure 4.9 indicates that older people do not use *-inho* in final-stress words ending in a diphthong with [ẽĩ̯] (F-Nasal-e) words while younger people do in 15-20% of the cases. The other two final phones by stress that indicate an apparent time shift towards using *-inho* are words with final stress ending in a diphthong with [õ] and words with penultimate stress ending in /S/. Figure 4.10 shows a higher usage of *-inho* in (F-Nasal-o) words by participants under 30. However, the highest point on the graph shows *-inho* being used in only 1% of cases and then flat-lines down to 0. Figure 4.11 shows there is only a small dip of *-inho* usage among people in their 30s and thus is not practically significant. The use of *-inho* starts at about 98%, dips to about 85% in people around 30, and then goes up to 100%. Unlike words with final stress ending in a diphthong with [ẽĩ̯] (F-Nasal-e), words with final stress which end in a diphthong with [õ] (F-Nasal-o) and words with penultimate stress ending in /S/ (Pen-s) have much less *-inho* usage and are not practically significant despite being statistically significant.

Words with final stress ending in a stop (English loan words), words with final stress ending in[u], and words with penultimate stress ending in [ẽ] are the other three statistically

Table 4.3: Correlation matrix of Age with each Final Phone by Stress for *-inho*. Final phones by stress without any data are indicated with a dash.

	Kendall's tau B	**p-value**
AP-a	-	-
AP-e	-	-
AP-o	-	-
AP-stop	0.286	0.003
F-a	-0.104	0.368
F-Nasal-a	-	-
F-e	-	-
F-Nasal-e	-0.501*	<0.001
F-Nasal-i	-0.260	0.024
F-l	-0.174	0.091
F-Nasal-o	-0.405*	<0.001
F-r	-0.029	0.764
F-stop	0.340*	<0.001
F-u	-0.447*	<0.001
F-z	0.195	0.047
Pen-a	-	-
Pen-e	-0.214	0.028
Pen-Nasal-e	-0.367*	<0.001
Pen-i	-	-
Pen-l	-	-
Pen-o	-0.173	0.134
Pen-s	0.405*	<0.001

Note. *p <0.001

significant final phones by stress which show an apparent time shift away from *-inho*. A smattering of points between the 18-30 age range shows an apparent time shift away from *-inho* is in final-stress words ending in stops. Final-stress words ending in a stop (F-stop) show a trend in more *-inho* usage with age. Younger participants tended to use *-inho* about half of the time in (F-stop) words. Figure 4.12 shows the frequency of *-inho* use increases with age, reaching levels of up to 100%.

Words with final stress ending in [u] and penultimate stress ending in [ẽ] are also statistically significant, but not practically different. Figure 4.13 shows that participants under 40 use *-inho* in final-stress words ending in a diphthong with [u] (F-u) words more often than those over 40. However, the highest point on the graph is at most 2%, and the graph flat-lines after age

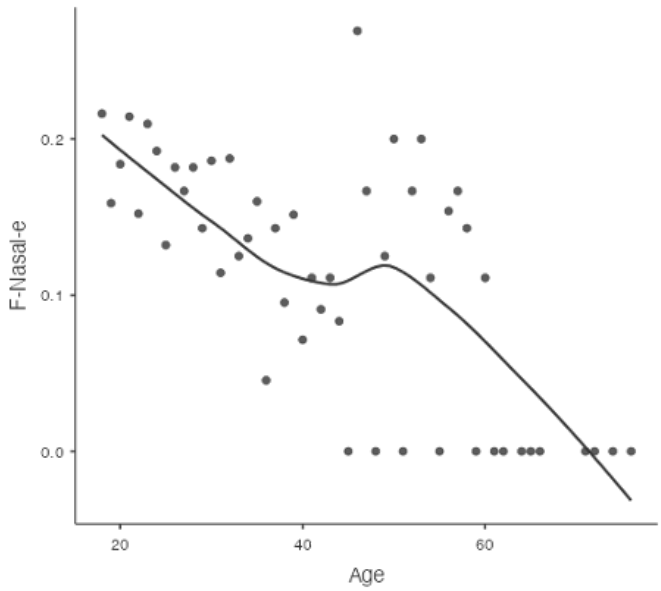

Figure 4.9: Frequency of *-inho* usage in final-stress words ending with [ẽĩ̯] (F-Nasal-e) words plotted against age of participants.

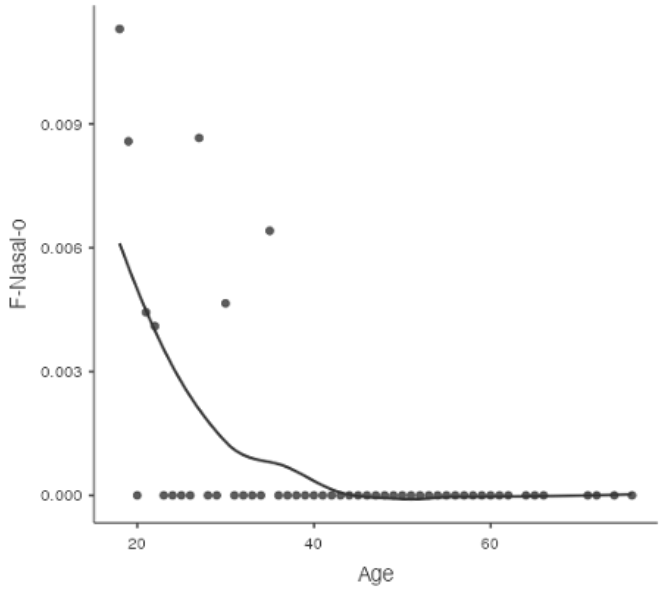

Figure 4.10: Frequency of *-inho* usage in final stress [õ] (F-Nasal-o) words plotted against age of participants.

40. The use of *-inho* in penultimate-stress words ending in a diphthong with [ẽ] (Pen-Nasal-e) words, shown in Figure 4.14, is a bit of a roller coaster. Although it was considered statistically significant, the highest number on the scatter plot only shows *-inho* being used in penultimate-stress diphthong with [ẽ] words 10% of the time, with the trend line not even

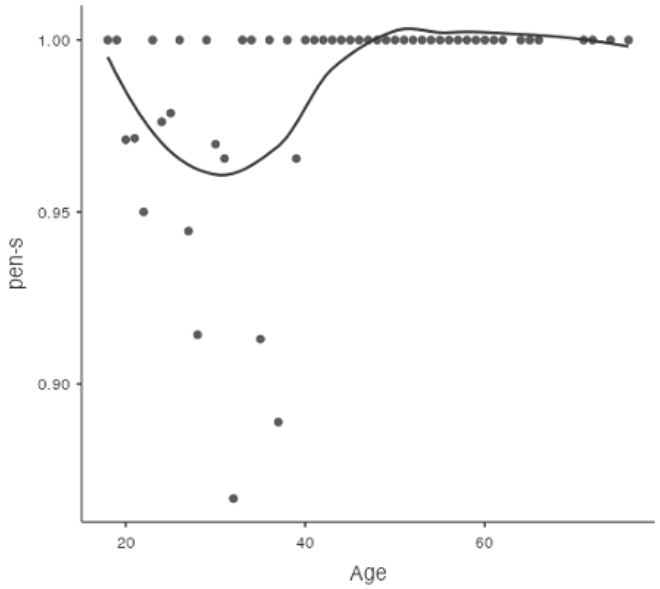

Figure 4.11: Frequency of *-inho* usage in penultimate /S/ (Pen-s) words plotted against age of participants.

reaching 2.5%. There is a smattering of points between the 18-30 age range. The effect in the data isn't very prominent.

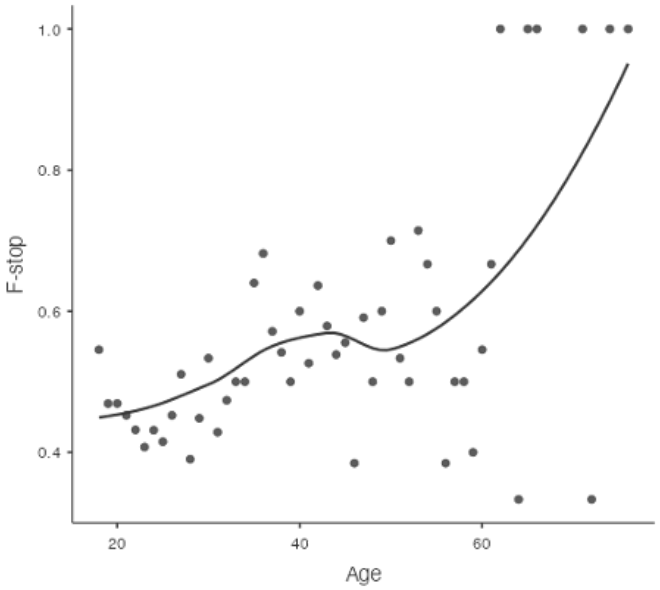

Figure 4.12: Frequency of *-inho* usage in final stop (F-stop) words plotted against age of participants.

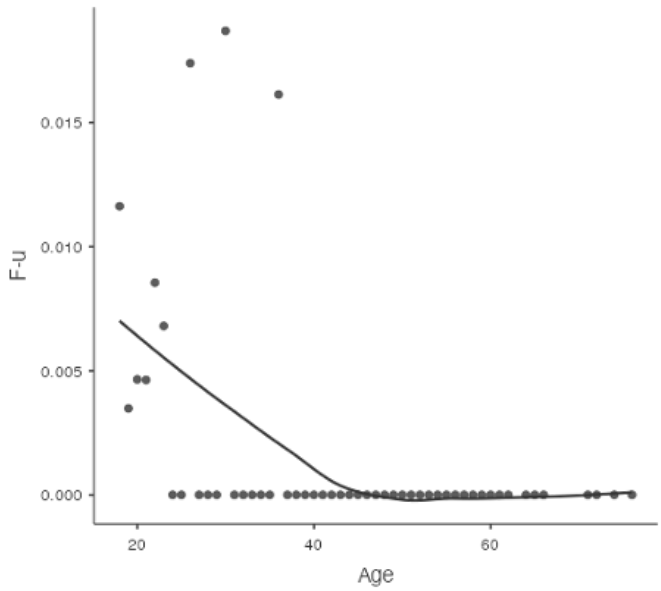

Figure 4.13: Frequency of *-inho* usage in final stress words ending in a diphthong with [u] (F-u) plotted against age of participants.

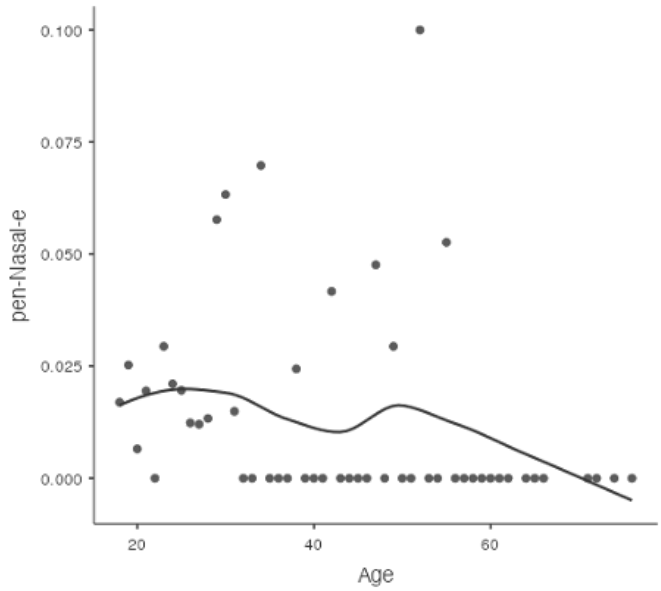

Figure 4.14: Frequency of *-inho* usage in penultimate [ẽ] (Pen-Nasal-e) words plotted against age of participants.

The main findings regarding the use of *-inho* show an apparent time shift in *-inho* usage among the generations who participated in this study. The most practically significant results

were that younger participants were less likely than older participants to use *-inho* with final stress words ending in a stop (F-stop), but were more likely than older participants to use *-inho* in final-stress words ending in a diphthong with [ẽi̯] (F-Nasal-e) words. Appendix A shows which diminutive forms were used (apart from *-inho*) in each final phone by stress for each age group.

4.4 -Xinho

A variation of the diminutive *-inho* is *-Xinho*, where the X represents the vowel replaced by *-inho*. For example, the word *casa* (house) would become *casinha*. This form was used more frequently than solely *-inho*, being used in 16.59% of the total survey responses. The *-Xinho* suffix was used most often in stress-less non-nasal words, such as *coisa* (thing), *príncipe* (prince), and *obrigado* (thank you). This follows the description given in Perini's grammar (2002), which states that "for words ending in /a/, /e/, and /o/, it is usual (but not mandatory in all cases) to prefer *-inho*, dropping the final vowel of the original word" (p. 561). He also states that although it is possible to use *-zinho* with words ending in /a/, /e/, and /o/, it is a more informal style.

The findings of the omnibus likelihood ratio tests showed a p-value of less than 0.001 for state origin as well as final phone by stress, as seen in Table 4.4.

Table 4.4: Results of the binomial logistic regression on *-Xinho*.

Predictor	**X^2**	**df**	**p**
Age	2.50	1	0.114
State Origin	70.70	26	<0.001
Final Phone by Stress	86.83	21	<0.001
Age * State Origin	37.87	26	0.062
Age * Final Phone by Stress	24.52	21	0.268
State Origin * Final Phone by Stress	282.97	546	1.000
McFadden R^2 = 0.482			

The first statistically significant variable of state origin is plotted in Figure 4.15, showing the frequency of *-Xinho* usage as compared to any other diminutive form. The range between the states is not very large, with the lowest percentage of usage being about 12% and the highest being about 19%. Although each state uses *-Xinho* at diverse levels, it is difficult to pinpoint any

accurate trends regarding whether any specific regions of Brazil use *-Xinho* differently than others.

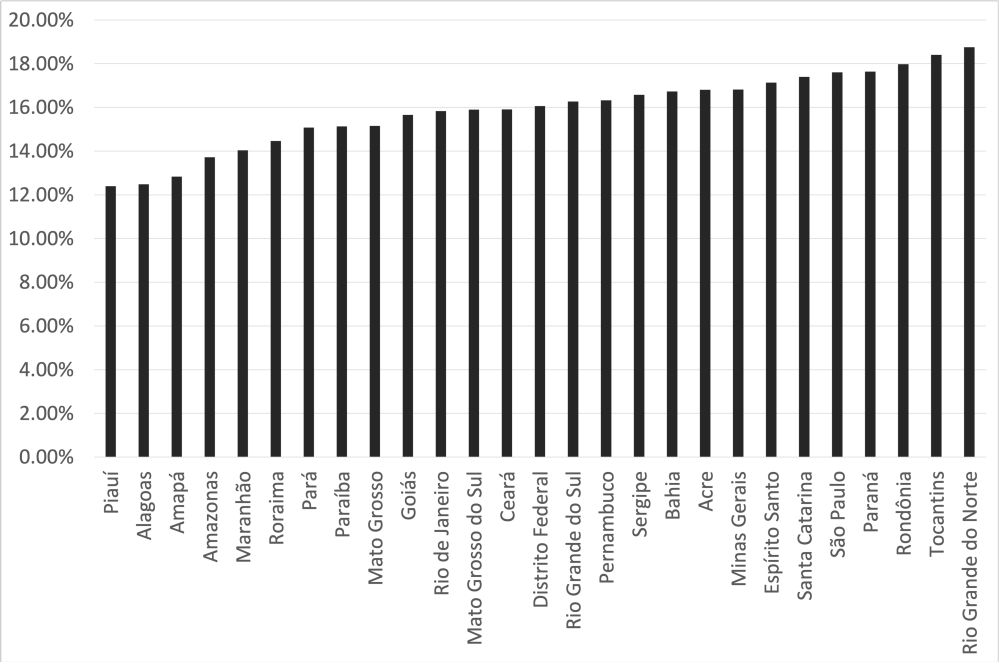

Figure 4.15: Frequency of *-Xinho* usage by state of origin.

Another statistically significant variable for *-Xinho* usage was final phone by stress. Figure 4.16 shows the frequency of *-Xinho* use compared to any other diminutive form, categorized by final phone by stress. As noted previously, *-Xinho* is most often used in stress-less and non-nasal words, which can be seen in the data as well.

Stress-less non-nasal [i] also uses *-Xinho*, as indicated by the penultimate-stress words ending in [i] (Pen-i) bar on the chart reaching 36.44%. The nonce word *parêti*, as the only word ending in [i] used in the study, accounted for all of the cases where *-Xinho* was used in penultimate [i] words. Due to the word being a nonce word, there was confusion in the study about whether it was a final-syllable stressed word or a penultimate-stress word. Many participants assumed it was a typo (indicated in their comments in the "other" box) of *parede* (wall), *parente* (relative), or *pareto* (a type of bar/line chart) and chose the diminutive form they would have used for the "misspelled" word instead, which were all penultimate-stressed words.

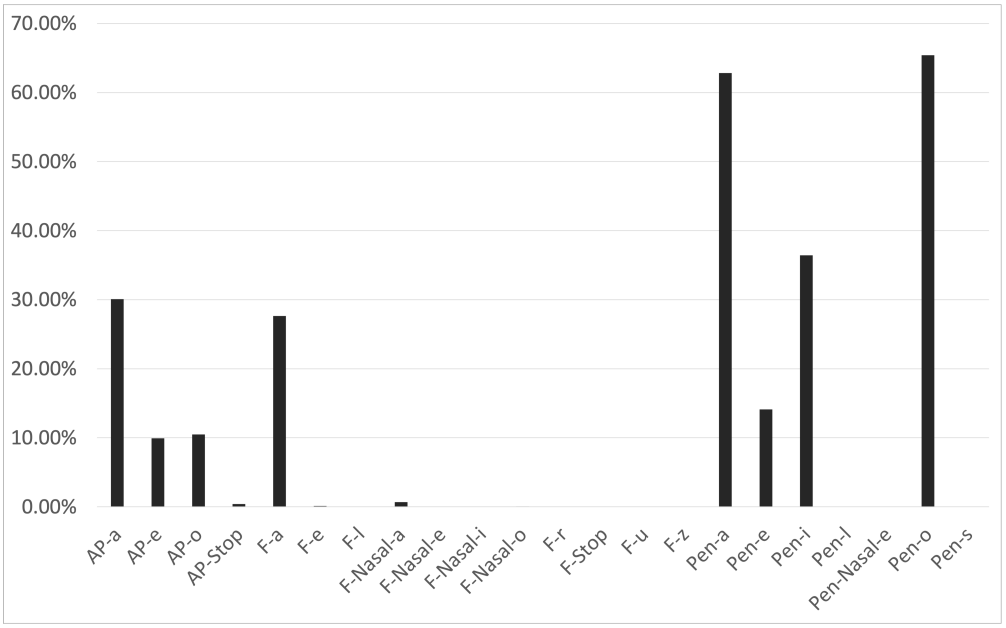

Figure 4.16: Frequency of *-Xinho* usage by final phone by stress.

Due to this complication, the data regarding words with penultimate stress ending in [i] are not reliable.

As far as reliable data regarding word-stress, words with penultimate stress, such as *desconto* (discount), were more likely to use *-Xinho* as opposed to those with antepenultimate stress, such as *lágrima* (tear).

