The effects of vocal pitch and foreign accent (Chinese-accented English) for congruent and incongruent products in radio advertising.

By

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Declaration of Originality

I, Megha Dubey, do hereby declare that the work in the paper entitled "The effects of vocal pitch and foreign accent (Chinese-accented English) for congruent and incongruent products in radio advertising" has not been previously submitted for a degree, nor has it been submitted as a part of requirement for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and contain no materials previously published or written by another person. Any help or assistance that I have received in my research work, including the preparation of the thesis have been appropriately acknowledged.

The research presented in this thesis was approved by the Macquarie University Ethics Review Committee, as detailed below:

RE: 'The Effects of Voice Pitch and Chinese-Accented English for Congruent and Incongruent Products in Radio Advertising' (Ref: 5201600524)

The above application was reviewed by the Faculty of Business & Economics Human Research Ethics Sub Committee. Approval of the above application is granted, effective "20/07/2016". This email constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorized to conduct this research:
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Abstract

Accents and vocal pitch are essential components of advertising because they convey certain meanings. Although there has been research done in the area, none has given attention to the combinatorial effects of vocal pitch and foreign accents. This research seeks to understand if the certain combination of pitch and accent-based congruency can improve purchase intention, attitude towards the product, authenticity, and attitude towards the advertisement. Using a 2 (low pitch, high pitch) X 3 (congruent, moderately incongruent, extremely incongruent products) between-subject experimental design, a total of 150 monolingual native Australian English consumers were exposed to a radio advertisement and their responses were gauged. The results indicated that there was a significant main effect for the accent-based congruency, that is, a Chinese-accented English speaker advertising the congruent product (Chinese restaurant) is more effective than a Chinese-accented English speaker advertising incongruent products (Indian and Australian restaurants). The results of the study also confirm the main effect for pitch although not as strong as the accent-congruency effect. This implies that a speaker with low-pitched voice leads listeners to form a more favorable and positive advertising effect than a speaker with a high-pitched voice. However, this study did not discover any significant interaction effect between accent-congruency and pitch.

TABLE OF CONTENTS

APPENDIX

OVERVIEW OF TABLES

OVERVIEW OF FIGURES

CHAPTER 1: INTRODUCTION

The objective of this chapter is to describe various voice characteristics of the speaker which affect the consumer response to radio advertising. This segment will also discuss the purpose of the current study and point out the gaps in the literature. The chapter will close with a short description about the contribution of this research and a summary outline of the following chapters.

In Australia, there are approximately 260 commercial radio broadcasting stations currently operating which account for around 8% of the total media expenditure (Musicinaustralia.org.au, 2016). Over 5 million Australians listen to their local community radio stations each week. For advertising, radio is still one of the most valuable ways for marketers to interact with customers. The market research agency Brunton (2014), showed that the purchase intentions of the audiences increased more than 40% when the products were advertised on the radio. Additionally, a study performed by Nielsen (2014) revealed that there is a 3.4% growth in brand share when consumers are exposed to a radio advertisement. This data implies that for every $1 invested in advertising, the marketers gained an average of $6 within the period of 28 days of the commercial being advertised.

Radio operates entirely without visual support which offers the listeners less time to process the advertising message. This would result in diminishing the listener's ability to transform those messages. Therefore, the voice of the speaker becomes a significant cue that is used by a listener to deduce the message (Rodero, Larrea & Vázquez 2013). Moreover, according to Levi and Pisoni (2007), the voice of the speaker in radio advertising is the key to advertising success as all the auditory information relies on it. However, the effectiveness of voice depends on several characteristics such as speaker's accent and pitch which contributes to the persuasiveness of an advertisement (Radio Advertising Bureau 2013). Apart from voice, there are also a variety of attributes, for example, congruity in the advertisement that could enhance the effect of product/brand on consumer buying behavior.

One of the most important vocal feature of a spokesperson is the “accent”. According to Cambridge Dictionary, accents can be defined as “the way in which people in a particular area, country, or social group pronounce words” (Cambridge Dictionary 2016). Accents have been found to help marketers to differentiate their products from their competitors. They influence recognition of product among consumers and also lead to positive advertisement evaluations (Morales, Scott & Yorkston 2012). Research from global marketing has shown that prestige accents may be more persuasive than local accents. For example, British English can evoke more positive attitude towards the speaker and the product than the local Singlish (Singapore English) accent for the consumers of Singapore (Lalwani, Lwin & Li 2005). However, there is also controversy evident in the literature, as some research has found that the native accent or local accent are considered as more comprehensible and generate more favorable responses than the foreign accents. For instance, Tsalikis, DeShields Jr & LaTour (1991) established that for English speaking consumers, a representative with American-accented English has an advantage over a Greek-accented English speaker regarding credibility, expertise, and sociability.