Although state origin was considered statistically significant and showed a variable amount of usage among the states, there didn't seem to be any relation between which states used *-Xinho* more or less frequently. This would indicate that no geographic regions show similar preferences for *-Xinho* usage. As far as final phone by stress, usage fit well with the previously noted rules of words ending in /a/, /e/, and /o/, with penultimate stressed words using *-Xinho* more frequently than antepenultimate. Appendix A shows which diminutive forms other than *-Xinho* in each state by both final phone by stress and by each age group.

4.5 -XXinho

Similarly to *-Xinho*, *-XXinho* is a variation of the diminutive *-inho* where XX represents two phones replaced by *-inho*, such as *fácil* (easy) becoming *facinho*. This was the least common

of the *-inho* forms, used in only 3.05% of the total survey responses. However, this is due to the specially chosen test words in the survey. The most common words ending in *-XXinho* were *fácil* and words ending in [jo], such as *negócio* (business) and *raio* (ray). The findings of the omnibus likelihood ratio test, shown in Table 4.5, did not show any statistically significant predictors.

Table 4.5: Results of the binomial logistic regression on *-XXinho*.

Predictor	**X^2**	**df**	**p**
Age	0.467	1	0.495
State Origin	7.125	26	1.000
Final Phone by Stress	42.245	21	0.004
Age * State Origin	26.838	26	0.418
Age * Final Phone by Stress	9.812	21	0.981
State Origin * Final Phone by Stress	120.563	546	1.000
McFadden R^2 = 0.539			

4.6 -zinho

The diminutive form *-zinho* was the most frequently used ending in this study, accounting for 68.86% of the total survey responses. The most common words using *-zinho* were those ending in consonants, such as *melhor* (better); words ending in nasal vowels, such as *bom* (good); words ending in diphthongs, such as *mau* (evil); or stressed vowels, such as *café* (coffee).

A number of predictors were significant, as seen in Table 4.6. Because all independent variables were part of statistically significant interactions, they will be analyzed as interaction variables rather than single variables.

The first statistically significant variable to be analyzed is age by state origin. A post hoc analysis was conducted by correlating age and the proportion of *-zinho* chosen in each state. Given the non-linearity of the relationship, the correlations were done using Kendall's tau B, as seen in Table 4.7. The five states of origin that were significant in the post hoc analysis were Distrito Federal, Mato Grosso do Sul, Paraná, Pernambuco, and Santa Catarina. The scatter plots for these state appear in Figures 4.17–4.21.

Table 4.6: Results of the binomial logistic regression on *-zinho*.

Predictor	**X^2**	**df**	**p**
Age	3.17	1	0.075
State Origin	114.38	26	<0.001
Final Phone by Stress	146.86	21	<0.001
Age * State Origin	101.18	26	<0.001
Age * Final Phone by Stress	53.51	21	<0.001
State Origin * Final Phone by Stress	601.89	546	0.049
McFadden R^2 = 0.333			

It is again important to recall that the spread of participants was unequal across all states, resulting in certain states with few participants and others with many. That being said, all of the states that were considered statistically significant interacting with age for *-zinho* had at least 18 participants.

For each of the five states analyzed, the general trend shows that younger participants use *-zinho* about 70% of the time, and that number is more likely to vary, either increasing or decreasing, as the age of the participant increases. This may show a tendency towards using *-zinho* among young adults. For example, figure 4.17 shows a higher frequency of *-zinho* usage among younger participants, especially close to age 20, with *-zinho* being used more often than other diminutive forms around 70% of the time. However, there is a stark drop to zero, and there were only 18 participants from Distrito Federal. Similar to Distrito Federal, young adults in Mato Grosso do Sul also seem to prefer the use of *-zinho* as opposed to other diminutive forms, as seen in Figure 4.18. Between ages 18 and 40 the majority prefer *-zinho* around 75% of the time, with a few points at zero. As with Distrito Federal, there is a stark drop to zero, and there were only 22 participants from Mato Grosso do Sul. Pernambuco and Santa Catarina also show a similar situation in Figures 4.20 and 4.21, where participants under the age of 40 seem to prefer *-zinho* in about 70% of cases, but there is insufficient data from a variety of age groups to establish a definite trend.

Paraná, with 85 participants, had a larger number of participants compared to the other four states previously analyzed. However, the trend in *-zinho* usage is similar, as seen in Figure 4.19, where the majority of participants used *-zinho* around 70% of the time. This may indicate a trend in the younger population preferring the use of *-zinho* as opposed to other

Table 4.7: Correlation matrix of Age with each State of Origin for *-zinho*.

	Kendall's tau B	**p-value**
Acre	-0.111	0.329
Alagoas	-0.129	0.251
Amapá	-0.118	0.097
Amazonas	-0.216	0.046
Bahia	-0.175	0.097
Ceará	-0.262	0.014
Distrito Federal	-0.396*	<0.001
Espírito Santo	-0.247	0.024
Goiás	-0.330	0.002
Maranhão	-0.209	0.044
Mato Grosso	-0.233	0.038
Mato Grosso do Sul	-0.455*	<0.001
Minas Gerais	-0.223	0.027
Pará	-0.308	0.004
Paraíba	-0.143	0.197
Paraná	-0.348*	<0.001
Pernambuco	-0.425*	<0.001
Piauí	-0.292	0.007
Rio de Janeiro	-0.308	0.002
Rio Grande do Norte	-0.266	0.017
Rio Grande do Sul	-0.133	0.189
Rondônia	-0.341	0.002
Roraima	-0.207	0.069
Santa Catarina	-0.389*	<0.001
São Paulo	-0.092	0.336
Sergipe	-0.236	0.033
Tocantins	-0.101	0.379

Note. *p <0.001

diminutive forms. However, further research is needed with a larger sample size of participants for each state to determine how all age groups are using *-zinho* and if the apparent time shift towards *-zinho* is a reliable conclusion.

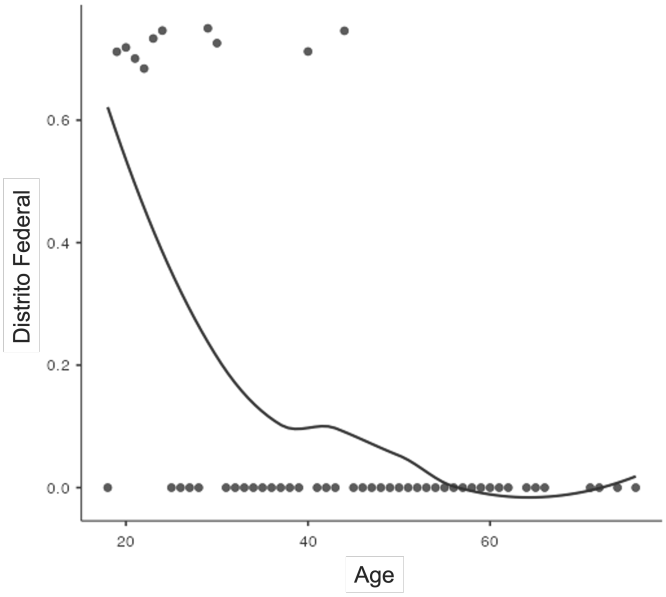

Figure 4.17: Frequency of *-zinho* usage in Distrito Federal plotted against the age of participants.

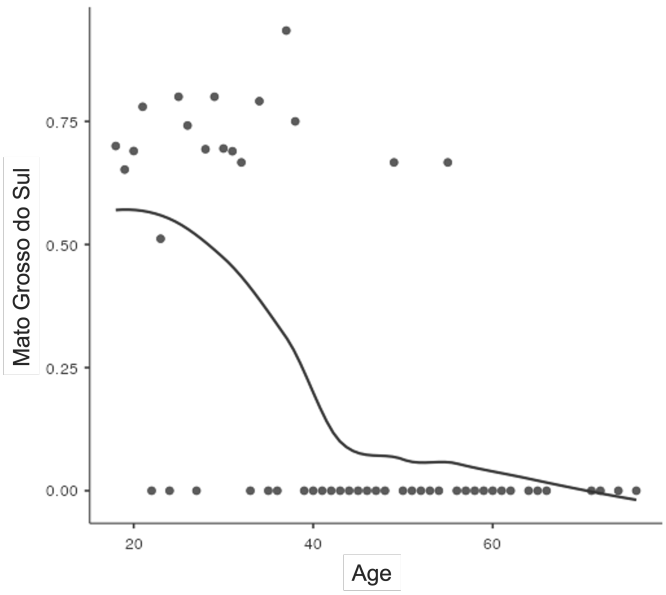

Figure 4.18: Frequency of *-zinho* usage in Mato Grosso do Sul plotted against age of participants.

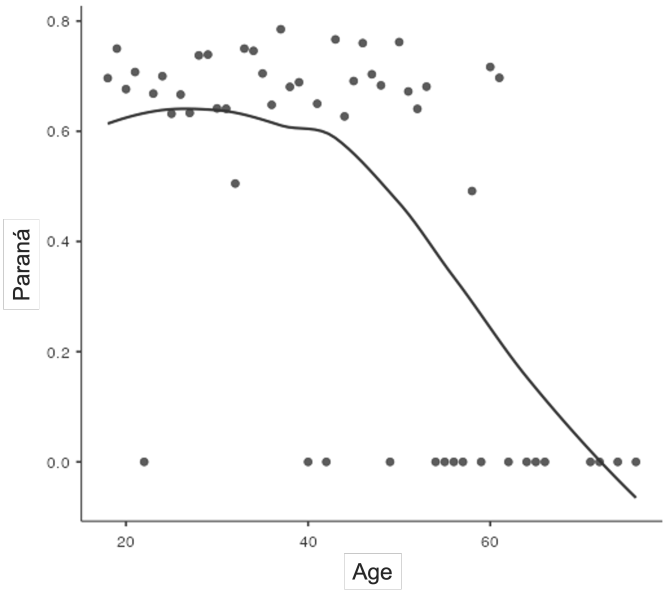

Figure 4.19: Frequency of *-zinho* usage in Paraná plotted against age of participants.

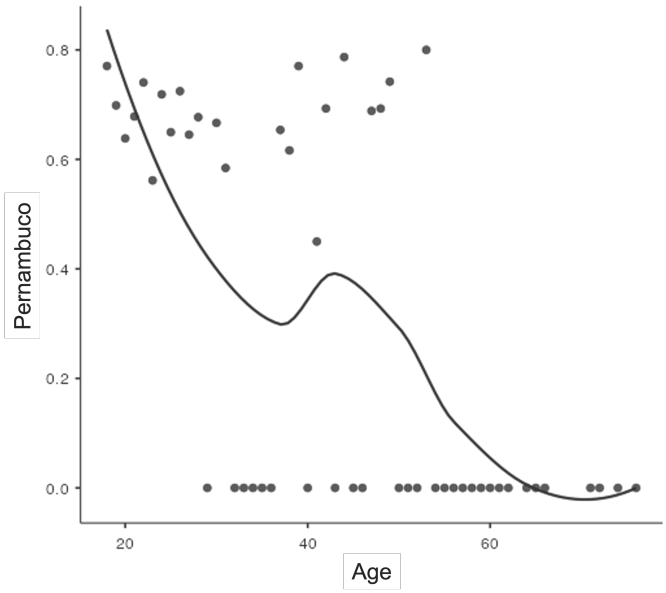

Figure 4.20: Frequency of *-zinho* usage in Pernambuco plotted against age of participants.

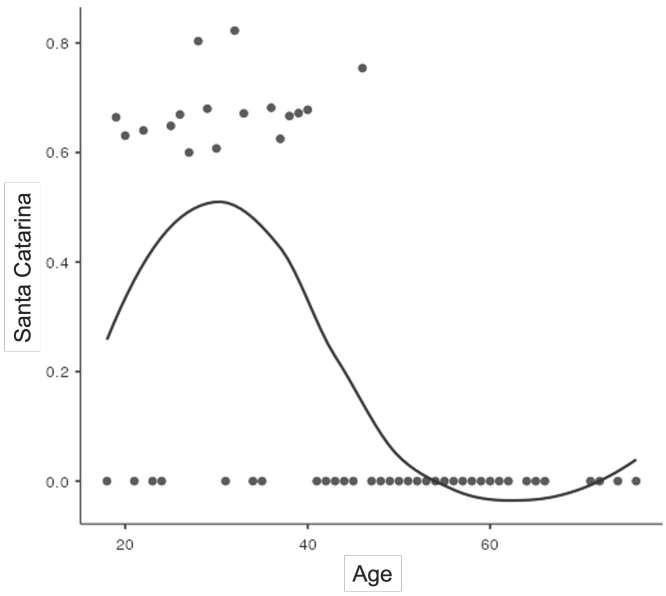

Figure 4.21: Frequency of *-zinho* usage in Santa Catarina plotted against age of participants.

Another statistically significant variable determining the use of *-zinho* is the correlation of age with the proportion of responses of final phone by stress. Variables that were significant in the post hoc analysis using Kendall's tau B are shown in Table 4.8.

Words with the final phone of /S/ take *-inho* due to orthographic reasons, as there would be no difference between adding *-inho* or *-zinho* to a word ending in /S/, such as *rapaz* (young man). Thus, the final phones by stress of final /S/ with an orthographic {z} (F-z) and penultimate /S/ (Pen-s) have no data for *-zinho* and are indicated with a dash in Table 4.8.

A post hoc analysis was done on the significant variables. The final phones by stress with p-values of <0.001 are those with final stress ending in a diphthong with [ẽĩ̯] (F-Nasal-e), words with final stress ending in a diphthong with [õ] (F-Nasal-o), words with final stress ending in a stop (F-stop), and words with final stress ending in a diphthong with [u] (F-u). Scatter plots were created for each of the five variables, as shown in Figures 4.22–4.25.

Table 4.8: Correlation matrix of Age with each Final Phone by Stress for *-zinho*. Final phones by stress without any data are indicated with a dash.

	Kendall's tau B	**p-value**
AP-a	0.081	0.398
AP-e	0.289	0.003
AP-o	0.072	0.453
AP-stop	-0.210	0.029
F-a	0.179	0.064
F-Nasal-a	0.228	0.041
F-e	0.225	0.021
F-Nasal-e	0.476*	<0.001
F-Nasal-i	0.315	0.005
F-l	0.300	0.002
F-Nasal-o	0.392*	<0.001
F-r	0.161	0.093
F-stop	-0.344*	<0.001
F-u	0.376*	<0.001
F-z	-	-
Pen-a	-0.124	0.196
Pen-e	0.152	0.114
Pen-Nasal-e	0.267	0.006
Pen-i	0.202	0.037
Pen-l	0.269	0.005
Pen-o	-0.017	0.856
Pen-s	-	-

Note. *p <0.001

The use of *-zinho* in final-stress English loan words ending in a stop (F-stop) and final-stress words ending in a diphthong with [u] (F-u) words, shown in Figures 4.22–4.23,

follows a downward trend and shows an apparent time shift towards using *-zinho*, with more variety in usage among older participants. The use of *-zinho* in final-stress words ending in a stop (F-stop), as seen in Figure 4.22, follows a downward trend, with more variety in usage among older participants. The range is wide as well, with participants in their 20s using *-zinho* about 50% of the time in final stress words ending in a stop and participants above the age of 50 using *-zinho* anywhere between 60% of the time to 10%. This shows a trend in younger participants using *-zinho* differently than older participants, with their usage being more tightly packed in the same area on the scatter plot. The downward trend in final stress words ending in a diphthong with [u] in Figure 4.23 is opposite of what the trend line is showing. There is variety in final stress [u] *-zinho* usage, especially above the age of 25. Participants above the age of 30 ranged from using *-zinho* 92% to 100% of the time, whereas those under age 25 were more closely clustered around 96%.

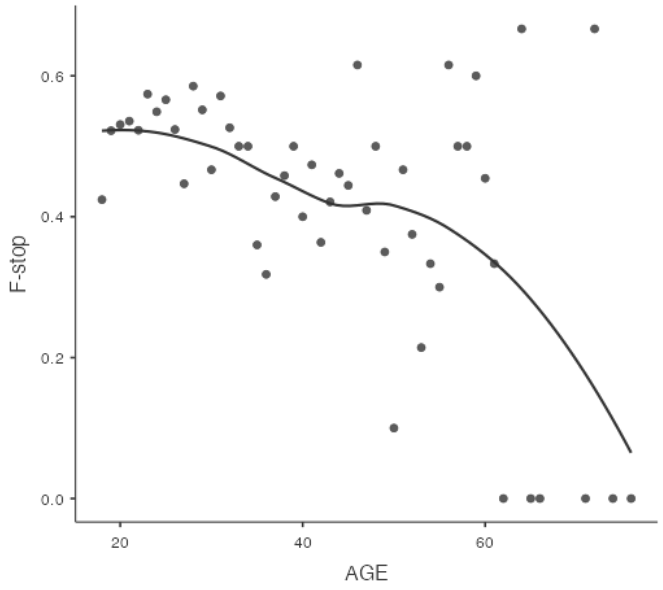

Figure 4.22: Frequency of *-zinho* usage in final stop (F-stop) words plotted against age of participants.

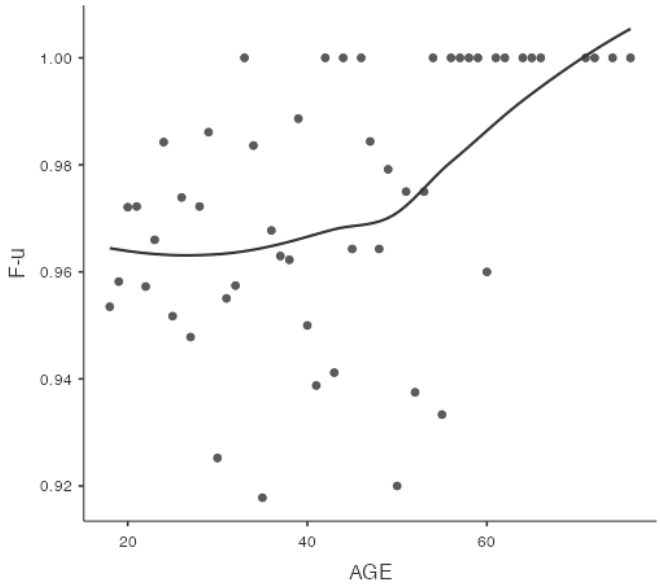

Figure 4.23: Frequency of *-zinho* usage in final stressed words ending in a diphthong with [u] (F-u) plotted against age of participants.

The two other statistically significant final stress by phones that show an apparent time shift away from *-zinho* are final stress words ending in a diphthong with [ẽĩ̯] (F-Nasal-e) and final stress words ending in a diphthong with [õ] (F-Nasal-o). Final stress words ending in a diphthong with [ẽĩ̯], as shown in Figure 4.24, starts at about 75% and shows younger participants using *-zinho* in final stress words ending in a diphthong with [ẽĩ̯] (F-Nasal-e) words slightly less often than older participants. The usage of *-zinho* increases with age, getting closer to 85% for participants over the age of 40. In Figure 4.25, the use of *-zinho* as opposed to other diminutive forms in final stress words ending in a diphthong with [õ] (F-Nasal-o) ranges from about 85% to 100% of the time. The scatter plot looks a bit like an explosion, with younger participants more clustered in the 95% range and the spread increasing as age increases.

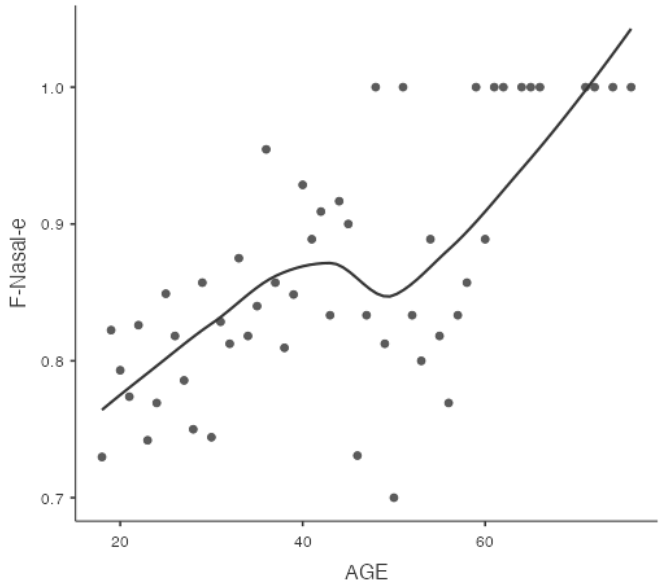

Figure 4.24: Frequency of *-zinho* usage in final stress [ẽĩ̯] (F-Nasal-e) words plotted against age of participants.

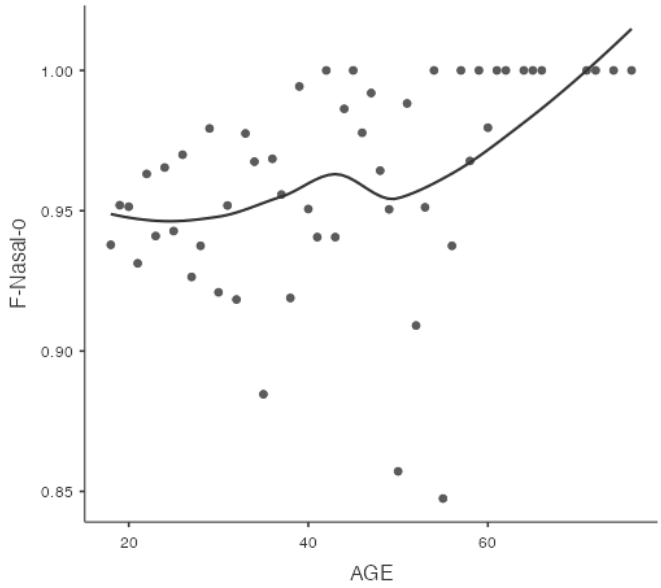

Figure 4.25: Frequency of *-zinho* usage in final stress [õ] (F-Nasal-o) words plotted against age of participants.

Although the difference in percentage of use is not very big, the data show that younger participants use *-zinho* with greater consistency than older participants. With regards to all of the final phones by stress where *-zinho* is the diminutive form of choice, the general trend is that younger participants are more uniform in their diminutive usage than older participants. Whether the use of *-zinho* is increasing or decreasing, there is a difference among the generations which participated in this study, and older participants are less consistent in their use of *-zinho* than younger participants.

The diminutive form of *-zinho* was the most used in this survey, as seen in Appendix A, and had the most statistically significant data. This study shows that younger participants tend to use *-zinho* differently than older participants and that there is an apparent time shift both towards and away from *-zinho* usage, depending on the final phone by stress.

The diminutive forms of *-inho*, its variations *-Xinho* and and *-XXinho*, and *-zinho* accounted for 96.94% of the diminutive forms gathered as part of this survey. Although *-inho* and *-zinho* are recognized as the most productive forms of the diminutive (see Chapter 2), the diminutives *-ito* and *-zito* are also used in Brazilian Portuguese.

4.7 -ito

The diminutive form *-ito* is somewhat parallel to the form of *-inho*, and can be used in the same scenarios. In this study, *-ito* was used in 0.33% of the total survey responses. The most common words ending in *-ito* were those ending in /S/, such as *rapaz* (young man) and *nariz* (nose), and English loan words, such as *blog* and *Facebook*.

The findings of the omnibus likelihood ratio tests, shown in Table 4.9, did not show any statistically significant predictors.

4.8 -Xito

Similarly to how *-Xinho* is a form of *-inho*, with the X representing the replaced vowel, *-Xito* is a variation of *-ito*. This form was used in 0.42% of the total survey responses. Similarly to *-Xinho*, *-Xito* was used in words ending in /a/, /e/, and /o/, such as *coisa* (thing) becoming *coisita*, *príncipe* (prince) becoming *príncipito*, and *brinco* (earring) becoming *brinquito*.

Table 4.9: Results of the binomial logistic regression on *-ito*.

Predictor	**X^2**	**df**	**p**
Age	6.82e-13	1	1.000
State Origin	5.09e-7	26	1.000
Final Phone by Stress	1.50e-9	21	1.000
Age * State Origin	31.26	26	0.219
Age * Final Phone by Stress	8.12	21	0.995
State Origin * Final Phone by Stress	70.45	546	1.000
McFadden R^2 = 0.426			

The findings of the omnibus likelihood ratio tests, as seen in Table 4.10, did not show any statistically significant predictors.

Table 4.10: Results of the binomial logistic regression on *-Xito*.

Predictor	**X^2**	**df**	**p**
Age	-7.23e-11	1	1.000
State Origin	16.61	26	0.920
Final Phone by Stress	1.09e-8	21	1.000
Age * State Origin	38.43	26	0.055
Age * Final Phone by Stress	3.22	21	1.000
State Origin * Final Phone by Stress	50.41	546	1.000
McFadden R^2 = 0.273			

4.9 -zito

The diminutive form of *-zito* is parallel to the more common *-zinho* and follows the same rules. While still significantly less common than *-inho* and *-zinho*, *-zito* is similar to *-zinho* in that it occurs more often than its [z]-less counterparts. In this study, *-zito* was used in 2.10% of the total survey responses. Following the same rules as *-zinho*, the most common words that used *-zito* were those ending in consonants, such as *animal* (animal); diphthongs, such as *coração* (heart); and stressed vowels, such as *bebê* (baby). Words with antepenultimate stress, such as *acadêmico* (academic), are also common in *-zito* usage.

The omnibus likelihood ratio test findings, as seen in Figure 4.11, show a p-value of <0.001 for state origin and age by state origin. Because of the correlation between the variables, only age by state origin will be further analyzed.

Table 4.11: Results of the binomial logistic regression on *-zito*.

Predictor	**X^2**	**df**	**p**
Age	7.80e-10	1	1.000
State Origin	59.6	26	<0.001
Final Phone by Stress	1.93e-8	21	1.000
Age * State Origin	168.5	26	<0.001
Age * Final Phone by Stress	14.8	21	0.833
State Origin * Final Phone by Stress	278.5	546	1.000
McFadden R^2 = 0.143			

A post hoc analysis was done on the significant variables, as shown in Table 4.12. Only states with p-values of <0.001 were further analyzed by using scatter plots. Figures 4.26–4.28 show the scatter plots for Bahia, Rio de Janeiro, and Rio Grande do Sul.

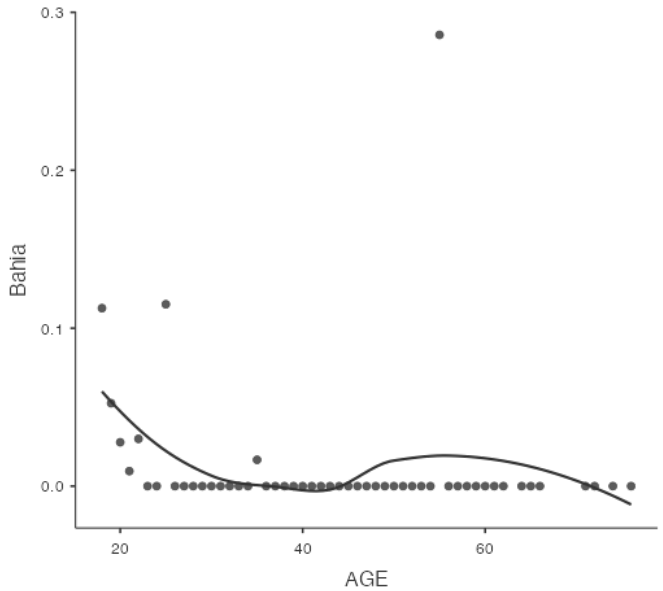

Figure 4.26: Frequency of *-zito* usage by speakers in Bahia plotted against age of participants.

The statistical analysis in Figure 4.26 shows the results from Bahia as being significant, as the younger participants are the only ones to use *-zito*. There is a possible apparent time shift

Table 4.12: Correlation matrix of Age with each State of Origin for *-zito*. States without any data are indicated with a dash.

	Kendall's tau B	**p-value**
Acre	-	-
Alagoas	-	-
Amapá	-0.027	0.816
Amazonas	-0.262	0.019
Bahia	-0.372*	<0.001
Ceará	-0.269	0.019
Distrito Federal	-0.277	0.015
Espírito Santo	-0.041	0.721
Goiás	-0.054	0.638
Maranhão	-0.175	0.116
Mato Grosso	-0.283	0.013
Mato Grosso do Sul	-0.281	0.014
Minas Gerais	-0.305	0.005
Pará	-0.207	0.065
Paraíba	-0.221	0.054
Paraná	-0.284	0.008
Pernambuco	-0.317	0.004
Piauí	-0.261	0.020
Rio de Janeiro	-0.378*	<0.001
Rio Grande do Norte	-0.019	0.868
Rio Grande do Sul	-0.369*	<0.001
Rondônia	-0.307	0.007
Roraima	-	-
Santa Catarina	-0.312	0.005
São Paulo	-0.272	0.005
Sergipe	-0.232	0.043
Tocantins	-	-

Note. *p <0.001

towards using *-zito*, although the outlying high point at 0.3 in the age 50 range would show otherwise. While it may be possible that younger participants from Bahia prefer *-zito*, further research with a larger sample size would determine if this is an accurate representation of all speakers from Bahia.

The data from Rio de Janeiro in Figure 4.27 show more use of *-zito* among younger participants. There may be an apparent time shift away from using *-zito*, as the percentage of use

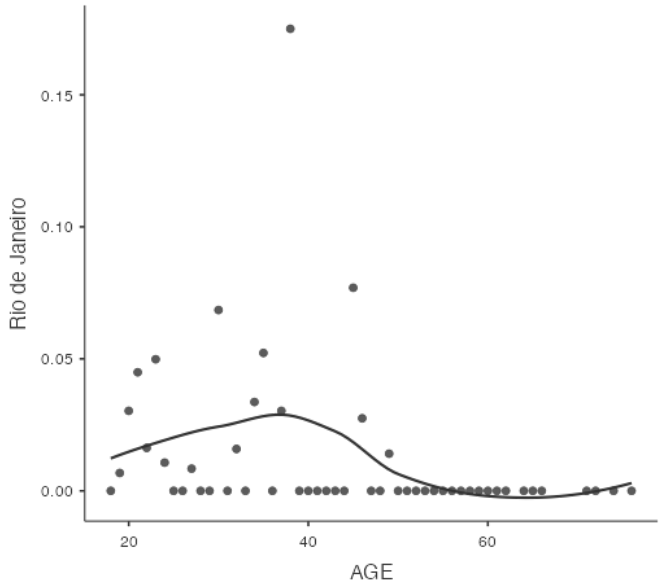

Figure 4.27: Frequency of *-zito* usage by speakers in Rio de Janeiro plotted against age of participants.

rises with age. Similarly to Figure 4.26, the results shown here should be validated with further research to confirm this trend.

In Rio Grande do Sul, the data shown in Figure 4.28 indicate an apparent time shift towards *-zito*, with younger participants around age 20 using *-zito* in about 5% of cases, tapering down as age increases. It is not a very large trend, but it is possible that younger speakers in Rio Grande do Sul use *-zito* more than older participants. However, more data of both words and participants from this particular state would be needed to establish a definite conclusion.

Because a few states show that younger speakers use *-zito* differently, it is possible that this trend could be seen in more areas if there were a larger quantity of data for *-zito*. Further research regarding specifically *-ito*, *-Xito*, and *-zito* diminutive formation would be beneficial to learn more about how and when native speakers of Brazilian Portuguese use these less common diminutive forms as opposed to other, more common diminutive endings.

4.10 Participant Feedback

Although the survey in this study was not designed to record any specific feedback from participants regarding their thoughts on specific instances of diminutive formation, many participants had something to say. From leaving comments in the "other" fill in the blank section

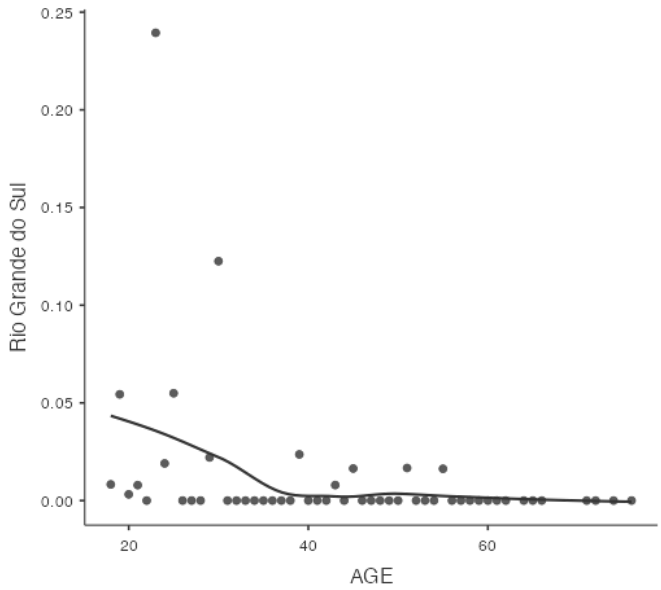

Figure 4.28: Frequency of *-zito* usage by speakers in Rio Grande do Sul plotted against age of participants.

for diminutive words to reaching out via text, email, or voice message, many participants wanted to make their individual opinions heard.

The nonce words included in the study were a source of confusion for some participants. Many participants wrote that it was impossible to use the diminutive with nonce words because the word did not exist. As explained in Section 4.4, some participants thought that the nonce words were typos of actual Portuguese words. A few people left comments such as the following two statements, both about the nonce word *botentá*:

- "Eu não sei que palavra [é] essa então eu não sei si da pra colocar ela no diminutivo" ("I don't know what that word is so I don't know if I can form it in the diminutive")
- "Onde você viu ou ouviu essas palavras? Acredito que deve ser um dialeto. Por exemplo *botentá* é bora tentar. O correto a se falar é vamos tentar" ("Where did you see or hear those words? I think they must be a dialect. For example *botentá* is '[slang] let's give it a shot.' The correct way to say it is 'let's try'.")

Perhaps clearer instructions would have resulted in less confusion and more accurate responses regarding which diminutive form(s) participants would use with nonce words. This is something that could be improved in future studies.

Another category of words which resulted in confusion for participants were English loan words. As one person wrote about several of the loan words: “Nao posso usar o diminuitivo, é outro idioma” (“I can’t use the diminutive, it’s a different language”). Another common approach noted in participants’ comments about the loan words was to shorten the word itself before adding the diminutive. For example, the word *McDonalds* and *Facebook* would not be used with the diminutive, they would first be shorted to Mc or Face.

Participants also noted that different forms of the diminutive would be used to mean different things. One participant stated that *bebezinho* would mean “baby” whereas *bebinho* would be used to describe someone who is drunk. Similarly, a different participant stated that the word *negócio*, meaning “business” or (as a slang term) “thing”, would be *negocinho* for “business” and *negociozinho* for “thing.” Although this study focused on solely the form of the diminutive used rather than its meaning, future studies may find it interesting to take into account the semantic meaning behind different forms of the diminutive.

Chapter 5 Conclusion

To study the variation of different diminutive forms, such as *-inho*, *-zinho*, *-ito*, and *-zito*, this research focused on gathering data regarding how native speakers of Brazilian Portuguese form the diminutive. A survey was created to gather information about the participant, such as age, state, and gender, and how they formed the diminutive. After filling out information about themselves, subjects then selected the diminutive form(s) that they would use for 60 words, which consisted of a mix of actual Portuguese words, English loan words, and nonce words, all with a variety of word stress and final phones. A total of 1,053 responses were analyzed for this study. Participants ranged in age from 18 to 76 and there were at least two participants from each of Brazil's 26 states and federal district.

The results of the survey indicate that the most influential factors in the formation of the diminutive are the age and state of origin of the participant, in addition to the final phone and stress of the word being diminutized. The most commonly used suffix was *-zinho* by far, although this may have been due to the specific 60 words chosen for the survey. The suffixes *-inho* and *-ito* were divided to account for final phones replaced by the diminutive, where *-inho*, *-Xinho*, and *-XXinho*, for example, were analyzed separately.

Statistical analyses of influential variables indicate an apparent time shift in diminutive usage, in which younger participants are using the diminutive differently than older participants. For words ending in *-inho*, the most practically significant results showed that younger participants were less likely to use *-inho* with final stop words, but were more likely than older participants to use *-inho* in final stress words ending in a diphthong with [ẽĩ̯]. For the suffix *-Xinho*, state origin and final phone by stress were considered statistically significant. Although the usage of *-Xinho* varied between states, there was no definitive regional pattern as to which states used it similarly. As far as the final phone by stress is concerned, the usage of *-Xinho* is aligned with the prescriptive grammatical rules indicated in Chapters 1 and 2 for words ending in stress-less and non-nasal vowels. Results indicate that the interaction of age with both state origin and final phone by stress affect the use of the suffix *-zinho*. For the states that were considered statistically significant, the general trend shows that younger participants use *-zinho* about 70% of the time, and that percentage is more likely to vary (either increasing or decreasing) as the age of

the participants increases. A similar result is seen in *-zinho* usage in the age by final phone by stress analysis, where the general trend is that younger participants are more uniform in their usage of *-zinho* than older participants. The final diminutive form with statistically significant data is *-zito*, although the small quantity of *-zito* usage data makes it difficult to determine if the patterns shown in the three states are accurate representations of *-zito* usage in the state as a whole.

Because no previous research had gathered data regarding diminutive formation from all 26 states and the federal district of Brazil, this study is unique in that it provides a broad view of which forms of the diminutive are most used by native speakers of Brazilian Portuguese. However, additional descriptive research would be beneficial to create an even clearer picture. Future studies with larger quantities of test words would be beneficial in determining if the results of this study are accurate representations of the frequency of specific suffix use. Future work could also focus on analyzing diminutive formation in words specifically by stress and final phone or solely using nonce words, similar to Simioni (2019). An even greater number of participants, especially older participants, would also provide more accurate results as to how age affects the formation of the diminutive. Additionally, analyzing other social factors, such as social class and education, would generate more information about which diminutive forms are used by whom. Future studies may choose to focus on different states or regions of Brazil, similar to Cruz (2018), Freitas (2013), Rodrigues (2015), Simioni (2019), Teixeira (2008), and Villalva (2010). However, another study with a large number of participants from each state would enable a continued analysis of how states differ in diminutive usage from each other and whether urban or rural areas affect diminutive formation.

By determining that age, state of origin, and final phone by stress are significant factors contributing to diminutive formation, this study gives a picture of diminutive use in Brazil as a whole. In addition, it also provides a starting point for future research to investigate independent variables in diminutive formation in Brazilian Portuguese more thoroughly.

REFERENCES

Armelin, P. R. G. (2011). Sobre a interação entre as marcas de diminutivo e aumentativo no português brasileiro. *Revista Virtual de Estudos da Linguagem - ReVEL*, *9*(5).