Another important aspect to consider for the efficiency of radio advertising is the congruency between the speaker's accent and the product advertised (Puzakova, Kwak & Bell 2015). Researchers have revealed that the foreign accents are assessed more positively in advertising when the product advertised is congruent with the accent. For instance, in America, a spokesperson with French accent advertising cheese will be evaluated favorably by the American listeners as it demonstrates a congruent "fit" between the product and the accent of the speaker. Lynch and Schuler (1994) proposed a match-up hypothesis in which they state that the similarities between the features and characteristics of the spokesperson in an advertisement and the attributes of the products promoted will lead to a better method of effective advertising which can thereby result in a better evaluation. Therefore, this congruent “fit” suggests that the speaker’s vocal attributes have the power to evoke some stereotypes association which will transfer towards the promoted product and would affect consumers’ attitudes towards the product and ultimately their purchase intention.

In addition to accent and congruency, the other important feature of a spokesperson in radio is the vocal pitch. According to Ladefoged (2001), the voice of a person depends on numerous factors related to its auditory as well as acoustic properties. Pitch is the auditory property of the sound that allows the listener to classify sounds on a tonal scale that range from low to high. It is measured in Hertz (Hz), which is a unit of frequency. Frequency is an acoustic property and determined by the number of waves that pass per second. Pitch is determined by the rate at which the vocal folds vibrate, known as the fundamental frequency.

Research conducted by Chattopadhyay et al. (2002) has shown that a low-pitched male voice in advertising is viewed as more credible, engaging, and attractive to both males and females listeners than a high-pitched voice. They conducted an experiment with voice pitch and speech rate which showed that at a high syllable speed, the low pitch voice exhibits more favorable cognitive responses and positive attitudes towards the advertisement than the high pitch voice. While on the other side, high-pitched voices have the tendency to be associated with incompetence, deception, and lead to ineffective advertisements (Bond et al. 1987). Moreover, Brown, Strong and Rencher (1974) posit that a high-pitched male voice has an adverse impact on consumer perception. They are likely to be seen as unintelligent, unsophisticated, rude and unfriendly by the both male and female listeners.

Previous research in advertising, consumer research, and psychology has explored foreign accents (Lev-Ari & Keysar 2010; Mai & Hoffmann 2014), accent-based congruency (Hendriks, van Meurs & van der Meij 2015) and vocal pitch (Gélinas-Chebat, Chebat & Vaninsky 1996; Rodero 2015). As will be discussed further in Chapter 2, only Martín-Santana et al. (2015) have analyzed the different elements of voice under one study. However, the authors did not analyze the effect of foreign accent in their study. Instead, they studied regional accents of the one language. Hence, the objective of the current research is to understand the impact of vocal pitch and foreign accent on consumer attitude to congruent and incongruent products in radio advertising.

Additionally, this thesis will also investigate the attitude of monolingual, native English speaking Australian listeners towards a spokesperson who speaks English with a Chinese accent. While a substantial body of work has been done on attitudes towards different accents such as German (Hendriks, van Meurs & van der Meij 2015), French (Hosoda & Stone-Romero 2010) and Spanish (Tsalikis, Ortiz-Buonafina & LaTour 1992), no one has observed the Australian attitude towards Chinese-accented English. Thus, this study aims to explore this gap in the accent literature and will explore the effects of Chinese-accented English in radio advertisement efficiency and scrutinize how Australian English listeners evaluate radio commercials for products that are congruent or incongruent with the accent.

1.1-Contribution of the current study

This present study makes a contribution to the literature in two different ways: primarily, it is the first attempt to empirically evaluate the combinatorial effects of vocal pitch and foreign accents on consumer responses to radio commercials. And secondly, it examines the attitude of monolingual native English speaking Australian listeners towards a Chinese-accented speaker for congruent and incongruent products.

1.2-Outline of following chapters

The remainder of this study is structured in four chapters. Chapter Two, the literature review will address the existing literature on accents, congruency, and vocal pitch in order to develop a theoretical framework for this study. Next, Chapter Three will outline the methodology used in this study including the material, data, research methods and procedure. The fourth chapter, will present the results of the data analysis. The final chapter, Chapter Five will provide a discussion of the study's key findings, followed by limitations and recommendations for future research.