Armelin, P. R. G. (2014). The non-compositional domain: Diminutives and augmentatives in Brazilian Portuguese. *Estudos Linguísticos*, *43*(1), 395-410.

Armelin, P. R. G. (2018). Restrições de localidade nas formações de diminutivo do português brasileiro: Mapeando uma relação de dependência entre -inh e gênero. *DELTA: Documentação de Estudos em Lingüística Teórica e Aplicada*, *34*(2), 483-512. Retrieved from https://doi.org/10.1590/0102-445069247494618507

Bachrach, M., A. & Wagner. (2007). Syntactically driven cyclicity vs output-output correspondence: The case of adjunction in diminutive morphology. *U. Penn Working Papers in Linguistics*, *10*(1). Retrieved from https://doi.org/lingbuzz/000383

Barbosa, J. S. (1822). *Grammatica philosophica da lingua portugueza ou principios de grammatica geral applicados à nossa linguagem*. Lisbon, Academia Real das Sciencias.

Barbosa, M. A. d., M. F. M. & Freitas. (2014). A distribuição e o uso dos diminutivos -inho e -zinho no português brasileiro: Uma abordagem pela fonologia de uso. *Língua, Linguística & Literatura*, *11*(1), 25-51. Retrieved from https://periodicos.ufpb.br/ojs/index.php/dclv/article/view/14092

Barretto, J. F. (1671). *Ortografia da lingua portugueza*. Lisbon.

Barros, J. d. (1540). *Grammática da lingua portuguesa*. Lisbon, Olyssipone.

Bechara, E. (1961). *Moderna gramática portuguesa*. Rio de Janeiro: Nova Fronteira.

Bisol, L. (2010). O diminutivo e suas demandas. *DELTA: Documentação de Estudos em Lingüística Teórica e Aplicada*, *26*(1), 58-85. Retrieved from https://doi.org/10.1590/s0102-44502010000100003

Cagliari, G. M. C., L. C. & Cagliari. (2000). A epêntese consonantal em português e sua interpretação na teoria da otimalidade. *Revista de Estudos da Linguagem*, *9*(1). Retrieved from https://doi.org/10.17851/2237-2083.9.1.109-162

Criado de Diego, M. A., C. & Andión-Herrero. (2016). Variación y variedad de diminutivos y pronombres. aspectos de interés para la enseñanza de español a lusohablantes. *Calidoscópio*, *14*(1). Retrieved from https://doi.org/10.4013/cld.2016.141.09

Cruz, R. d. C. d., A. da & Oliveira Azevedo. (2018). Um poquin de Goiás: Usos do diminutivo no noroeste goiano. *Porto Das Letras*, *4*(1), 68-82. Retrieved from https://sistemas.uft.edu.br/periodicos/index.php/portodasletras/article/view/3808/13263

Cunha, L., C. & Cintra. (1985). *Nova gramática do português contemporâneo*. Editora Nova Fronteira.

Câmara Jr., J. M. (1975). *Estrutura da língua portuguesa*. Petrópolis: Vozes.

Davies, M. (2016). *Corpus do português: Web/dialects*. Available online at http://www.corpusdoportugues.org/web-dial/.

Eddington, D. E. (2019). An experimental investigation of variation in Spanish diminutives. *Dialectologia*. Retrieved from https://doi.org/10.1344/dialectologia2019.24.4

Ferreira, M. (2005). Diminutives in Brazilian Portuguese and output-output correspondence. *Theoretical and Experimental Approaches to Romance Linguistics*, 109-123. Retrieved from https://doi.org/10.1075/cilt.272.08fer

Freire, J. F. (1842). *Reflexões sobre a língua portuguesa*. Lisbon: Typographia da Academia Geral de Ciências de Lisboa.

Freitas, M. F., M. A. & Barbosa. (2013). A alternância do diminutivo -inho/-zinho no português brasileiro: Um enfoque variacionista. *Alfa : Revista De Linguística (São José Do Rio Preto)*, *57*(2), 577-605. Retrieved from https://doi.org/10.1590/s1981-57942013000200011

Guimarães, G., M. & Mendes. (2011). Diminutivo em português brasileiro: Sufixação ou infixação? *Estudos Linguísticos*, *40*(1), 364-378. Retrieved from https://revistas.gel.org.br/estudos-linguisticos/article/download/1402/942

Hunter, A. (2019). *Portuguese language dialects- brazil.* (Retrieved from https://en.wikipedia.org/wiki/Portuguese_dialects#/media/File:Portugueselanguage dialects-Brazil_(colored).svg.)

Lee, S. H. (1995). *Morfologia e fonologia lexical do português* (Unpublished doctoral dissertation). Universidade Estadual de Campinas.

Lee, S. H. (1999). Sobre a formação de diminutivo do português brasileiro. *Revista de Estudos da Linguagem*, *8*(1). Retrieved from

https://doi.org/10.17851/2237-2083.8.1.113-124

Lee, S. H. (2013). Interface fonologia-morfologia: Diminutivos no PB. *Revista Diadorim*, 113-125. Retrieved from https://doi.org/10.35520/diadorim.2013.v0n0a4009

Leite, Y. d. F. (1974). *Portuguese stress and related rules* (Unpublished doctoral dissertation). University of Texas.

Maciel, M. (1914). *Gramática descriptiva: Baseada nas doutrinas modernas*. Francisco Alves.

Maurer, T. H. J. (1969). Um sufixo de comportamento original: o diminutivo em –zinho. *Estudos em Homenagem a Candido Juca Filho*, 233-246.

Menuzzi, S. (1993). On the prosody of the diminutive alternation -inho/-zinho in Brazilian Portuguese. *Leiden: HIL/University of Leiden*.

Monteiro, J. L. (2011). O mecanismo da interfixação em português. *Revista De Letras*, *1*(30), 138-142.

Moreno, C. (1977). *Os diminutivos em -inho e -zinho e a delimitação do vocábulo nominal no português* (Unpublished master's thesis). Porto Alegre, UFRGS.

Oliveira, F. d. (1536). *Grammatica da lingoagem portuguesa*. Lisbon.

Pereira, C. G. C. (2020). Análise do sufixo avaliativo diminutivo no português brasileiro a partir do uso de corpus eletrônicos. *Enlaces - Revista De Estudos Linguísticos e Literários*, *1*(1), 32-59. Retrieved from /https://publicacoes.ifba.edu.br/index.php/enlaces/article/view/697

Perini, M. A. (2002). *Modern portuguese: A refrence grammar*. Yale University: Ser. Yale Language Series.

Ribeiro, J. (1881). *Gramática portuguesa*. São Paulo: Jorge Seckler.

Rocha, H. S. G., R. M. & Vicente. (2016). Diminutivos: Uma analise comparativa entre o portugues e o ingles. *Signum: Estudos Da Linguagem*, *19*(2), 391-414. Retrieved from https://doi.org/10.5433/2237-4876.2016v19n2p391

Rodrigues, G. F. S. (2015). Realizações dos sufixos -(z)inho/-(z)im no português brasileiro dialetal: Análise variacionista. *Teses Universidade Federal De Minas Gerais*. Retrieved from http://hdl.handle.net/1843/MGSS-AAYNR3

Said Ali, M. (1923). Grammatica secundaria da lingua portugueza. São Paulo: Melhoramentos.

Santana, M. S. (2017). *O sufixo diminutivo em português: forma, funcionamento e significação -*

do século xiii ao xx (Ser. Yale Language Series ed.). São Paulo: Tese de Doutorado, Faculdade de Filosofia, Letras e Ciências Humanas, Universidade de São Paulo. Retrieved from www.teses.usp.br doi: doi:10.11606/T.8.2017.tde-13062017-161624

Schneider, K. P. (2012). *Diminutives in english*. Max Niemeyer Verlag.

Scrivner, M., O. & Diaz-Campos. (2016). Language variation suite: A theoretical and methodological contribution for linguistic data analysis. *Proceedings of the Linguistic Society of America*, *1*. Retrieved from https://doi.org/10.3765/plsa.v1i0.3734

Scrivner, M., Olga & Díaz-Campos. (2016). Language Variation Suite. ([Computer Software] https://languagevariationsuite.shinyapps.io/Pages/)

Simioni, L. C., T. & Schwindt. (2019). O sufixo -inhv/-zinhv e as palavras paroxítonas terminadas em vogal em português brasileiro. *Estudos Linguísticos e Literários*, *61*. Retrieved from https://doi.org/10.9771/ell.v0i61.27838

Skorge, S. (1957). Os sufixos diminutivos em português. *Boletim de Filologia de Lisboa*, *16*, 50-90.

Tagliamonte, R. H., S. A. & Baayen. (2012). Models, forests and trees of york english: Was/were variation as a case study for statistical practice. *Language Variation and Change*, *24*(2), 135-178. Retrieved from https://doi.org/10.1017/s0954394512000129

Tavares, N. C. J. (1999). O uso dos sufixos –inho e –zinho no discurso dos pescadores artesanais. *III Congresso Nacional de Linguística e Filologia*, *3*.

Teixeira, T. W. (2008). A forma e o uso dos sufixos -inho e -zinho em variedades do português do sul do brasil. *Instituto de Letras da Universidade Federal do Rio Grande do Sul*.

The jamovi project. (2021). jamovi. ((Version 1.6) [Computer Software.] Retrieved from https://www.jamovi.org)

Ulrich, L. C., C. W. & Schwindt. (2018). O status morfoprosódico dos sufixos -inho/-zinho, -mente e -íssimo no português brasileiro. *DELTA: Documentação de Estudos em Lingüística Teórica e Aplicada*, *34*(2), 769-788. Retrieved from https://doi.org/10.1590/0102-445030726356878044

Vieira, H. G. (1978). Um estudo fonológico gerativo dos diminutivos em português. *Repositório Institucional UFSC*. Retrieved from https://repositorio.ufsc.br/handle/123456789/112327

Villalva, A. (2000). Estruturas morfológicas: unidades e hierarquias nas palavras do português. *Braga: Fundação Calouste Gulbenkian*.

Villalva, A. (2010). Sobre a formação dos chamados diminutivos no português europeu. *XXV Encontro Nacional da Associação Portuguesa de Linguística. Textos Seleccionados*, 787-793.

Appendix A Pivot Tables

A.1 Age by Final Phone by Stress

Table A.1: Table showing the percentage for each diminutive suffix used for each Age Category and Final Phone by Stress.

		INHO	XINHO	XXINHO	ZINHO	ITO	XITO	ZITO	MISC.
18-22	AP-a		30.26%		68.36%		0.18%	1.01%	0.18%
18-22	AP-e		12.70%		85.67%		0.44%	1.18%	
18-22	AP-o		10.88%	19.29%	68.06%			1.70%	0.08%
18-22	AP-stop	19.48%	0.70%		78.05%	1.29%			0.47%
18-22	F-a		31.15%		66.54%			2.31%	
18-22	F-e	0.52%			94.07%			5.31%	0.10%
18-22	F-l	1.35%			92.12%			6.54%	
18-22	F-Nasal-a		0.67%		99.00%			0.33%	
18-22	F-Nasal-e	18.28%			79.50%			2.22%	
18-22	F-Nasal-i	0.66%			98.67%			0.66%	
18-22	F-Nasal-o	0.52%	0.05%		94.71%			4.45%	0.26%
18-22	F-r	13.56%			82.73%	0.15%		3.51%	0.05%
18-22	F-stop	46.76%			51.83%	1.41%			
18-22	F-u	0.54%			96.42%			3.04%	
18-22	F-z	93.62%		0.31%		5.91%			0.16%
18-22	pen-a		63.08%		33.20%		2.78%	0.95%	
18-22	pen-e	3.98%	14.58%		79.31%	0.07%		1.99%	0.07%
18-22	pen-i		42.47%		55.14%		0.34%	2.05%	
18-22	pen-l			75.71%	23.45%				0.85%
18-22	pen-Nasal-e	1.55%		4.64%	91.04%			2.78%	
18-22	pen-o	0.05%	65.97%	2.40%	28.93%		2.25%	0.35%	0.05%
18-22	pen-s	97.99%		0.67%		1.34%			
23-27	AP-a		31.39%		67.25%		0.27%	0.68%	0.41%
23-27	AP-e		10.56%		87.50%		0.43%	0.86%	0.65%
23-27	AP-o		11.14%	19.68%	67.83%			1.24%	0.11%
23-27	AP-stop	20.95%	0.16%		77.09%	0.33%			1.47%
23-27	F-a		27.48%		70.17%			2.34%	
23-27	F-e				93.02%			6.54%	0.45%
23-27	F-l	1.04%			92.73%			6.08%	0.15%
23-27	F-Nasal-a		0.95%		98.57%			0.48%	
23-27	F-Nasal-e	17.79%			79.05%			3.16%	
23-27	F-Nasal-i				100.00%				
23-27	F-Nasal-o	0.15%			94.87%			4.52%	0.45%
23-27	F-r	13.09%			82.76%	0.07%		3.72%	0.36%
23-27	F-stop	44.13%			53.44%	1.62%		0.40%	0.40%
23-27	F-u	0.46%			96.46%			2.93%	0.15%

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23-27	F-z	89.87%		0.65%		8.84%			0.65%
23-27	pen-a		61.81%		35.05%		2.88%	0.25%	
23-27	pen-e	4.63%	15.90%		78.11%	0.11%		1.26%	
23-27	pen-i		41.97%		56.48%			1.55%	
23-27	pen-l			77.05%	21.72%				1.23%
23-27	pen-Nasal-e	1.94%		4.75%	89.63%			3.24%	0.43%
23-27	pen-o		65.61%	2.58%	29.23%		1.85%	0.52%	0.22%
23-27	pen-s	98.10%		1.90%					
28-32	AP-a		30.50%		68.67%			0.83%	
28-32	AP-e		10.00%		87.67%		0.33%	1.00%	1.00%
28-32	AP-o		12.18%	19.80%	67.17%			0.85%	
28-32	AP-stop	17.97%			80.00%	1.01%			1.01%
28-32	F-a	0.88%	28.32%		69.03%			1.77%	
28-32	F-e				91.11%			8.89%	
28-32	F-l	0.69%			92.20%			7.11%	
28-32	F-Nasal-a		0.74%		98.53%				0.74%
28-32	F-Nasal-e	16.27%			78.92%			4.82%	
28-32	F-Nasal-i				98.54%			1.46%	
28-32	F-Nasal-o	0.12%			94.13%			5.29%	0.46%
28-32	F-r	11.04%			84.20%			4.44%	0.32%
28-32	F-stop	45.56%			53.85%	0.59%			
28-32	F-u	0.47%			95.75%			3.78%	
28-32	F-z	91.89%		0.34%		7.77%			
28-32	pen-a		61.58%		34.47%		3.29%	0.53%	0.13%
28-32	pen-e	2.92%	16.40%		80.03%			0.65%	
28-32	pen-i		32.00%		65.60%			2.40%	
28-32	pen-l			75.61%	23.17%				1.22%
28-32	pen-Nasal-e	3.27%		8.17%	86.93%			1.63%	
28-32	pen-o		64.88%	2.35%	30.31%		1.79%	0.56%	0.11%
28-32	pen-s	94.85%		3.68%		1.47%			
33-37	AP-a		30.56%		68.52%		0.31%		0.62%
33-37	AP-e		9.22%		87.86%		0.97%		1.94%
33-37	AP-o		8.82%	19.61%	70.10%			0.98%	0.49%
33-37	AP-stop	20.96%	0.37%		76.10%	0.74%			1.84%
33-37	F-a		23.08%		76.92%				
33-37	F-e				94.08%			5.92%	
33-37	F-l	1.61%			90.97%			6.77%	0.65%
33-37	F-Nasal-a		1.06%		98.94%				
33-37	F-Nasal-e	12.26%			86.79%			0.94%	
33-37	F-Nasal-i				98.98%				1.02%
33-37	F-Nasal-o	0.16%			94.57%			4.77%	0.49%
33-37	F-r	11.73%			85.10%			2.69%	0.48%
33-37	F-stop	58.65%			41.35%				
33-37	F-u	0.34%			96.23%			2.40%	1.03%
33-37	F-z	92.65%				6.86%			0.49%

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33-37	pen-a		63.69%		34.41%		1.33%	0.57%	
33-37	pen-e	3.10%	12.38%		82.38%	0.24%		1.90%	
33-37	pen-i		28.74%		68.97%		1.15%	1.15%	
33-37	pen-l			80.00%	20.00%				
33-37	pen-Nasal-e	1.43%		5.71%	89.52%			3.33%	
33-37	pen-o		64.67%	1.46%	31.44%		1.13%	0.97%	0.32%
33-37	pen-s	95.83%		3.12%		1.04%			
38-42	AP-a		33.45%		65.88%		0.34%	0.34%	
38-42	AP-e		5.49%		92.31%			1.10%	1.10%
38-42	AP-o		9.89%	18.68%	70.33%			1.10%	
38-42	AP-stop	22.40%	0.80%		76.00%				0.80%
38-42	F-a		27.85%		72.15%				
38-42	F-e		0.75%		95.52%			3.73%	
38-42	F-l	1.09%			92.03%			6.88%	
38-42	F-Nasal-a		1.15%		98.85%				
38-42	F-Nasal-e	11.34%			86.60%			2.06%	
38-42	F-Nasal-i				100.00%				
38-42	F-Nasal-o				96.25%			3.56%	0.19%
38-42	F-r	11.41%			85.20%			2.85%	0.53%
38-42	F-stop	54.45%			45.55%				
38-42	F-u				96.96%			2.66%	0.38%
38-42	F-z	92.86%				6.59%			0.55%
38-42	pen-a		66.31%		31.96%		1.08%	0.65%	
38-42	pen-e	4.55%	10.96%		83.16%			1.34%	
38-42	pen-i		36.91%		61.91%			1.19%	
38-42	pen-l			80.41%	19.59%				
38-42	pen-Nasal-e	1.07%		6.42%	89.84%			2.67%	
38-42	pen-o		67.82%	2.18%	28.00%		0.73%	0.73%	0.55%
38-42	pen-s	98.85%		1.15%					
43-47	AP-a		25.19%	0.38%	74.43%				
43-47	AP-e		5.99%		93.41%			0.60%	
43-47	AP-o		7.46%	18.81%	73.13%			0.30%	0.30%
43-47	AP-stop	22.75%			75.97%	0.43%			0.86%
43-47	F-a		24.62%		75.39%				
43-47	F-e		0.79%		94.49%			4.72%	
43-47	F-l	0.81%			96.37%			2.82%	
43-47	F-Nasal-a				100.00%				
43-47	F-Nasal-e	15.56%			82.22%			2.22%	
43-47	F-Nasal-i				100.00%				
43-47	F-Nasal-o		0.21%		97.74%			1.64%	0.41%
43-47	F-r	12.70%			85.16%			1.76%	0.39%
43-47	F-stop	51.69%			48.32%				
43-47	F-u				97.96%			2.04%	
43-47	F-z	92.35%		0.59%		7.06%			
43-47	pen-a		63.53%		34.82%		1.41%	0.24%	

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43-47	pen-e	1.46%	11.37%		86.88%		0.29%		
43-47	pen-i		20.00%		78.57%			1.43%	
43-47	pen-l			76.40%	23.60%				
43-47	pen-Nasal-e	1.18%		4.71%	90.59%			3.53%	
43-47	pen-o		64.98%	1.21%	31.78%		1.62%	0.40%	
43-47	pen-s	100.00%							
48-52	AP-a		28.00%		70.29%		0.57%	1.14%	
48-52	AP-e		8.62%		86.21%		0.86%	3.45%	0.86%
48-52	AP-o		9.91%	15.32%	72.52%			1.80%	0.45%
48-52	AP-stop	17.45%			81.21%	0.67%			0.67%
48-52	F-a		29.79%		70.21%				
48-52	F-e				91.18%			8.82%	
48-52	F-l	4.85%			92.73%			2.42%	
48-52	F-Nasal-a				100.00%				
48-52	F-Nasal-e	9.26%			87.04%			3.70%	
48-52	F-Nasal-i				100.00%				
48-52	F-Nasal-o				94.26%			5.74%	
48-52	F-r	9.17%			86.39%	0.30%		4.14%	
48-52	F-stop	57.14%			36.51%	6.35%			
48-52	F-u				96.18%			3.82%	
48-52	F-z	88.70%				11.30%			
48-52	pen-a		61.32%		34.49%		2.44%	1.74%	
48-52	pen-e	5.29%	10.57%		81.50%			2.64%	
48-52	pen-i		30.44%		65.22%			4.35%	
48-52	pen-l			55.74%	40.98%			1.64%	1.64%
48-52	pen-Nasal-e	1.83%			92.66%			4.59%	0.92%
48-52	pen-o		62.72%	2.66%	31.06%		2.96%	0.59%	
48-52	pen-s	100.00%							
53-57	AP-a		24.32%		74.32%			1.35%	
53-57	AP-e		8.42%		90.53%				1.05%
53-57	AP-o		8.90%	18.32%	71.73%			1.05%	
53-57	AP-stop	25.55%			72.99%	0.73%			0.73%
53-57	F-a		16.67%		80.95%			2.38%	
53-57	F-e				88.59%			11.41%	
53-57	F-l	2.76%			91.72%	0.69%		4.83%	
53-57	F-Nasal-a				97.83%			2.17%	
53-57	F-Nasal-e	12.96%			81.48%			3.70%	1.85%
53-57	F-Nasal-i				97.78%			2.22%	
53-57	F-Nasal-o		0.35%		93.99%			5.30%	0.35%
53-57	F-r	12.96%			82.06%	0.33%		4.65%	
53-57	F-stop	57.69%			38.46%	3.85%			
53-57	F-u				97.84%			2.16%	
53-57	F-z	91.00%				9.00%			
53-57	pen-a		60.96%		33.87%		3.59%	1.59%	
53-57	pen-e	2.56%	14.36%		81.54%	0.51%		1.03%	

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53-57	pen-i		31.82%		68.18%				
53-57	pen-l			58.18%	41.82%				
53-57	pen-Nasal-e	1.03%		7.22%	86.60%			5.15%	
53-57	pen-o		63.01%	2.40%	30.82%		1.71%	1.03%	1.03%
53-57	pen-s	100.00%							
58-62	AP-a		31.71%		68.29%				
58-62	AP-e		5.77%		90.39%			1.92%	1.92%
58-62	AP-o		11.00%	18.00%	69.00%			2.00%	
58-62	AP-stop	22.73%	1.52%		75.76%				
58-62	F-a		23.81%		71.43%				4.76%
58-62	F-e	1.35%			94.59%			4.05%	
58-62	F-l	1.33%			96.00%			2.67%	
58-62	F-Nasal-a				100.00%				
58-62	F-Nasal-e	7.41%			92.59%				
58-62	F-Nasal-i				100.00%				
58-62	F-Nasal-o				98.63%			1.37%	
58-62	F-r	11.25%			85.62%			2.50%	0.62%
58-62	F-stop	57.14%			42.86%				
58-62	F-u				98.67%			1.33%	
58-62	F-z	96.15%				3.85%			
58-62	pen-a		62.12%		35.61%		1.52%	0.76%	
58-62	pen-e	4.72%	16.04%		78.30%			0.94%	
58-62	pen-i		36.00%		64.00%				
58-62	pen-l			53.57%	42.86%				3.57%
58-62	pen-Nasal-e			3.92%	94.12%			1.96%	
58-62	pen-o		61.84%	2.63%	34.87%			0.66%	
58-62	pen-s	100.00%							
63 and older	AP-a		25.71%		74.29%				
63 and older	AP-e		4.55%		95.45%				
63 and older	AP-o		15.56%	24.44%	60.00%				
63 and older	AP-stop	35.29%	2.94%		61.77%				
63 and older	F-a		27.27%		72.73%				
63 and older	F-e				100.00%				
63 and older	F-l				97.06%			2.94%	
63 and older	F-Nasal-a				100.00%				
63 and older	F-Nasal-e				100.00%				
63 and older	F-Nasal-i				100.00%				
63 and older	F-Nasal-o				100.00%				
63 and older	F-r	10.29%			89.71%				
63 and older	F-stop	66.67%			33.33%				
63 and older	F-u				100.00%				
63 and older	F-z	95.65%				4.35%			
63 and older	pen-a		68.42%		28.07%		3.51%		
63 and older	pen-e	4.35%	6.52%		89.13%				
63 and older	pen-i		36.36%		63.64%				

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63 and older	pen-l			66.67%	33.33%				
63 and older	pen-Nasal-e			8.70%	91.30%				
63 and older	pen-o		75.00%		25.00%				
63 and older	pen-s	100.00%							
	Grand Total	0.00%	30.26%	0.00%	68.36%	0.00%	0.18%	1.01%	0.18%

A.2 Age by State Origin

Table A.2: Table showing the percentage for each diminutive suffix used for each Age Category and State Origin.

		INHO	**XINHO**	**XXINHO**	**ZINHO**	**ITO**	**XITO**	**ZITO**	**MISC.**
Acre	23-27	10.17%	18.64%	3.39%	67.80%				
Acre	38-42	10.00%	15.00%	3.33%	71.67%				
Acre	43-47	7.50%	15.00%	3.33%	74.17%				
Alagoas	18-22	7.37%	14.21%	2.63%	75.79%				
Alagoas	23-27	8.13%	12.20%	3.25%	76.42%				
Alagoas	38-42	6.67%	11.67%	3.33%	78.33%				
Alagoas	43-47	8.33%	10.00%		81.67%				
Alagoas	48-52	5.00%	10.00%		85.00%				
Alagoas	58-62	11.67%	13.33%	1.67%	73.33%				
Amapá	18-22	7.81%	12.50%		79.69%				
Amapá	23-27	6.56%	9.84%	1.64%	81.97%				
Amapá	28-32	5.00%	13.33%	3.33%	78.33%				
Amapá	38-42	13.33%	15.00%	3.33%	66.67%			1.67%	
Amapá	53-57	8.47%	13.56%	3.39%	74.58%				
Amazonas	18-22	8.94%	14.63%	3.25%	70.73%			2.44%	
Amazonas	23-27	8.78%	14.89%	3.44%	71.37%			1.15%	0.38%
Amazonas	28-32	8.47%	13.84%	2.26%	67.80%	0.85%	0.56%	6.21%	
Amazonas	33-37	7.19%	14.97%	2.40%	73.05%			2.40%	
Amazonas	38-42	5.65%	4.84%	0.81%	88.71%				
Amazonas	53-57	8.33%	13.33%	1.67%	75.83%			0.83%	
Amazonas	63 and older	11.67%	21.67%	3.33%	63.33%				
Bahia	18-22	8.60%	17.87%	3.32%	65.54%	0.47%	0.81%	3.39%	
Bahia	23-27	9.29%	14.60%	3.10%	62.83%	0.88%	0.88%	8.41%	
Bahia	28-32	8.19%	16.81%	3.45%	71.55%				
Bahia	33-37	9.60%	18.40%	4.80%	65.60%			0.80%	0.80%
Bahia	43-47	9.55%	14.07%	2.51%	73.87%				
Bahia	48-52	8.26%	14.88%	2.48%	74.38%				
Bahia	53-57	14.29%	14.29%	1.79%	21.43%	5.36%	5.36%	28.57%	8.93%
Bahia	58-62	9.68%	9.68%	3.23%	77.42%				

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Bahia	63 and older	9.17%	15.83%	1.67%	73.33%				
Ceará	18-22	9.34%	16.21%	3.57%	70.47%		0.27%	0.14%	
Ceará	23-27	9.33%	17.33%	3.67%	65.33%	0.67%	0.67%	2.67%	0.33%
Ceará	28-32	8.56%	13.90%	3.21%	73.80%		0.53%		
Ceará	38-42	7.50%	18.33%	3.33%	70.83%				
Ceará	43-47	12.50%	16.67%	3.33%	67.50%				
Ceará	48-52	6.67%	11.67%	3.33%	78.33%				
Ceará	53-57	10.00%	15.00%		75.00%				
Ceará	58-62	8.06%	14.52%	1.61%	75.81%				
Distrito Federal	18-22	8.46%	16.22%	2.96%	70.52%	0.14%	0.14%	1.41%	0.14%
Distrito Federal	23-27	7.87%	14.96%	3.15%	74.02%				
Distrito Federal	28-32	7.38%	15.57%	3.28%	73.77%				
Distrito Federal	38-42	6.06%	19.70%	3.03%	71.21%				
Distrito Federal	43-47	6.56%	14.75%	3.28%	74.59%			0.82%	
Espírito Santo	18-22	8.85%	17.70%	3.10%	69.69%			0.44%	0.22%
Espírito Santo	23-27	7.69%	17.69%	3.85%	70.77%				
Espírito Santo	28-32	8.20%	13.11%	3.28%	75.41%				
Espírito Santo	33-37	10.00%	20.00%	3.33%	65.00%				1.67%
Espírito Santo	38-42	9.23%	16.92%	3.85%	69.23%				0.77%
Espírito Santo	43-47	10.00%	16.67%	3.33%	70.00%				
Espírito Santo	53-57	8.33%	11.67%	3.33%	76.67%				
Espírito Santo	58-62	10.00%	18.75%	2.50%	60.00%		1.25%	7.50%	
Goiás	18-22	7.73%	14.93%	3.06%	72.48%		0.54%	0.72%	0.54%
Goiás	23-27	9.02%	18.03%	3.28%	69.67%				
Goiás	28-32	9.17%	12.50%	2.50%	75.83%				
Goiás	33-37	8.06%	16.13%	3.23%	72.58%				
Goiás	38-42	6.25%	15.62%	3.12%	75.00%				
Goiás	43-47	8.33%	16.67%	3.33%	71.67%				
Goiás	48-52	7.25%	16.67%	2.90%	68.12%		0.72%	4.35%	
Goiás	53-57	10.00%	20.00%	3.33%	66.67%				
Maranhão	18-22	8.74%	17.80%	2.27%	70.23%	0.32%	0.32%	0.32%	
Maranhão	23-27	8.32%	14.96%	2.53%	72.39%	0.32%	0.11%	1.37%	
Maranhão	28-32	8.89%	12.59%	2.96%	63.70%	1.48%	0.74%	9.63%	
Maranhão	33-37	8.33%	11.25%	2.50%	77.92%				
Maranhão	38-42	6.35%	9.52%	3.17%	80.95%				
Maranhão	43-47	7.73%	13.87%	1.60%	74.40%	0.53%	0.53%	1.33%	
Maranhão	48-52	6.02%	11.00%	0.62%	69.71%	1.66%	1.66%	9.34%	
Maranhão	53-57	8.33%	20.00%		71.67%				
Maranhão	63 and older	9.02%	16.39%	3.28%	71.31%				
Mato Grosso do Sul	18-22	8.53%	17.87%	3.20%	69.87%	0.27%		0.27%	
Mato Grosso do Sul	23-27	6.77%	13.91%	2.63%	68.05%	0.75%	1.50%	6.39%	
Mato Grosso do Sul	28-32	7.82%	17.70%	3.45%	70.34%			0.69%	
Mato Grosso do Sul	33-37	5.47%	7.03%	1.56%	85.94%				
Mato Grosso do Sul	38-42	8.33%	13.33%	3.33%	75.00%				

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Mato Grosso do Sul	48-52	8.33%	20.00%	3.33%	66.67%				1.67%
Mato Grosso do Sul	53-57	13.33%	16.67%	3.33%	66.67%				
Mato Grosso	18-22	12.75%	19.90%	4.08%	50.51%	1.02%	3.06%	8.67%	
Mato Grosso	28-32	7.14%	11.61%	1.34%	78.57%		0.45%	0.89%	
Mato Grosso	38-42	6.56%	16.39%	3.28%	73.77%				
Mato Grosso	43-47	6.67%	11.67%		81.67%				
Minas Gerais	18-22	8.15%	16.34%	3.04%	67.54%	0.43%	0.69%	3.73%	0.09%
Minas Gerais	23-27	8.10%	17.00%	3.46%	69.17%		0.10%	0.20%	1.98%
Minas Gerais	28-32	8.82%	19.64%	4.21%	66.53%	0.20%		0.60%	
Minas Gerais	33-37	9.31%	16.67%	3.19%	64.71%	0.74%		5.15%	0.25%
Minas Gerais	38-42	5.46%	18.58%	3.83%	71.58%				0.55%
Minas Gerais	43-47	8.31%	15.33%	2.88%	72.84%		0.32%	0.32%	
Minas Gerais	48-52	9.71%	16.47%	2.94%	68.53%	0.29%	0.29%	1.76%	
Minas Gerais	53-57	9.39%	15.74%	2.28%	62.94%	1.27%	0.51%	7.61%	0.25%
Minas Gerais	58-62	9.92%	19.01%	3.31%	67.77%				
Pará	18-22	8.11%	17.76%	2.70%	66.80%	1.54%	0.39%	2.32%	0.39%
Pará	23-27	9.05%	15.64%	3.70%	68.31%		0.41%	2.88%	
Pará	28-32	7.97%	13.77%	3.62%	68.84%		1.45%	3.62%	0.72%
Pará	33-37	8.76%	12.37%	3.09%	75.77%				
Pará	38-42	9.07%	16.21%	3.30%	62.64%	1.10%	1.37%	6.32%	
Pará	43-47	4.92%	9.84%	1.64%	75.41%	3.28%		3.28%	1.64%
Pará	53-57	7.48%	14.02%	2.80%	66.82%	0.93%	1.40%	6.54%	
Paraíba	18-22	9.38%	14.06%	3.12%	73.44%				
Paraíba	23-27	9.48%	15.21%	3.24%	66.83%	0.50%	0.50%	4.24%	
Paraíba	33-37	9.92%	18.18%	3.31%	68.59%				
Paraíba	38-42	7.50%	14.17%	1.67%	76.67%				
Paraíba	48-52	9.62%	13.46%	5.77%	69.23%				1.92%
Paraíba	53-57	9.09%	14.05%	3.31%	73.55%				
Paraná	18-22	8.31%	16.97%	3.08%	71.07%		0.11%	0.34%	0.11%
Paraná	23-27	8.97%	19.53%	4.21%	65.14%	0.28%	0.56%	1.12%	0.19%
Paraná	28-32	8.01%	17.38%	3.61%	66.90%	0.49%	0.59%	2.83%	0.20%
Paraná	33-37	8.00%	16.16%	2.88%	71.52%	0.48%	0.16%	0.64%	0.16%
Paraná	38-42	9.40%	17.67%	4.03%	68.23%			0.67%	
Paraná	43-47	8.78%	16.59%	2.93%	70.41%	0.33%	0.16%	0.65%	0.16%
Paraná	48-52	8.82%	17.97%	2.61%	68.63%	0.65%		0.98%	0.33%
Paraná	53-57	8.62%	19.83%	3.45%	68.10%				
Paraná	58-62	8.65%	17.84%	2.70%	63.78%	1.08%	0.54%	3.78%	1.62%
Pernambuco	18-22	8.68%	17.27%	3.19%	69.36%		0.40%	1.00%	0.10%
Pernambuco	23-27	9.50%	17.16%	2.98%	68.51%	0.28%	0.14%	1.28%	0.14%
Pernambuco	28-32	7.55%	13.73%	3.43%	65.67%	0.46%	2.29%	6.87%	
Pernambuco	33-37	11.54%	18.46%	3.85%	65.39%			0.77%	
Pernambuco	38-42	9.30%	17.94%	2.66%	65.78%	0.33%	0.33%	3.65%	
Pernambuco	43-47	9.84%	15.30%	2.73%	72.13%				
Pernambuco	48-52	7.92%	13.37%	1.49%	70.79%	0.50%	0.99%	4.95%	

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Pernambuco	53-57	8.33%	10.00%	1.67%	80.00%				
Piauí	18-22	7.58%	10.61%	1.52%	80.30%				
Piauí	23-27	7.30%	12.64%	1.69%	69.38%	0.84%	0.56%	7.02%	0.56%
Piauí	28-32	7.57%	12.70%	2.23%	76.84%			0.45%	0.22%
Piauí	33-37	8.42%	12.72%	1.79%	74.19%		0.18%	2.33%	0.36%
Piauí	38-42	7.94%	12.70%		77.78%			1.59%	
Piauí	43-47	11.27%	14.09%	5.63%	69.01%				
Piauí	53-57	5.17%	5.17%		89.66%				
Rio de Janeiro	18-22	8.33%	16.28%	3.27%	68.69%	0.16%	0.93%	2.18%	0.16%
Rio de Janeiro	23-27	7.81%	15.38%	3.10%	70.84%	0.23%	0.23%	2.18%	0.23%
Rio de Janeiro	28-32	8.62%	17.41%	2.87%	66.97%	0.90%	0.72%	1.62%	0.90%
Rio de Janeiro	33-37	8.19%	17.13%	3.54%	66.29%	0.37%	0.74%	3.35%	0.37%
Rio de Janeiro	38-42	8.82%	14.97%	2.14%	63.10%	1.07%	0.53%	9.36%	
Rio de Janeiro	43-47	7.69%	13.70%	3.37%	71.88%	0.48%	0.48%	2.40%	
Rio de Janeiro	48-52	9.16%	16.03%	3.82%	70.23%			0.76%	
Rio de Janeiro	53-57	9.14%	14.21%	2.03%	74.62%				
Rio de Janeiro	58-62	7.89%	14.04%	1.75%	76.32%				
Rio de Janeiro	63 and older	5.00%	15.00%	1.67%	78.33%				
Rio Grande do Norte	18-22	10.48%	18.95%	2.82%	66.94%				0.81%
Rio Grande do Norte	23-27	11.67%	21.67%	5.00%	61.67%				
Rio Grande do Norte	28-32	11.97%	21.13%	4.23%	62.68%				
Rio Grande do Norte	33-37	6.67%	18.33%	3.33%	70.00%				1.67%
Rio Grande do Norte	38-42	9.14%	16.13%	2.15%	70.43%			1.61%	0.54%
Rio Grande do Norte	43-47	6.56%	18.03%	3.28%	72.13%				
Rio Grande do Sul	18-22	8.99%	17.15%	2.78%	68.58%	0.37%	0.09%	2.04%	
Rio Grande do Sul	23-27	7.75%	17.44%	2.33%	64.15%	0.78%	1.16%	6.20%	0.19%
Rio Grande do Sul	28-32	8.76%	15.24%	3.50%	64.27%	0.53%	1.58%	5.95%	0.18%
Rio Grande do Sul	33-37	6.91%	19.15%	3.19%	70.75%				
Rio Grande do Sul	38-42	10.05%	17.46%	3.70%	67.20%			1.59%	
Rio Grande do Sul	43-47	8.77%	16.23%	3.57%	69.48%	0.32%	0.97%	0.65%	
Rio Grande do Sul	48-52	7.08%	12.50%	0.83%	78.33%	0.42%		0.83%	
Rio Grande do Sul	53-57	8.61%	15.78%	2.87%	71.93%	0.41%		0.41%	
Rio Grande do Sul	58-62	8.33%	6.67%		85.00%				
Rondônia	18-22	8.63%	17.25%	3.19%	66.77%	0.64%	0.32%	3.19%	
Rondônia	23-27	6.25%	18.75%	3.12%	71.88%				
Rondônia	28-32	8.80%	21.60%	3.20%	63.20%	0.80%		2.40%	
Rondônia	33-37	7.56%	15.97%	3.36%	73.11%				
Rondônia	38-42	8.70%	17.39%	2.90%	59.42%		1.45%	8.70%	1.45%
Roraima	18-22	5.74%	13.93%	0.82%	79.51%				
Roraima	33-37	10.00%	18.33%	3.33%	68.33%				
Roraima	43-47	8.33%	11.67%	5.00%	75.00%				
Santa Catarina	18-22	7.55%	17.62%	2.66%	64.06%	1.12%	1.54%	5.45%	
Santa Catarina	23-27	8.94%	16.80%	3.25%	65.31%	0.81%	0.54%	4.34%	
Santa Catarina	28-32	7.06%	18.00%	3.19%	71.07%			0.68%	