CHAPTER 2: LITERATURE REVIEW

This research is an attempt to investigate the effects of vocal pitch and foreign accent for congruent and non-congruent products in radio advertising. Given the limited attention on the combinatorial effects of vocal pitch and foreign accents, this research seeks to understand if certain combinations of pitch and congruency of accents can improve purchase intention, authenticity, attitude towards the advertisement and attitude towards the product in a radio advertising.

The literature review is structured into four sections. Firstly, prior studies that have been conducted within the areas of the foreign accent are discussed. Secondly, discussion on the role of congruence in relation to accent is provided. Next, an overview of the theoretical foundation underpinning vocal pitch with regards to consumer approach is analyzed. Taken together, different hypotheses are outlined to deliver the research objectives of this study.

THEORETICAL FOUNDATION

The theoretical foundation of the present research has been developed under one of the dominant theory of persuasion, that is, elaboration likelihood model (Petty & Cacioppo 1986). This theory claims that there are two paths to persuasion. When the people are motivated and able to think about the content of the message, the central persuasive route is likely to occur. But, when the consumer is unable or not motivated to listen to the message then the consumer will look for a peripheral cue. This is called the peripheral route of persuasion. Most radio advertisements are straightforward statements that are not likely to arouse any systematic intensive processing on the part of the listener. In fact, radio programs are tended to be used as background 'noise'. This implies in order to get the message across, all the appropriate heuristic cues should be used in the ad. Such cues act as short cut so that it instantly activates the desired association. This not only makes processing easier for listeners, but with the right cues, it can also enhance persuasiveness. Two cues investigated in this study are vocal pitch and accent of the announcer. Although these two streams of research have been investigated separately in the past, their effects have never been jointly investigated.

2.1 ACCENT

Researchers from the marketing literature have found that the accents not only have impact on the consumer buying behavior but they also reflect social structure, that is, ethnic group and social class (Foon 1986). Foon (1986) found that people assess accent as a cue to class and ethnicity while rating a spokesperson with either a native or foreign accent. This line of research is based on the study done by Edwards (1982), in which he shows that the people of English-speaking countries like the United States (US) classified the non-native accented speaker on a higher scale of sincerity, reliability, friendliness and warmth than the standard American English speakers. However, the speakers of a standard accent were evaluated favorably on the qualities of proficiency and prestige. Therefore, Edwards (1990) characterizes accent as a considerable part in the identification of a spokesperson in the social context and transmits a significant amount of social knowledge.

More frequently, marketers use accents, which range from foreign to standard accents in advertising. Standard accents represent a social class of a speaker which is not restricted to an area or region (Morales, Scott & Yorkston 2012). In a study with Southern American English (SAE) listeners, Morales, Scott and Yorkston (2012) examined the effect of a non-familiar standard accent, British Received Pronunciation (BRP) and the familiar non-standard SAE accent, on the preference towards the message and ability to remember the message. The result demonstrates that the SAE in comparison with BRP is regarded as less advanced to SAE listeners. Whereas, the BRP accent was viewed as more productive and generated more positive influence on the listeners. Yet, while being favorable to the audiences, the BRP accent demands more prominent consideration and cognitive resources from the consumer to understand and process the advertising message clearly. This thus prompts a negative effect on the memory and leads to lower brand recall.

Moreover, in a recent study, Reinares-Lara et al.,(2016) analyses the influence of a spokesperson's accent on his/her credibility and its dimensions (attractiveness, expertise, and trustworthiness). The result shows that for the local speakers of Canarian accent considered standard accent as more correct and generates more credibility towards the speaker than the local accent. Also, the standard accented spokesperson receives higher evaluation effects in terms of expertise and trustworthiness.

Furthermore, with the growing development and increased use of foreign accents in business communication, Mai and Hoffmann (2014) explain the significance of accents on three business relevant levels. First, the accent can influence attitude and purchase behavior of the consumers; second, a speaker's attributes, including social engaging quality, competency and integrity and third, an accent can have an impact on the understanding of a company's information. These reasons influence marketers to use foreign accents in their advertising communication. For instance, Leclerc, Schmitt and Dubé (1994), illustrate that for US audiences, an advertisement for a brand name in the French accent was much more effective as it generates a higher level of trust than an English accent advertising the same brand for the products that conveys the social picture of France. This means that accent has the power to influence customers to evaluate or perceive the product differently.

In addition to this, accents also affect a listener's impression of the speaker. Research conducted by Heaton and Nygaard (2011), where the participants from all the different regions of America listened to two passages read by both a standard American English-accented speaker and a Southern American-accented speaker, resulted in the favor of the standard American-accented speaker. The participants rated the Southern American-accented speaker as lower in status and more familiar.

DeShields and Kara (2011) examined the influence of a Mexican-Spanish accented speaker and an American-Spanish accented speaker on Mexican students in two cities of Mexico (border versus inland cities). Their study demonstrates that a representative with an American-Spanish accent will lead to the listener to form a more positive effect on buying intention than the representative speaking with a Mexican-Spanish accent in border cities. Similarly, to what was claimed in the aforementioned studies, Giles et al. (1995) claim the same on account of

Standard-American English accented speakers who are assessed more positively by the west coast American listeners than the Spanish American English-accented speaker on the quality of superiority. Most of the studies in the literature have focused primarily on U.S. listeners, and found that accents are not treated equally (Wang et al. 2013). For instance, for U.S consumers, the speaker who has a Spanish accent or speaks in a British accent will be identified as attractive and all around connected with Americans (Cargile 2000). Yet, according to DeShields and De los Santos (2000), representatives with Greek- or Mexican- accents have been perceived as much less intelligent, dishonest, questionable and unprofessional. Indeed, even in employment-related decisions, candidates with Japanese-accents have been evaluated negatively when applying for a customer service representative role which needs high verbal exchange skills. The French accented applicants had been seen as more favorable to the recruiters regardless of the fact that the Japanese accent was much more comprehensible than the French accent (Hosoda, Megumi & Stone-Romero 2010). Therefore, this infers that foreign accents may also propagate negative connection between the accented spokesperson and the listener.

Numerous studies have found that the foreign accents of English are considered less understandable and generate more negative attitudes than the native accents. Tsalikis, Ortiz-Buonafina and LaTour (1992), discovered that a businessman with a standard Guatemala-Spanish accent was evaluated more favorably by Guatemalan listeners than a businessman with foreign-accented Spanish. This study pinpoints the importance of studying accents for business people competing in the international arena. In addition, Bresnahan et al. (2002) explains that non-native speakers tend to be considered lower in the social order, in particular when people misunderstand or do not recognize the accent of the spokesperson. Lev-Ari and Keysar (2010), have also found that some individuals perceive foreign accents to be less truthful and not credible, as they are difficult for the brain to process (Lev-Ari & Keysar 2010).

A summary of all the empirical studies of foreign accents has been given in Table 1:

Author	Communicator	Medium	Type of variety	Theoretical foundation	Method	Findings
Tsalikis, Ortiz-Buonafina and LaTour (1992).	Hypothetical sales pitch.	60-Sec audio.	Guatemalan Spanish accent, and Foreign-accented Spanish.	Atheoretical (previous empirical findings).	Experiment, survey.	Guatemala-Spanish accented businessman was evaluated more favorably by Guatemalan listeners than a businessman with foreign-accented Spanish.
DeShields and De los Santos (2000).	Hypothetical sales pitch for automobile insurance company.	55- Sec audio.	American-English accent, American-Spanish accent, Mexican-English accent and Mexican-Spanish accent.	Tajfel theory of social categorization.	Experiment, survey.	Speaker with Mexican-Spanish-English accent have been perceived as much less intelligent, dishonest, questionable and unprofessional than the American-English accented speaker.
Lindemann (2003).	Voice of an answering machine.	101- Word text.	Korean native accent and, English native accent.	Athoretical (previous empirical studies).	Experiment, survey.	the Korean-accented English speakers were evaluated negatively on the attributes of status. The participants judged them as unenergetic, illiterate, unprofessional or inexperienced.
Lalwani, Lwin and Li (2005).	Hypothetical advertisement for different products (car, camera, battery, toothpaste, etc.)		Standard English accent (British accent) and Singaporean English accent (Singlish- Singapore English)	ELM*	Experiment, survey.	The British accented speaker with foreign products lead to more optimum advertising effectiveness than the Singlish-accented speaker.
Hosoda, Stone-Romero and Walter (2007)	Audio recording of speaker's favorite things to do, experience related to first job.	60-Sec recording.	Standard-American English accent, Asian accents.	Atheoretical (previous empirical findings).	Experiment, survey.	Asian-accented English speakers were evaluated as less potent, and evoked negative affect on the American listeners than the Standard-American English accent.