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Santa Catarina	33-37	7.30%	16.42%	4.01%	66.42%	0.36%	0.73%	4.01%	0.73%
Santa Catarina	38-42	9.29%	18.58%	4.92%	67.21%				
Santa Catarina	43-47	8.20%	14.75%	1.64%	75.41%				
São Paulo	18-22	8.50%	17.74%	3.13%	67.49%	0.34%	0.44%	2.26%	0.10%
São Paulo	23-27	8.52%	17.55%	3.10%	67.74%	0.42%	0.62%	1.79%	0.28%
São Paulo	28-32	7.59%	17.93%	3.43%	67.62%	0.33%	0.24%	2.49%	0.37%
São Paulo	33-37	8.36%	17.32%	3.17%	66.95%	0.45%	0.49%	2.42%	0.84%
São Paulo	38-42	8.34%	18.04%	3.25%	69.16%	0.15%	0.05%	0.58%	0.44%
São Paulo	43-47	8.62%	16.40%	3.24%	68.83%	0.26%	0.39%	1.94%	0.32%
São Paulo	48-52	9.18%	18.86%	2.86%	65.84%	0.59%	0.69%	1.78%	0.20%
São Paulo	53-57	8.70%	16.57%	3.87%	67.27%	0.41%	0.83%	2.21%	0.14%
São Paulo	58-62	8.22%	17.20%	2.82%	70.86%			0.77%	0.13%
São Paulo	63 and older	9.52%	18.09%	3.81%	67.30%	0.32%	0.63%	0.32%	
Sergipe	18-22	10.83%	24.84%	3.18%	58.60%			2.55%	
Sergipe	23-27	8.20%	9.84%	3.28%	77.05%			1.64%	
Sergipe	28-32	8.59%	12.50%	4.69%	74.22%				
Sergipe	33-37	13.04%	21.74%	8.70%	56.52%				
Sergipe	38-42	8.33%	23.33%	1.67%	66.67%				
Sergipe	43-47	6.67%	5.00%		88.33%				
Sergipe	48-52	8.33%	13.33%	1.67%	76.67%				
Tocantins	23-27	7.69%	18.46%	3.08%	70.77%				
Tocantins	43-47	8.33%	18.33%	3.33%	70.00%				
	Grand Total	10.17%	18.64%	3.39%	67.80%	0.00%	0.00%	0.00%	0.00%

A.3 Final Phone by Stress by State Origin

Table A.3: Table showing the percentage for each diminutive suffix used for each Final Phone by Stress and State Origin.

		INHO	**XINHO**	**XXINHO**	**ZINHO**	**ITO**	**XITO**	**ZITO**	**MISC.**
Acre	AP-a		27.78%		72.22%				
Acre	AP-e		8.33%		91.67%				
Acre	AP-o		8.33%	25.00%	66.67%				
Acre	AP-stop	16.67%			83.33%				
Acre	F-a		40.00%		60.00%				
Acre	F-e				100.00%				
Acre	F-l				100.00%				
Acre	F-Nasal-a				100.00%				
Acre	F-Nasal-e	16.67%			83.33%				
Acre	F-Nasal-i				100.00%				
Acre	F-Nasal-o				100.00%				

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Acre	F-r	11.11%			88.89%	
Acre	F-stop	83.33%			16.67%	
Acre	F-u				100.00%	
Acre	F-z	100.00%				
Acre	pen-a		73.33%		26.67%	
Acre	pen-e	8.33%	4.17%		87.50%	
Acre	pen-i		60.00%		40.00%	
Acre	pen-l			100.00%		
Acre	pen-Nasal-e				100.00%	
Acre	pen-o		68.57%		31.43%	
Acre	pen-s	100.00%				
Alagoas	AP-a		7.14%		92.86%	
Alagoas	AP-e				100.00%	
Alagoas	AP-o		2.63%	15.79%	81.58%	
Alagoas	AP-stop	10.71%			89.29%	
Alagoas	F-a				100.00%	
Alagoas	F-e	3.70%			96.30%	
Alagoas	F-l				100.00%	
Alagoas	F-Nasal-a				100.00%	
Alagoas	F-Nasal-e	20.00%			80.00%	
Alagoas	F-Nasal-i				100.00%	
Alagoas	F-Nasal-o				100.00%	
Alagoas	F-r	10.71%			89.29%	
Alagoas	F-stop	22.22%			77.78%	
Alagoas	F-u	3.70%			96.30%	
Alagoas	F-z	100.00%				
Alagoas	pen-a		60.42%		39.58%	
Alagoas	pen-e	2.78%	5.56%		91.67%	
Alagoas	pen-i		11.11%		88.89%	
Alagoas	pen-l			40.00%	60.00%	
Alagoas	pen-Nasal-e				100.00%	
Alagoas	pen-o		60.71%	3.57%	35.71%	
Alagoas	pen-s	100.00%				
Amapá	AP-a		6.25%		93.75%	
Amapá	AP-e				100.00%	
Amapá	AP-o		5.26%	21.05%	73.68%	
Amapá	AP-stop	20.00%			80.00%	
Amapá	F-a				100.00%	
Amapá	F-e				100.00%	
Amapá	F-l				100.00%	
Amapá	F-Nasal-a				100.00%	
Amapá	F-Nasal-e				100.00%	
Amapá	F-Nasal-i				100.00%	
Amapá	F-Nasal-o				96.67%	3.33%
Amapá	F-r	9.38%			90.62%	

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Amapá	F-stop	40.00%			60.00%				
Amapá	F-u				100.00%				
Amapá	F-z	100.00%							
Amapá	pen-a		68.00%		32.00%				
Amapá	pen-e	9.52%			90.48%				
Amapá	pen-i		20.00%		80.00%				
Amapá	pen-l			60.00%	40.00%				
Amapá	pen-Nasal-e				100.00%				
Amapá	pen-o		61.29%		38.71%				
Amapá	pen-s	100.00%							
Amazonas	AP-a		15.87%		82.54%			1.59%	
Amazonas	AP-e		9.52%		90.48%				
Amazonas	AP-o		7.50%	15.00%	71.25%			6.25%	
Amazonas	AP-stop	26.41%			71.70%				1.89%
Amazonas	F-a		12.50%		81.25%			6.25%	
Amazonas	F-e				91.94%			8.06%	
Amazonas	F-l	4.92%			90.16%			4.92%	
Amazonas	F-Nasal-a				100.00%				
Amazonas	F-Nasal-e	9.52%			90.48%				
Amazonas	F-Nasal-i				100.00%				
Amazonas	F-Nasal-o				94.22%			5.79%	
Amazonas	F-r	10.08%			86.56%			3.36%	
Amazonas	F-stop	38.09%			57.14%	4.76%			
Amazonas	F-u	1.72%			96.55%			1.72%	
Amazonas	F-z	95.00%				5.00%			
Amazonas	pen-a		57.80%		40.37%		0.92%	0.92%	
Amazonas	pen-e	3.70%	6.17%		87.65%			2.47%	
Amazonas	pen-i		26.32%		73.68%				
Amazonas	pen-l			69.56%	30.44%				
Amazonas	pen-Nasal-e			2.50%	95.00%			2.50%	
Amazonas	pen-o		57.26%	0.81%	39.52%		0.81%	1.61%	
Amazonas	pen-s	100.00%							
Bahia	AP-a		33.10%		65.49%			1.41%	
Bahia	AP-e		14.29%		84.61%			1.10%	
Bahia	AP-o		10.46%	21.51%	63.95%			4.07%	
Bahia	AP-stop	20.87%			76.52%	1.74%			0.87%
Bahia	F-a		33.33%		60.61%			6.06%	
Bahia	F-e				92.25%			7.75%	
Bahia	F-l	1.49%			88.81%	0.75%		8.96%	
Bahia	F-Nasal-a				97.56%			2.44%	
Bahia	F-Nasal-e	28.00%			66.00%			4.00%	2.00%
Bahia	F-Nasal-i				97.56%			2.44%	
Bahia	F-Nasal-o	0.39%	0.39%		92.19%			6.64%	0.39%
Bahia	F-r	11.77%			83.46%			4.41%	0.37%
Bahia	F-stop	50.00%			48.00%	2.00%			

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Bahia	F-u	1.60%			93.60%			4.80%	
Bahia	F-z	93.10%				6.90%			
Bahia	pen-a		63.76%		31.65%		3.21%	1.38%	
Bahia	pen-e	5.59%	15.64%		76.54%	0.56%		1.68%	
Bahia	pen-i		33.33%		61.11%			5.56%	
Bahia	pen-l			77.08%	22.92%				
Bahia	pen-Nasal-e	4.60%		3.45%	87.36%			4.60%	
Bahia	pen-o		62.13%	1.84%	31.25%		3.68%	0.37%	0.74%
Bahia	pen-s	95.00%		2.50%		2.50%			
Ceará	AP-a		18.18%		81.82%				
Ceará	AP-e		7.27%		92.73%				
Ceará	AP-o		12.17%	20.87%	66.96%				
Ceará	AP-stop	24.68%			75.33%				
Ceará	F-a		20.83%		79.17%				
Ceará	F-e				100.00%				
Ceará	F-l	1.20%			97.59%			1.20%	
Ceará	F-Nasal-a				100.00%				
Ceará	F-Nasal-e	28.12%			71.88%				
Ceará	F-Nasal-i				100.00%				
Ceará	F-Nasal-o	0.61%			97.58%			1.82%	
Ceará	F-r	13.22%			84.48%			1.72%	0.57%
Ceará	F-stop	57.14%			42.86%				
Ceará	F-u				98.77%			1.23%	
Ceará	F-z	96.43%				3.57%			
Ceará	pen-a		61.33%		36.00%		2.67%		
Ceará	pen-e	6.03%	13.79%		80.17%				
Ceará	pen-i		32.14%		64.29%			3.57%	
Ceará	pen-l			80.64%	19.36%				
Ceará	pen-Nasal-e	1.79%		5.36%	92.86%				
Ceará	pen-o		63.69%	1.12%	34.64%		0.56%		
Ceará	pen-s	92.31%		7.69%					
Distrito Federal	AP-a		18.03%		81.97%				
Distrito Federal	AP-e		12.20%		87.81%				
Distrito Federal	AP-o		2.70%	20.27%	77.03%				
Distrito Federal	AP-stop	9.09%	1.82%		89.09%				
Distrito Federal	F-a		29.41%		70.59%				
Distrito Federal	F-e				98.18%			1.82%	
Distrito Federal	F-l				94.64%			5.36%	
Distrito Federal	F-Nasal-a				100.00%				
Distrito Federal	F-Nasal-e	19.05%			80.95%				
Distrito Federal	F-Nasal-i				100.00%				
Distrito Federal	F-Nasal-o	0.92%			98.17%			0.92%	
Distrito Federal	F-r	13.04%			86.09%			0.87%	
Distrito Federal	F-stop	43.48%			56.52%				
Distrito Federal	F-u				92.73%			7.27%	

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Distrito Federal	F-z	97.30%				2.70%		
Distrito Federal	pen-a		62.24%		36.73%	1.02%		
Distrito Federal	pen-e	1.28%	11.54%		87.18%			
Distrito Federal	pen-i		44.44%		50.00%		5.56%	
Distrito Federal	pen-l			81.82%	13.64%			4.55%
Distrito Federal	pen-Nasal-e	2.63%		2.63%	94.74%			
Distrito Federal	pen-o		68.91%	0.84%	30.25%			
Distrito Federal	pen-s	100.00%						
Espírito Santo	AP-a		22.41%		75.86%			1.72%
Espírito Santo	AP-e		8.11%		86.49%		2.70%	2.70%
Espírito Santo	AP-o		8.57%	21.43%	68.57%		1.43%	
Espírito Santo	AP-stop	25.53%			74.47%			
Espírito Santo	F-a		35.71%		64.29%			
Espírito Santo	F-e				96.00%		4.00%	
Espírito Santo	F-l	2.04%			97.96%			
Espírito Santo	F-Nasal-a				100.00%			
Espírito Santo	F-Nasal-e	15.79%			84.21%			
Espírito Santo	F-Nasal-i				100.00%			
Espírito Santo	F-Nasal-o				98.97%		1.03%	
Espírito Santo	F-r	14.15%			83.96%		0.94%	0.94%
Espírito Santo	F-stop	50.00%			50.00%			
Espírito Santo	F-u				95.92%		4.08%	
Espírito Santo	F-z	100.00%						
Espírito Santo	pen-a		64.05%		34.83%	1.12%		
Espírito Santo	pen-e	4.05%	21.62%		74.32%			
Espírito Santo	pen-i		58.82%		41.18%			
Espírito Santo	pen-l			94.12%	5.88%			
Espírito Santo	pen-Nasal-e			5.88%	94.12%			
Espírito Santo	pen-o		63.21%	0.94%	35.85%			
Espírito Santo	pen-s	100.00%						
Goiás	AP-a		22.58%		77.42%			
Goiás	AP-e		9.76%		90.24%			
Goiás	AP-o		6.33%	18.99%	74.68%			
Goiás	AP-stop	16.98%			83.02%			
Goiás	F-a		13.33%		86.67%			
Goiás	F-e				95.00%		3.33%	1.67%
Goiás	F-l	1.67%			95.00%		3.33%	
Goiás	F-Nasal-a				100.00%			
Goiás	F-Nasal-e				100.00%			
Goiás	F-Nasal-i				100.00%			
Goiás	F-Nasal-o	0.87%			97.39%		0.87%	0.87%
Goiás	F-r	10.66%			88.52%		0.82%	
Goiás	F-stop	47.62%			52.38%			
Goiás	F-u				100.00%			
Goiás	F-z	100.00%						

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Goiás	pen-a		65.69%		31.37%		2.94%		
Goiás	pen-e	3.66%	10.98%		82.93%			2.44%	
Goiás	pen-i		23.53%		70.59%			5.88%	
Goiás	pen-l			94.74%	5.26%				
Goiás	pen-Nasal-e	5.13%			92.31%			2.56%	
Goiás	pen-o		64.00%	2.40%	32.00%		0.80%		0.80%
Goiás	pen-s	100.00%							
Maranhão	AP-a		12.14%		86.43%			1.43%	
Maranhão	AP-e		6.52%		90.22%		1.09%	2.17%	
Maranhão	AP-o		10.79%	13.64%	73.30%			2.27%	
Maranhão	AP-stop	16.13%			81.45%	2.42%			
Maranhão	F-a	2.63%	21.05%		76.32%				
Maranhão	F-e				93.43%			6.57%	
Maranhão	F-l	0.73%			94.16%			5.11%	
Maranhão	F-Nasal-a				100.00%				
Maranhão	F-Nasal-e	14.00%			82.00%			4.00%	
Maranhão	F-Nasal-i				97.67%			2.33%	
Maranhão	F-Nasal-o				93.82%			6.18%	
Maranhão	F-r	9.96%			85.77%	0.36%		3.91%	
Maranhão	F-stop	45.10%			49.02%	5.88%			
Maranhão	F-u				96.21%			3.79%	
Maranhão	F-z	90.53%				9.47%			
Maranhão	pen-a		56.07%		39.33%		2.51%	2.09%	
Maranhão	pen-e	3.30%	7.14%		87.91%			1.65%	
Maranhão	pen-i		35.00%		62.50%			2.50%	
Maranhão	pen-l			64.58%	33.33%			2.08%	
Maranhão	pen-Nasal-e	1.09%		1.09%	93.48%			4.35%	
Maranhão	pen-o		62.46%		34.30%		2.17%	1.08%	
Maranhão	pen-s	100.00%							
Mato Grosso do Sul	AP-a		19.44%		79.17%			1.39%	
Mato Grosso do Sul	AP-e		6.67%		91.11%				2.22%
Mato Grosso do Sul	AP-o		11.96%	18.48%	69.56%				
Mato Grosso do Sul	AP-stop	13.85%			86.15%				
Mato Grosso do Sul	F-a		10.00%		90.00%				
Mato Grosso do Sul	F-e				92.96%			7.04%	
Mato Grosso do Sul	F-l	1.45%			94.20%			4.35%	
Mato Grosso do Sul	F-Nasal-a				100.00%				
Mato Grosso do Sul	F-Nasal-e	8.33%			87.50%			4.17%	
Mato Grosso do Sul	F-Nasal-i				100.00%				
Mato Grosso do Sul	F-Nasal-o				97.06%			2.94%	
Mato Grosso do Sul	F-r	11.43%			86.43%			2.14%	
Mato Grosso do Sul	F-stop	45.45%			54.55%				
Mato Grosso do Sul	F-u				98.51%			1.49%	
Mato Grosso do Sul	F-z	93.62%				6.38%			
Mato Grosso do Sul	pen-a		65.79%		31.58%		0.88%	1.75%	