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Dietz, Hosoda and Stone-Romero (2010).	Recorded interview.	2-minutes recording.	Standard-American English accent, French accent, Japanese accent.	Atheoretical (previous empirical findings).	Experiment, survey.	French accent applicants have been seen as or more favorable than the Japanese and standard American-English accent regardless of the fact that the Japanese accent was much more comprehensible than the French accent.
DeShields and Kara (2011).	Sales pitch for automobile insurance.	55-Sec audio as well as video ad.	American-English-Spanish-accent Mexican-Spanish-accent.	Tajfel social categorization, social identity, and social comparison theory.	Experiment, survey.	A speaker having an ASA have leeway over a speaker having a MSA in border cities but not in the other city as the border cities have a more level of vulnerability to the U.S. society.
Heaton and Nygaard (2011).	Audio passages.	220-230 words.	Standard-American accent, Southern-American accent.	Atheoretical (previous empirical findings).	Experiment, survey.	Both standard US-accented and southern-accented listeners resulted in the favor of the standard US-accented speaker. The participants rated the southern-accented speaker as lower status and more familiar.
Morales, Scott and Yorkston (2012).	Advertising spokesperson for hotel.	45-Sec radio ad.	British Received Pronunciation (BRP) Southern American English (SAE).	Atheoretical (previous empirical findings).	Experiment, survey.	BRP is viewed as much productive and generate positive influence on the listeners than the SAE.

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Wang et al. (2013).	Recorded phone conversation.		Standard American-accented English, and Indian-accented English.	Atheoretical (previous empirical findings).	Experiment, survey.	The results indicate that speakers with Indian-accented English were evaluated negatively by the U.S consumers when the service outcome is not favorable to the them.
Hendriks, van Meurs and van der Meij (2015).	Radio commercial for products beer, olive oil, sausage, and wine.	26-Sec advertisement.	Dutch accent, French accent, and German accent.	Atheoretical (previous empirical findings).	Experiment, survey.	The findings revealed that the foreign accent that fits with the product attributes were assessed favorably than the foreign accents with incongruent products.
Timming (2016).	7-Sec audio clip. Telephone job interview.		American-, Chinese-, Indian-, Mexican-accented, and British English.	Atheoretical (previous empirical findings).	Experiment, survey.	The study found that the Indian-, Mexican-, and the Chinese- accented individuals are judged with prejudice by the employers in the customer-facing jobs. They believe these people are suitable for behind-the-scenes or non-customers facing jobs.

Table.1 Empirical studies of foreign accents.

*****ELM – Elaboration Likelihood Model.

Even the service literature studying the relationship between accent and employability suggests that foreign accents are viewed negatively by the hiring managers. According to Finsterwalder et al. (2011), the customers recognized the foreign-accented service provider as less capable and thus, evaluate the supplier unfavorably. Instead, people will form negative stereotypes about the speaker and his country. They believe that the foreign accented people are suitable for behind-the-scenes or non-customer facing jobs. Timming (2016), conducted a study in America in which he found that the Indian-, Mexican-, and the Chinese- accented individuals are judged with prejudice by the employers in the customer-facing jobs.

Lindemann (2003), performed an experiment in which he asked native English speakers of the U.S to evaluate and identify the speech of Korean-accented English speakers. Out of the total 39 respondents, only 8% of the participants successfully identified the Korean accent soon after listening to the tapes. However, the Korean-accented English speakers were evaluated negatively on the attributes of status. The participants judged them as unenergetic, illiterate, unprofessional or inexperienced. Thus, it is very important to take into consideration how different accents are evaluated and perceived by consumers.

Previous literature in advertising and marketing has placed more emphasis on the advantages of using the foreign language in advertising. Haarmann (1989), was one of the scholars who explains the benefits and symbolic meaning of foreign languages that were used in advertising. He did lots of surveys and investigation in Japanese advertising and found that the marketers are frequently using the foreign languages like English, Spanish, French, and German knowing the fact that most of the Japanese consumers are not able to understand these languages. He explains that the marketers are doing this by establishing some symbolic meaning of the advertised product in the advertisement. For instance, France is well known for its attractiveness and elegance and advertising the products like watches, perfumes, and branded bags in the French language conveys the symbolic meaning of France to the Japanese people.

Kelly-Holmes (2005) and Hornikx, van Meurs and Hof (2013) produce additional evidence of the use of accented language in broadcasting to correlate the brand with the acknowledged perspective of the nation where the language is spoken. Kelly-Holmes (2005) found that the significance of foreign languages is not just based on the content they express or communicate with the customers, but for the ethno-cultural associations that originate from the language. For example, in the case of the Audi advertisement, the use of German evokes the company's reliability and technical expertise, which are seen as characteristics of Germany. The presumption suggests that these stereotype associations which were evoked through the accent will transfer towards the promoted product, which would affect consumer's attitudes towards the product and ultimately their purchase intention.

To summarise, a critique of studies that have analyzed the evaluative reactions to foreign accents provide some very important insights into the role of speaker’s accent in the process of effective communication. However, there is still very little information known about the circumstances under which the foreign accent is effective (Hornikx, van Meurs & Hof 2013). Consequently, there is a need to understand how consumers react to those advertisements being broadcast with foreign accents.

2.2 Congruency:

Congruence is the degree to which a brand affiliation offers content and meaning with another brand affiliation (Keller 1993). As indicated by Keller (1993), congruent brand association results in much more cohesive and less diffuse brand images. In this way, congruent associations trigger a match between the brand name and the "made in" name. This will drive the purchaser to form a pleasant impression of the brand, and, because of this, brand attitudes are assessed as more favorably. Some of the researchers have also argued that the accents can create encouraging outcomes, such as higher purchase intentions, and trust towards the product when there is a state of congruency between product attribute and particular stereotypes elicited by the accents (Morales, Scott & Yorkston 2012).

Congruence with a product is an essential element for the effectiveness of an advertisement as demonstrated by Spilski and Groeppel-Klein (2007). The authors use celebrity endorsers with a congruent media context to determine the endorser, advertisement characteristics and phasic arousal response to the advertisement. The outcomes show that when there is a congruency, the endorser is assessed as reliable and seems to have more skills than in the non-congruent media context. Moreover, it will also lead to the higher phasic arousal responses evoked by advertising commercials presented when there is a congruent media context. Another exploratory study performed by Ahmed, d'Astous and Benmiloud Petersen (2011), found that the congruency between the product and the nation will result in a satisfactory evaluation of the product. The research was conducted in Canada for Danish products that have been made in Denmark. Based on their results it can be indicated that somewhere in the consumer’s memory there is a strong association between product and country. When customers are advised that the product was made in a certain country, their associations get activated. This leads the customers to evaluate the congruent product with its country.

In addition, Lalwani, Lwin and Li (2005), have found that for advertising in Singapore, the British-English accented speaker with different foreign products such as car, insurance, and camera lead to more optimum advertising effectiveness than the Singlish-accented speaker

(Singapore English accent) through a match-up effect i.e. they construct a match between a foreign product and British English-accented spokesperson. This matchup effect led consumers to conclude that the foreign products are superior to the local brands. Also, Hendriks, van Meurs and van der Meij (2015), produce additional evidence that the advertisers often use different accents with congruent products in both radio and TV ads. The study examined the effects of foreign accents in Dutch radio commercials for congruent products (French with wine, Germany with sausage) and non-congruent products (French with beer, Germany with olive oil). The findings reveal that the foreign accent that fits with the product attributes were assessed more favorably than the foreign accents with non-congruent products i.e. when there is no fit between the product and accent spoken.

2.3 Vocal pitch

The vocal pitch is an essential feature of voice to communicate the meaning of a message to the listeners in advertising (Martín-Santana et al. 2015). According to Zemlin (1998), the sound of the voice is produced when the air passes through the larynx (the hollow muscular organ also called voice box). This motion of air causes vocal folds to vibrate and then depending on the length and thickness as well as the amount of tension originating in the vocal folds, sound waves are produced with high or low pitch. People with large larynxes and long vocal folds phonate at a lower pitch than do people with smaller larynxes and shorter vocal folds. In males, it is found that the average pitch is about 130 Hz and in females, the average pitch is 220 Hz (Zemlin 1998).