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Mato Grosso do Sul	pen-e	4.12%	14.43%		81.44%				
Mato Grosso do Sul	pen-i		36.36%		63.64%				
Mato Grosso do Sul	pen-l			87.50%	12.50%				
Mato Grosso do Sul	pen-Nasal-e	2.17%			95.65%			2.17%	
Mato Grosso do Sul	pen-o		64.14%	2.76%	31.03%		2.07%		
Mato Grosso do Sul	pen-s	100.00%							
Mato Grosso	AP-a		24.14%		72.41%			3.45%	
Mato Grosso	AP-e		15.79%		84.21%				
Mato Grosso	AP-o		16.22%	10.81%	72.97%				
Mato Grosso	AP-stop	20.00%			80.00%				
Mato Grosso	F-a		37.50%		62.50%				
Mato Grosso	F-e	10.71%			78.57%			10.71%	
Mato Grosso	F-l				91.67%			8.33%	
Mato Grosso	F-Nasal-a				100.00%				
Mato Grosso	F-Nasal-e	20.00%			80.00%				
Mato Grosso	F-Nasal-i				100.00%				
Mato Grosso	F-Nasal-o	3.77%			86.79%			9.43%	
Mato Grosso	F-r	13.46%			80.77%			5.77%	
Mato Grosso	F-stop	44.44%			55.56%				
Mato Grosso	F-u				92.00%			8.00%	
Mato Grosso	F-z	84.21%		5.26%		10.53%			
Mato Grosso	pen-a		53.85%		36.54%		7.69%	1.92%	
Mato Grosso	pen-e	5.71%	8.57%		85.71%				
Mato Grosso	pen-i		20.00%		70.00%			10.00%	
Mato Grosso	pen-l			50.00%	50.00%				
Mato Grosso	pen-Nasal-e			5.88%	88.23%			5.88%	
Mato Grosso	pen-o		54.55%	3.64%	36.36%		5.45%		
Mato Grosso	pen-s	100.00%							
Minas Gerais	AP-a		29.00%		69.00%		0.33%	1.33%	0.33%
Minas Gerais	AP-e		11.28%		86.15%		0.51%	1.03%	1.03%
Minas Gerais	AP-o		9.04%	20.55%	68.77%			1.37%	0.27%
Minas Gerais	AP-stop	22.89%	1.20%		74.30%	1.20%			0.40%
Minas Gerais	F-a		29.87%		64.94%			5.19%	
Minas Gerais	F-e				92.12%			6.81%	1.08%
Minas Gerais	F-l	1.78%			90.39%			7.47%	0.36%
Minas Gerais	F-Nasal-a				98.85%			1.15%	
Minas Gerais	F-Nasal-e	10.20%			86.73%			3.06%	
Minas Gerais	F-Nasal-i	1.16%			96.51%			2.33%	
Minas Gerais	F-Nasal-o				92.75%			6.34%	0.91%
Minas Gerais	F-r	13.10%			82.76%	0.17%		3.62%	0.34%
Minas Gerais	F-stop	45.19%			51.92%	1.92%			0.96%
Minas Gerais	F-u	0.38%			96.98%			2.26%	0.38%
Minas Gerais	F-z	92.02%		0.53%		6.38%			1.06%
Minas Gerais	pen-a		63.12%		34.22%		1.43%	1.23%	
Minas Gerais	pen-e	4.12%	16.24%		77.83%	0.26%		1.55%	

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Minas Gerais	pen-i		37.80%		59.76%			2.44%	
Minas Gerais	pen-l			82.29%	15.62%				2.08%
Minas Gerais	pen-Nasal-e	1.58%		5.26%	88.42%			4.21%	0.53%
Minas Gerais	pen-o		65.72%	2.12%	28.80%		2.12%	0.88%	0.35%
Minas Gerais	pen-s	96.51%		2.33%		1.16%			
Pará	AP-a		19.18%		79.45%			1.37%	
Pará	AP-e				100.00%				
Pará	AP-o		8.91%	19.80%	68.32%			2.97%	
Pará	AP-stop	28.57%			66.67%	3.17%			1.59%
Pará	F-a		31.58%		68.42%				
Pará	F-e				90.41%			9.59%	
Pará	F-l				92.86%			7.14%	
Pará	F-Nasal-a				100.00%				
Pará	F-Nasal-e	21.43%			78.57%				
Pará	F-Nasal-i				100.00%				
Pará	F-Nasal-o				90.34%			8.28%	1.38%
Pará	F-r	12.50%			80.92%			6.58%	
Pará	F-stop	43.33%			53.33%	3.33%			
Pará	F-u				92.86%			7.14%	
Pará	F-z	82.35%				17.65%			
Paraíba	AP-a		18.61%		81.39%				
Paraíba	AP-e		13.33%		86.67%				
Paraíba	AP-o		6.78%	22.03%	69.49%			1.69%	
Paraíba	AP-stop	30.23%			69.77%				
Paraíba	F-a		25.00%		75.00%				
Paraíba	F-e				93.33%			6.67%	
Paraíba	F-l	2.22%			91.11%			6.67%	
Paraíba	F-Nasal-a				100.00%				
Paraíba	F-Nasal-e	36.84%			57.89%			5.26%	
Paraíba	F-Nasal-i				100.00%				
Paraíba	F-Nasal-o				95.45%			4.55%	
Paraíba	F-r	11.96%			84.78%			3.26%	
Paraíba	F-stop	35.71%			64.29%				
Paraíba	F-u				100.00%				
Paraíba	F-z	93.33%				6.67%			
Paraíba	pen-a		60.53%		38.16%		1.32%		
Paraíba	pen-e	1.82%	12.73%		85.45%				
Paraíba	pen-i		15.38%		84.61%				
Paraíba	pen-l			75.00%	25.00%				
Paraíba	pen-Nasal-e	3.33%			90.00%			3.33%	3.33%
Paraíba	pen-o		69.41%	3.53%	24.71%		1.18%	1.18%	
Paraíba	pen-s	100.00%							
Paraná	AP-a		36.33%		63.67%				
Paraná	AP-e		11.05%		86.74%		0.55%	0.55%	1.10%
Paraná	AP-o		12.10%	19.60%	68.01%				0.29%

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Paraná	AP-stop	21.40%			76.95%	0.82%			0.82%
Paraná	F-a		29.23%		69.23%				1.54%
Paraná	F-e				95.42%			4.58%	
Paraná	F-l	0.78%			94.96%			4.26%	
Paraná	F-Nasal-a				100.00%				
Paraná	F-Nasal-e	8.89%			91.11%				
Paraná	F-Nasal-i				100.00%				
Paraná	F-Nasal-o				96.89%			3.11%	
Paraná	F-r	12.63%			84.12%			2.89%	0.36%
Paraná	F-stop	58.16%			40.82%	1.02%			
Paraná	F-u				99.20%			0.80%	
Paraná	F-z	90.11%		1.65%		7.69%			0.55%
Paraná	pen-a		67.56%		30.44%		1.56%	0.22%	0.22%
Paraná	pen-e	3.50%	15.36%		80.59%			0.54%	
Paraná	pen-i		37.33%		62.67%				
Paraná	pen-l			77.66%	21.28%				1.06%
Paraná	pen-Nasal-e	2.20%		8.24%	87.36%			2.20%	
Paraná	pen-o		68.74%	3.69%	26.02%		1.55%		
Paraná	pen-s	97.56%		2.44%					
Pará	pen-a		63.08%		30.77%		5.38%	0.77%	
Pará	pen-e	3.03%	11.11%		82.83%			3.03%	
Pará	pen-i		31.82%		59.09%			9.09%	
Pará	pen-l			71.43%	28.57%				
Pará	pen-Nasal-e			6.00%	88.00%			6.00%	
Pará	pen-o		58.49%	1.89%	33.33%		3.14%	3.14%	
Pará	pen-s	100.00%							
Pernambuco	AP-a		27.27%		72.73%				
Pernambuco	AP-e		10.00%		89.00%			1.00%	
Pernambuco	AP-o		13.43%	18.91%	66.67%			1.00%	
Pernambuco	AP-stop	25.00%	0.74%		73.53%				0.74%
Pernambuco	F-a		30.95%		69.05%				
Pernambuco	F-e		0.66%		91.45%			7.89%	
Pernambuco	F-l	0.66%			90.73%			8.61%	
Pernambuco	F-Nasal-a		4.26%		95.75%				
Pernambuco	F-Nasal-e	26.67%			70.00%			3.33%	
Pernambuco	F-Nasal-i				100.00%				
Pernambuco	F-Nasal-o	0.34%			95.25%			4.41%	
Pernambuco	F-r	12.30%			82.85%			4.53%	0.32%
Pernambuco	F-stop	48.28%			51.72%				
Pernambuco	F-u				95.20%			4.79%	
Pernambuco	F-z	93.94%				6.06%			
Pernambuco	pen-a		61.54%		34.23%		4.23%		
Pernambuco	pen-e	4.39%	12.68%		80.98%			1.95%	
Pernambuco	pen-i		30.95%		69.05%				
Pernambuco	pen-l			75.00%	25.00%				

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Pernambuco	pen-Nasal-e	2.00%		7.00%	89.00%			2.00%	
Pernambuco	pen-o		63.73%	1.96%	31.70%		2.29%	0.33%	
Pernambuco	pen-s	100.00%							
Piauí	AP-a		19.51%		80.49%				
Piauí	AP-e		2.00%		96.00%			2.00%	
Piauí	AP-o		4.63%	12.96%	81.48%			0.93%	
Piauí	AP-stop	18.92%			81.08%				
Piauí	F-a		4.35%		91.30%			4.35%	
Piauí	F-e				92.41%			7.59%	
Piauí	F-l	1.22%			89.02%			9.76%	
Piauí	F-Nasal-a				95.83%				4.17%
Piauí	F-Nasal-e	19.36%			77.42%			3.23%	
Piauí	F-Nasal-i				100.00%				
Piauí	F-Nasal-o	0.63%			92.45%			6.29%	0.63%
Piauí	F-r	10.71%			84.52%			4.17%	0.60%
Piauí	F-stop	48.15%			48.15%	3.70%			
Piauí	F-u				97.37%			2.63%	
Piauí	F-z	94.12%				3.92%			1.96%
Piauí	pen-a		51.75%		46.85%		1.40%		
Piauí	pen-e	1.79%	11.61%		84.82%			1.79%	
Piauí	pen-i		16.00%		84.00%				
Piauí	pen-l			48.39%	51.61%				
Piauí	pen-Nasal-e			1.89%	94.34%			3.77%	
Piauí	pen-o		50.29%	0.58%	47.98%		0.58%		0.58%
Piauí	pen-s	100.00%							
Rio de Janeiro	AP-a		21.49%		77.27%			0.83%	0.41%
Rio de Janeiro	AP-e		7.19%		88.23%		1.31%	1.96%	1.31%
Rio de Janeiro	AP-o		8.97%	21.38%	68.28%			1.38%	
Rio de Janeiro	AP-stop	18.23%	0.52%		80.21%	0.52%			0.52%
Rio de Janeiro	F-a		27.45%		68.63%			3.92%	
Rio de Janeiro	F-e	0.43%			92.21%			7.36%	
Rio de Janeiro	F-l	1.75%			92.11%			6.14%	
Rio de Janeiro	F-Nasal-a				98.57%			1.43%	
Rio de Janeiro	F-Nasal-e	10.84%			84.34%			4.82%	
Rio de Janeiro	F-Nasal-i				98.59%			1.41%	
Rio de Janeiro	F-Nasal-o				94.41%			4.92%	0.67%
Rio de Janeiro	F-r	12.87%			82.07%			4.64%	0.42%
Rio de Janeiro	F-stop	48.81%			51.19%				
Rio de Janeiro	F-u				96.82%			3.18%	
Rio de Janeiro	F-z	89.61%				9.74%			0.65%
Rio de Janeiro	pen-a		59.33%		35.75%		4.15%	0.78%	
Rio de Janeiro	pen-e	4.31%	14.77%		78.77%		0.31%	1.85%	
Rio de Janeiro	pen-i		44.44%		53.97%			1.59%	
Rio de Janeiro	pen-l			69.05%	29.76%				1.19%
Rio de Janeiro	pen-Nasal-e	1.90%		6.96%	86.08%			5.06%	

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Rio de Janeiro	pen-o		66.81%	1.08%	29.96%		1.51%	0.65%	
Rio de Janeiro	pen-s	95.78%		2.82%		1.41%			
Rio Grande do Norte	AP-a		35.90%		61.54%				2.56%
Rio Grande do Norte	AP-e		15.38%		84.61%				
Rio Grande do Norte	AP-o		11.77%	15.69%	72.55%				
Rio Grande do Norte	AP-stop	26.32%			71.05%				2.63%
Rio Grande do Norte	F-a		41.67%		58.33%				
Rio Grande do Norte	F-e				100.00%				
Rio Grande do Norte	F-l				97.30%			2.70%	
Rio Grande do Norte	F-Nasal-a		16.67%		83.33%				
Rio Grande do Norte	F-Nasal-e	33.33%			66.67%				
Rio Grande do Norte	F-Nasal-i				100.00%				
Rio Grande do Norte	F-Nasal-o				100.00%				
Rio Grande do Norte	F-r	12.99%			85.71%				1.30%
Rio Grande do Norte	F-stop	53.85%			46.15%				
Rio Grande do Norte	F-u	5.26%			92.11%			2.63%	
Rio Grande do Norte	F-z	100.00%							
Rio Grande do Norte	pen-a		63.08%		36.92%				
Rio Grande do Norte	pen-e	7.14%	19.64%		69.64%			1.79%	1.79%
Rio Grande do Norte	pen-i		45.45%		54.55%				
Rio Grande do Norte	pen-l			83.33%	16.67%				
Rio Grande do Norte	pen-Nasal-e	4.00%		20.00%	76.00%				
Rio Grande do Norte	pen-o		72.97%	1.35%	25.68%				
Rio Grande do Norte	pen-s	100.00%							
Rio Grande do Sul	AP-a		32.32%	0.51%	65.15%		0.51%	1.52%	
Rio Grande do Sul	AP-e		2.50%		93.33%			4.17%	
Rio Grande do Sul	AP-o		8.98%	19.59%	70.20%			1.22%	
Rio Grande do Sul	AP-stop	22.16%			77.25%	0.60%			
Rio Grande do Sul	F-a		35.42%		64.58%				
Rio Grande do Sul	F-e				92.82%			7.18%	
Rio Grande do Sul	F-l				92.86%			7.14%	
Rio Grande do Sul	F-Nasal-a		1.75%		98.25%				
Rio Grande do Sul	F-Nasal-e	7.81%			85.94%			6.25%	
Rio Grande do Sul	F-Nasal-i	1.75%			98.25%				
Rio Grande do Sul	F-Nasal-o	0.28%			94.18%			5.26%	0.28%
Rio Grande do Sul	F-r	13.75%			81.94%	0.81%		3.50%	
Rio Grande do Sul	F-stop	54.41%			42.65%	2.94%			
Rio Grande do Sul	F-u				94.92%			5.08%	
Rio Grande do Sul	F-z	92.62%				7.38%			
Rio Grande do Sul	pen-a		62.46%		33.66%		2.91%	0.97%	
Rio Grande do Sul	pen-e	2.00%	11.60%		84.80%			1.60%	
Rio Grande do Sul	pen-i		37.74%		62.26%				
Rio Grande do Sul	pen-l			56.52%	42.03%				1.45%
Rio Grande do Sul	pen-Nasal-e	3.23%		5.65%	88.71%			2.42%	
Rio Grande do Sul	pen-o		67.69%	1.67%	26.74%		2.51%	1.39%	

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Rio Grande do Sul	pen-s	98.25%		1.75%					
Rondônia	AP-a		35.00%		62.50%		2.50%		
Rondônia	AP-e		8.70%		91.30%				
Rondônia	AP-o		6.38%	23.40%	63.83%			6.38%	
Rondônia	AP-stop	17.65%			79.41%	2.94%			
Rondônia	F-a		40.00%		60.00%				
Rondônia	F-e				91.67%			8.33%	
Rondônia	F-l				96.97%			3.03%	
Rondônia	F-Nasal-a				100.00%				
Rondônia	F-Nasal-e				100.00%				
Rondônia	F-Nasal-i				100.00%				
Rondônia	F-Nasal-o				94.29%			5.71%	
Rondônia	F-r	17.14%			78.57%			4.29%	
Rondônia	F-stop	45.45%			45.45%	9.09%			
Rondônia	F-u				93.94%			3.03%	3.03%
Rondônia	F-z	95.45%				4.55%			
Rondônia	pen-a		67.86%		30.36%			1.79%	
Rondônia	pen-e	4.17%	14.58%		79.17%			2.08%	
Rondônia	pen-i		45.45%		45.45%			9.09%	
Rondônia	pen-l			84.61%	15.38%				
Rondônia	pen-Nasal-e	4.55%			90.91%			4.55%	
Rondônia	pen-o		75.00%		23.53%		1.47%		
Rondônia	pen-s	100.00%							
Roraima	AP-a		7.69%		92.31%				
Roraima	AP-e				100.00%				
Roraima	AP-o		5.88%	11.77%	82.35%				
Roraima	AP-stop	8.33%			91.67%				
Roraima	F-a		66.67%		33.33%				
Roraima	F-e				100.00%				
Roraima	F-l				100.00%				
Roraima	F-Nasal-a				100.00%				
Roraima	F-Nasal-e	25.00%			75.00%				
Roraima	F-Nasal-i				100.00%				
Roraima	F-Nasal-o				100.00%				
Roraima	F-r	8.33%			91.67%				
Roraima	F-stop	50.00%			50.00%				
Roraima	F-u				100.00%				
Roraima	F-z	100.00%							
Roraima	pen-a		60.00%		40.00%				
Roraima	pen-e		18.75%		81.25%				
Roraima	pen-i				100.00%				
Roraima	pen-l			75.00%	25.00%				
Roraima	pen-Nasal-e			12.50%	87.50%				
Roraima	pen-o		64.00%		36.00%				

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Roraima	pen-s	100.00%							
Santa Catarina	AP-a		32.20%		63.56%		0.85%	2.54%	0.85%
Santa Catarina	AP-e		10.29%		86.77%		1.47%	1.47%	
Santa Catarina	AP-o		10.14%	19.56%	67.39%			2.90%	
Santa Catarina	AP-stop	15.91%			82.95%	1.14%			
Santa Catarina	F-a		40.74%		59.26%				
Santa Catarina	F-e				88.12%			11.88%	
Santa Catarina	F-l	1.96%			88.23%			8.82%	0.98%
Santa Catarina	F-Nasal-a				100.00%				
Santa Catarina	F-Nasal-e	8.57%			85.71%			5.71%	
Santa Catarina	F-Nasal-i				100.00%				
Santa Catarina	F-Nasal-o				93.81%			6.19%	
Santa Catarina	F-r	13.61%			81.22%	0.47%		4.69%	
Santa Catarina	F-stop	51.35%			48.65%				
Santa Catarina	F-u				95.79%			4.21%	
Santa Catarina	F-z	88.06%				11.94%			
Santa Catarina	pen-a		61.49%		32.18%		5.17%	1.15%	
Santa Catarina	pen-e	4.08%	16.33%		76.19%			3.40%	
Santa Catarina	pen-i		38.71%		54.84%		3.23%	3.23%	
Santa Catarina	pen-l			64.10%	35.90%				
Santa Catarina	pen-Nasal-e			11.11%	83.33%			5.56%	
Santa Catarina	pen-o		69.61%	2.94%	25.98%		1.47%		
Santa Catarina	pen-s	93.33%				6.67%			
São Paulo	AP-a		38.23%		60.94%		0.25%	0.41%	0.17%
São Paulo	AP-e		12.67%		85.49%		0.40%	0.53%	0.92%
São Paulo	AP-o		12.12%	19.21%	67.56%			0.83%	0.28%
São Paulo	AP-stop	20.29%	0.63%		76.46%	0.63%			1.99%
São Paulo	F-a		27.46%		71.48%			1.06%	
São Paulo	F-e	0.09%	0.28%		93.35%			6.28%	
São Paulo	F-l	1.76%			92.40%			5.75%	0.09%
São Paulo	F-Nasal-a		0.59%		99.41%				
São Paulo	F-Nasal-e	15.71%			81.55%			2.74%	
São Paulo	F-Nasal-i				99.71%				0.29%
São Paulo	F-Nasal-o	0.24%	0.09%		95.57%			3.72%	0.38%
São Paulo	F-r	12.32%			83.86%			3.55%	0.27%
São Paulo	F-stop	50.51%			48.48%	0.76%		0.25%	
São Paulo	F-u	0.39%			96.80%			2.52%	0.29%
São Paulo	F-z	91.20%		0.27%		8.39%			0.14%
São Paulo	pen-a		64.28%		32.64%		2.49%	0.58%	
São Paulo	pen-e	3.64%	15.41%		79.50%	0.13%		1.32%	
São Paulo	pen-i		39.61%		59.09%		0.32%	0.97%	
São Paulo	pen-l			77.41%	21.57%				1.02%
São Paulo	pen-Nasal-e	1.36%		5.04%	90.87%			2.59%	0.14%
São Paulo	pen-o	0.05%	66.53%	3.09%	27.62%		1.89%	0.51%	0.32%