Imhof (2010) demonstrated that lowering the pitch of the voice will lead an individual to be perceived as an introvert, emotionally strong and conscientious. Whereas the speaker who has higher vocal pitch is viewed as an extrovert with a weaker emotional stability and conscientiousness. In addition to emotional stability, pitch has been known to be associated with credibility. A low vocal pitch is viewed as trustworthy, reliable and credible. This means lowering the pitch will result in a much better understanding of the spokesperson regarding his knowledge, intelligence, skills and competence (Tigue et al. 2012). Tigue and his colleagues

demonstrated this by conducting two studies in which they examined the low (mean pitch= 97.06±15.99 Hz) and high (mean pitch=135.22±18.27 Hz) vocal pitch of different male politicians and its effect on listeners and their voting behavior. In each study, most of the listeners chose to vote for the politician with a lower pitch considerably more frequently. Moreover, the authors also point out that the low pitch voice tends to be more dominant and is more related with the physical prowess of the spokesperson than the high pitch voice.

With regards to the listeners, radio employers and educators also accept the fact that in order to be a successful radio performer, the speaker should have a deep low pitch voice which makes it natural and easy to the ear for the listeners (Warhurst, McCabe & Madill 2013). Warhurst, McCabe and Madill (2013) determined the attributes of successful radio performers as perceived by Australian radio employers. The pitch is not only connected with the perception of listener towards the speaker, but it also impacts the speaker themselves. Low vocal pitch emits an immense sense of control within the speaker and also influences their feelings and thoughts. A study by Stel et al. (2012) revealed that the spokesperson with low vocal pitch will feel more powerful and think more abstractly as compared to the speaker, who raises their pitch. The research question tested in the study included whether there is any relationship between the low pitch and high power. Results indicated that changing the vocal pitch from high to low will lead an individual to comprehend and anticipate like an influential person who has the ability to persuade other people and can do the job easily if positioned in a high-power role.

The summary of all the empirical studies of vocal pitch has been given in Table.2:

Author	Medium	Type of variety	Theoretical foundation	Method	Findings
Brown, Strong and Rencher (1974)	Audio tapes speaking passages.	Speech rate, vocal pitch	Atheoretical (previous empirical findings).	Experiment, survey.	High-pitched male voice has an adverse impact on consumer perception. They are likely to be seen as unintelligent, unsophisticated, rude and unfriendly.
Bond et al. (1987)	1 – minute speech segment	Vocal frequency, non-verbal sensitivity and perceptual salience.	Atheoretical (previous empirical findings).	Experiment.	Supported the findings of Apple, Streeter and Krauss (1979). High-pitched voice is viewed as less truthful, less persuasive, and less competent than the low-pitch voice.
Gelinas-Chebat and Chebat (1992)	Voice message for student loan and ATM card.	Voice intonation, voice intensity.	ELM*	Experiment, survey.	Peripheral cues prove to be effective and maintain the consumer attention when the listener is not interested in the message.
Dabbs and Mallinger (1999)	Voice recording of numbers 1-to 10 and vowels	Vocal pitch	Atheoretical (previous empirical findings).	Experimental technique called CEPSTRUM	They conducted research in which they measured salivary testosterone levels and voice pitch and discovered that the lower pitch tends to associate with higher testosterone levels. They find out that there can be two factors by which testosterone may possibly influence voice pitch, i.e. physiological (length and tension of the vocal folds) and psychological (vocal style).
Collins and Missing (2003)	3 audio tapes speaking vowels	Visual features Visual features (body characteristics) and vocal features (vocal pitch)	Atheoretical (previous empirical findings).	Experiment.	The high-pitched women tend to generate more favorable responses and perceived as more attractive than the low-pitched women.

(Continued)

Puts, Gaulin and Verdolini (2006)	Voice recording of a passage.	Physical and social dominance and vocal pitch.	Atheoritical (previous empirical findings).	Experiment, Survey.	The study examined the relationship between male voices and physical dominance. It was found that the low-pitched male voices are perceived as sexually attractive and physically dominated
Imhof (2010)	Text speech.	Level of pitch, sex of the speaker, content area, and personal judgments.	Atheoritical (previous empirical findings).	Experiment, survey.	The study demonstrated that lowering the voice pitch will lead an individual to be perceived as introvert, emotionally stronger and conscientiousness. Whereas the speaker who has higher vocal pitch is viewed as an extrovert with a weaker emotional stability and conscientiousness.
Tigue et al. (2012)	Online voice recording from an online archive of a library and voice recording of a text speech.	Vocal pitch.	Atheoritical (previous empirical findings).	Experiment, survey.	A low vocal pitch is viewed as trustworthy, reliable and credible. This means lowering the pitch will result in a much better understanding of the spokesperson regarding his knowledge, intelligence, skills and competence. Moreover, they also point out that the low pitch voice tends to be more dominant and is related with the physical prowess of the spokesperson than the high pitch voice.
Stel et al. (2012)	Text reads	Voice pitch	Atheoretical (previous empirical findings) and theory of embodied cognition.	Experiment	Changing the vocal pitch from high to low will lead an individual to comprehend and anticipate like an influential person who have the ability to persuade other people and can do the job easily if positioned in a high power role, i.e. the spokesperson with low voice pitch will feel more powerful and thinks abstractly as compared to the speaker, who raises their pitch.