Continued on next page

São Paulo	pen-s	97.94%		1.47%		0.59%			
Sergipe	AP-a		33.33%		66.67%				
Sergipe	AP-e				94.44%			5.56%	
Sergipe	AP-o		17.14%	14.29%	68.57%				
Sergipe	AP-stop	30.44%			69.56%				
Sergipe	F-a		37.50%		62.50%				
Sergipe	F-e				96.30%			3.70%	
Sergipe	F-l				92.59%			7.41%	
Sergipe	F-Nasal-a				100.00%				
Sergipe	F-Nasal-e	40.00%			60.00%				
Sergipe	F-Nasal-i				100.00%				
Sergipe	F-Nasal-o				100.00%				
Sergipe	F-r	14.04%			85.97%				
Sergipe	F-stop	44.44%			55.56%				
Sergipe	F-u				100.00%				
Sergipe	F-z	100.00%							
Sergipe	pen-a		61.70%		38.30%				
Sergipe	pen-e	2.63%	13.16%		81.58%			2.63%	
Sergipe	pen-i		22.22%		77.78%				
Sergipe	pen-l			66.67%	33.33%				
Sergipe	pen-Nasal-e			13.64%	86.36%				
Sergipe	pen-o		68.52%	1.85%	29.63%				
Sergipe	pen-s	100.00%							
Tocantins	AP-a		42.86%		57.14%				
Tocantins	AP-e				100.00%				
Tocantins	AP-o		11.11%	22.22%	66.67%				
Tocantins	AP-stop	16.67%			83.33%				
Tocantins	F-a		50.00%		50.00%				
Tocantins	F-e				100.00%				
Tocantins	F-l	14.29%			85.71%				
Tocantins	F-Nasal-a				100.00%				
Tocantins	F-Nasal-e	33.33%			66.67%				
Tocantins	F-Nasal-i				100.00%				
Tocantins	F-Nasal-o				100.00%				
Tocantins	F-r				100.00%				
Tocantins	F-stop	50.00%			50.00%				
Tocantins	F-u				100.00%				
Tocantins	F-z	100.00%							
Tocantins	pen-a		80.00%		20.00%				
Tocantins	pen-e		12.50%		87.50%				
Tocantins	pen-i				100.00%				
Tocantins	pen-l			100.00%					
Tocantins	pen-Nasal-e				100.00%				
Tocantins	pen-o		69.23%		30.77%				

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Tocantins	pen-s	100.00%							
	Grand Total	8.44%	16.59%	3.05%	68.86%	0.33%	0.42%	2.10%	0.22%

Appendix B Digital Flyers

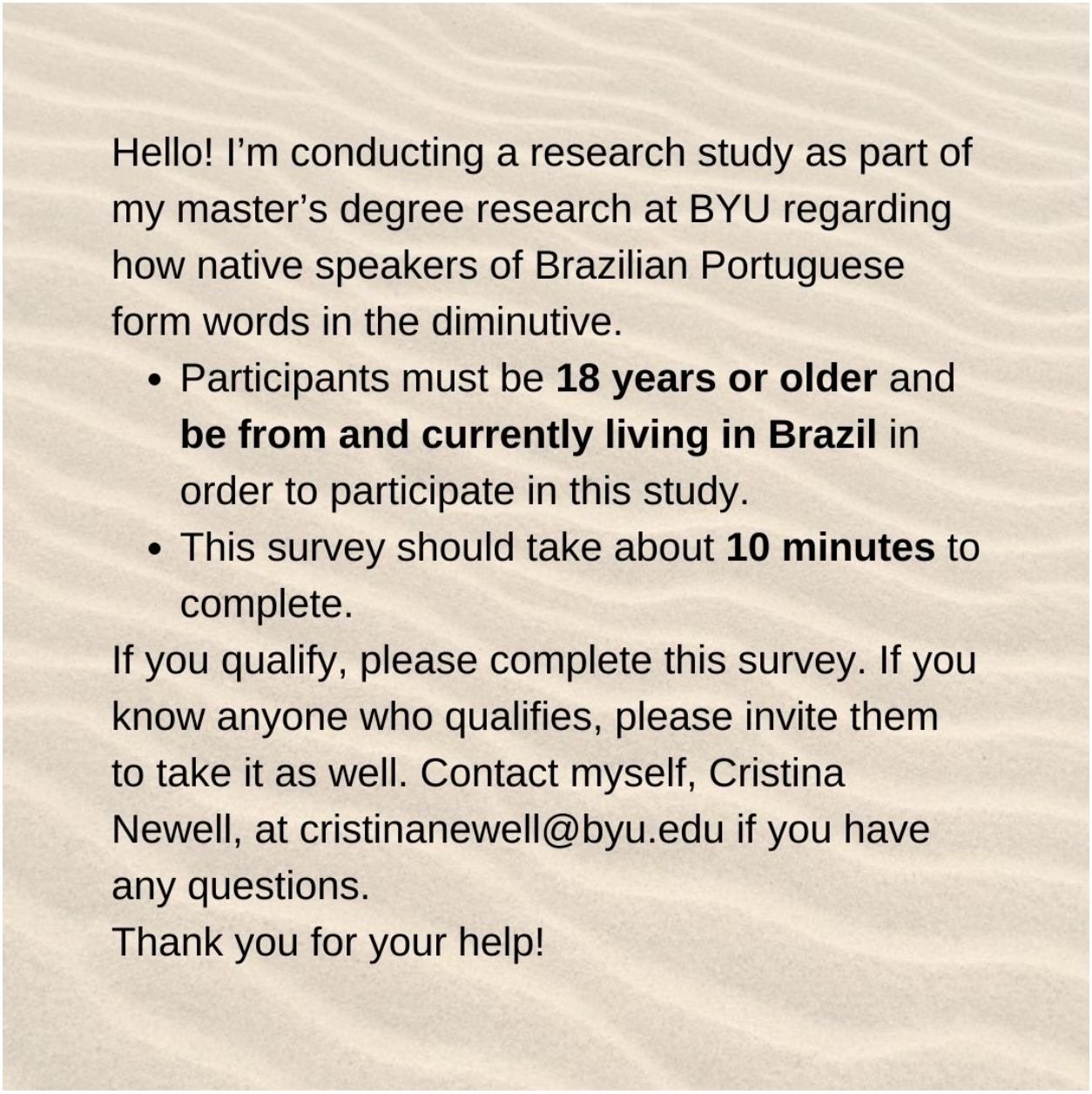

Figure B.1: This is the English version of the digital flyer used to share online to find potential survey participants.

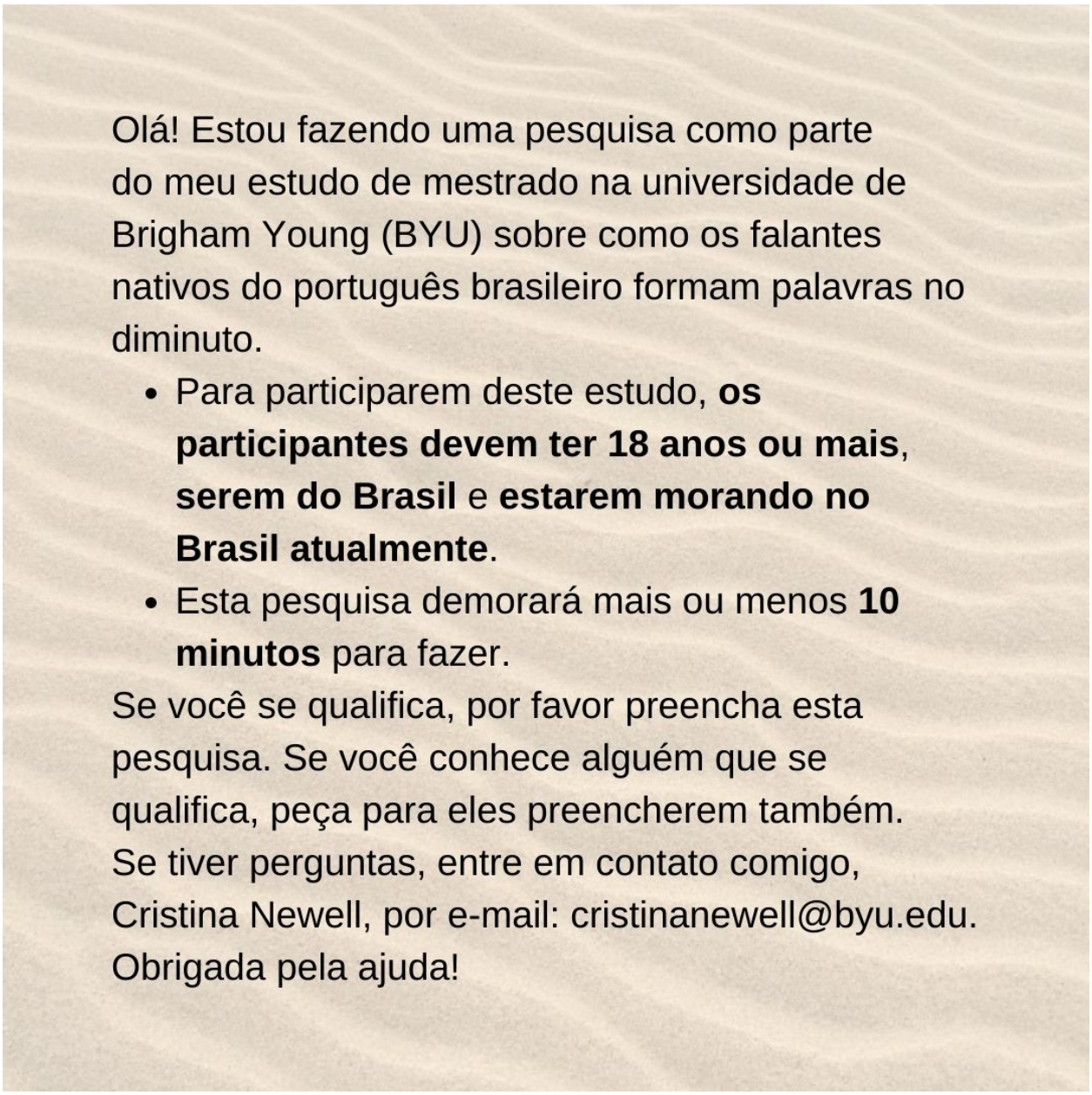

Figure B.2: This is the Portuguese version of the digital flyer used to share online to find potential survey participants.

Appendix C Qualtrics Survey

A PDF copy of the Qualtrics survey is included in the following pages.

Consentimento para fazer a pesquisa

Meu nome é Cristina Newell e sou estudante de pós-graduação na Universidade Brigham Young e estou fazendo esta pesquisa sob a supervisão do Professor Willis Fails, do Departamento de Espanhol e Português. Você está sendo convidado a participar desta pesquisa sobre a formação do diminutivo no português brasileiro. Quero aprender mais sobre como os falantes nativos do português brasileiro usam as diferentes variações da formação do diminutivo.

Sua participação deste estudo requererá a conclusão da pesquisa anexa. Isso deve levar aproximadamente 10 minutos do seu tempo. Sua participação será anônima e você não será contatado novamente no futuro. Você não será pago por participar deste estudo. Esta pesquisa envolve um risco mínimo para você. Os benefícios, no entanto, podem impactar a sociedade, ajudando a aumentar o conhecimento sobre as tendências e o uso do português.

Você não precisa fazer parte deste estudo se não quiser. Você não precisa responder a nenhuma pergunta que não queira responder. Teremos o maior prazer em responder a qualquer pergunta que você tiver sobre este estudo. Se você tiver mais perguntas sobre este projeto ou se tiver algum problema relacionado à pesquisa, entre em contato comigo, Cristina Newell, por e-mail: cristinanewell@byu.edu ou com meu orientador, Professor Willis Fails, por e-mail: willis_fails@byu.edu.

Se você tiver alguma dúvida sobre seus direitos como participante da pesquisa, entre em contato com o Administrador do IRB na A-285 ASB, Universidade Brigham Young, Provo, UT 84602; irb@byu.edu; +1-801-422-1461. O IRB é um grupo de pessoas que revisam os estudos de pesquisa para proteger os direitos e o bem-estar dos participantes da pesquisa.

A conclusão desta pesquisa implica no seu consentimento em participar. Se você optar por participar, preencha a pesquisa anexa e a devolva até 15 de janeiro de 2021. Obrigada!

Um pouco sobre você

Você mora atualmente no Brasil?

Sim Não

Você nasceu no Brasil?

Sim Não

De qual estado você é?

De qual cidade você é?

Em qual estado você mora atualmente?

Em qual cidade você mora atualmente?

Qual é o seu sexo?

Masculino Feminino Outro

Qual é o seu ano de nascimento?

Como você forma o diminutivo

Em português, é possível modificar o final de uma palavra por vários motivos, como diminuir o significado da palavra, mostrar afeto, mostrar insignificância etc. Por exemplo, a palavra bola pode se tornar bolinha, a palavra casa pode se tornar caseta ou casinha.

Como você modificaria as seguintes palavras seguindo esse padrão? Escolha a opção que faça mais sentido para você e/ou escreva outra forma na caixa outro. Pode escolher mais de uma opção se você as usaria. Caso você não conhecer a palavra, escolha a opção do diminutivo que faça mais sentido e que você usaria. Se não for possível modificar a palavra, selecione a opção outro e escreva "impossível".

Exemplo de uma pergunta possível

Palavras

melhor

melhorzito melhorinho melhorzinho outro:_____

devagar

devagarinho devagarzinho devagarito outro:_____

branco

branquinho brancozinho branquito outro:_____

bom

bominho bonzinho bonzito outro:_____

pior

piorinho piorzinho piorzito outro:_____

fácil

facinho facilzinho facilzito outro:_____

pobre

pobrinho pobrezinho pobrezito outro:_____

mau

mauinho mauzinho mauzito outro:_____

mal

malinho malzinho malzito outro:_____

Carol

Carolinha Carolzinha Carolzita outro:_____

João

Joãinho Joãozinho Joãozito outro:_____

pratanco

pratanquinho pratancozinho pratanquito outro:_____

pareti

paretinho paretizinho paretizito outro:_____

botentá

botentinho botentazinho botentazito outro:_____

dor

dorinha dorzinha dorzita outro:_____

animal

animalinho animalzinho animalzito outro:_____

amor

amorinho amorzinho amorzito outro:_____

favor

favorinho favorzinho favorzito outro:_____

rapaz

rapinho rapazinho rapazito outro:_____

nariz

narinho narizinho narizito outro:_____

lápis

lapisinho lapizinho lapisito outro:_____

brinco

brinquinho brincozinho brinquito outro:_____

boneca

bonequinha bonecazinha bonequita outro:_____

homem

homeminho homenzinho homenzito outro:_____

jardim

jardiminho jardinzinho jardinzito outro:_____

viagem

viageminha viagenzinha viagemzita outro:_____

blog

bloguinho blogzinho bloguito outro:_____

Facebook

Facebookinho Facebookzinho Facebookito outro:_____

clique

cliquinho cliquezinho cliquito outro:_____

laptop

laptopinho laptopzinho laptopito outro:_____

McDonalds

McDonaldsinho McDonaldszinho McDonaldsito outro:_____

cão

cãoinho cãozinho cãozito outro:_____

coração

coraçãoinho coraçãozinho coraçãozito outro:_____

irmão

irmãoinho irmãozinho irmãozito outro:_____

avião

aviãoinho aviãozinho aviãozito outro:_____

mãe

mãeinha mãezinha mãezita outro:_____

acadêmico

academiquinho academicozinho academicozito outro:_____

antídoto

antidotinho antidotozinho antidotozito outro:_____

negócio

negocinho negociozinho negociozito outro:_____

árvore

arvorinha arvorezinha arvorezita outro:_____

lâmpada

lampadinha lampadazinha lampadazita outro:_____

príncipe

principinho principezinho principito outro:_____

protótipo

prototipinho prototipozinho prototipozito outro:_____

lágrima

lagriminha lagrimazinha lagrimita outro:_____

dúvida

duvidinha duvidazinha duvidazita outro:_____

café

cafinho cafezinho cafezito outro:_____

bebé

bebinho bebezinho bebezito outro:_____

maçã

macinha maçãzinha maçãzita outro:_____

pé

péinho pezinho pezito outro:_____

problema

probleminha problemazinha problemita outro:_____

diferença

diferencinha diferençazinha diferençazita outro:_____

pneu

pneuinho pneuzinho pneuzito outro:_____

desconto

descontinho descontozinho descontito outro:_____

coisa

coisinha coisazinha coisita outro:_____

fatia

fatinha fatiazinha fatiazita outro:_____

novidade

novidadinha novidadezinha novidadezita outro:_____

alce

alcinho alcezinho alcezito outro:_____

raio

rainho raiozinho raiozito outro:_____

eu

euinho euzinho euzito outro:_____

obrigado

obrigadinho obrigadozinho obrigadito outro:_____

Appendix D Acronyms

Table D.1: Acronyms for each final phone or phoneme by stress

Final Phone	Description	Example
AP-a	a word with antepenultimate stress ending in [a]	*lâmpada* (light bulb)
AP-e	a word with antepenultimate stress ending in [e] or [i]	*príncipe* (prince)
AP-o	a word with antepenultimate stress ending in [o]	*antídoto* (antidote)
AP-stop*	a word with antepenultimate stress ending in a stop	*McDonalds* (McDonalds)
F-a	a word with final stress ending in [a]	*bontentá* (nonce)
F-Nasal-a	a word with final stress ending in [ã]	*maçã* (apple)
F-e	a word with final stress ending in [e] or [ɛ]	*bebê* (baby)
F-Nasal-e	a word with final stress ending in a diphthong with [ẽĩ̯]	*mãe* (mother)
F-Nasal-i	a word with final stress ending in nasalized [ĩ]	*jardim* (garden)
F-l	a word with final stress ending in /L/	*animal* (animal)
F-Nasal-o	a word with final stress ending in a diphthong with [õ]	*avião* (airplane)
F-r	a word with final stress ending in /R/	*amor* (love)
F-stop*	a word with final stress ending in a stop	*blog* (blog)
F-u	a word with final stress ending in a diphthong with [u]	*pneu* (tire)
F-z	a word with final stress ending in /S/	*rapaz* (young man)
Pen-a	a word with penultimate stress ending in [a]	*boneca* (doll)
Pen-e	a word with penultimate stress ending in [e] or [i]	*alce* (moose)
Pen-Nasal-e	a word with penultimate stress ending a diphthong with [ẽ]	*homem* (man)
Pen-i	a word with penultimate stress ending in [i]	*parêti* (nonce word)
Pen-l	a word with penultimate stress ending in /L/	*fácil* (easy)
Pen-o	a word with penultimate stress ending in [o]	*branco* (white)
Pen-s	a word with penultimate stress ending in /S/	*lápis* (pencil)

Note. * is used to mark English loan words