(Continued)

Klofstad, Anderson and Peters (2012)	Audio recording of speaking one sentence.	Voice pitch, age and, electoral success.	Atheoritical (previous empirical findings).	Experiment, Survey.	The study argues that lower pitch voices in both men and women will lead them to have the desirable leadership qualities. These qualities, in turn, made them stronger, trustworthy and more competent than the individuals who raise their pitch in leadership roles.
Warhurst, McCabe and Madill (2013)	30- to 40-minute semi-structured interview.	Content and personality, voices that deliver certain Content and personality, voices that deliver certain elements, voices that suits the actual station, easy to listen to, conversation with the listener, the ability to read, multiscale.	Atheoritical (previous empirical findings).	Interview.	The study determines the attributes of a successful radio performer as perceived by Australian radio employer. The findings revealed that in order to be a successful radio performer, the speaker should have a deeper and low pitch voice which makes it natural and easy to the ear for the listeners.
Martín-Santana et al. (2015)	Voice recording for blood donation.	Accent, vocal pitch, gender and background music	Atheoretical (previous empirical findings) and theory of embodied	Experiment, survey.	The lower pitch of a spokesperson in a radio advertisement results in a greater attitude regarding reliability, trust, professionalism and far better effective advertisement than the advertisement with a high pitched spokesperson.

Table.2 Empirical studies of Vocal Pitch.

ELM* - Elaboration Likelihood Model

A lot of the research in vocal pitch has explored the attractiveness factors related to male and female voices. Puts, Gaulin and Verdolini (2006) found that the listener can form different judgments about the speaker in context to their sex. For instance, for male speakers, the low-pitch voices are observed as sexually appealing and physically dominant (Fraccaro et al. 2013). While high-pitched women tend to generate more favorable responses and be perceived as more fascinating than the low-pitch women (Collins & Missing 2003). In contrast to the above examples, Klofstad, Anderson and Nowicki (2015) argue that lower pitch voices in both men (ranging from 81 to 98 Hz) and women (ranging from 170 to 190 Hz) will lead them to have desirable leadership qualities. These qualities, in turn, made them stronger, more trustworthy and more competent than the individuals who raise their pitch in leadership roles.

Additionally, Dabbs and Mallinger (1999) conducted research in which they measured salivary testosterone levels and voice pitch and discovered that lower pitch tends to associate with the higher testosterone levels. They discovered that there can be two factors by which testosterone may possibly influence voice pitch. The first is physiological, in which testosterone alters the bulk, length or tension of the vocal folds. The second is psychological, in which testosterone impacts the vocal style that a speaker employs in a social context. In this research, it was found that the mean pitch for males was 99 Hz and 181 Hz for females.

From a marketing perspective, the literature has emphasized the importance of using a low pitch voice in advertising. Rodero, Larrea and Vázquez (2010)[1], did an experimental study which suggests that for a commercial to be effective, the speaker should have a low-pitch voice. They observed that the low pitched male voices ranging from 132 Hz to 145 Hz and low pitched female voices ranging from 154 Hz to 165 Hz, create a higher sense of credibility towards the speaker regardless of their gender. In a study of telemarketing, Gélinas-Chebat, Chebat and Boivin (1999), found that for a spokesperson to be a successful telemarketer, he/she should have a low pitch voice. These assumptions are based on the Elaboration Likelihood Model (ELM) (Petty & Cacioppo 1986), which states that if a listener is not able to motivate towards the advertisement nor process the message of the advertisement clearly, they will rely on peripheral

[1] Translated into English using Google Translate (https://translate.google.com.au/, 2016).

cues. Such cues include vocal pitch which enables a listener to change their attitude and behavior towards an advertised product under low involvement situations.

Previously, Gelinas-Chebat and Chebat (1992), demonstrated that in low- involvement conditions, peripheral cues prove to be effective and maintain consumer attention when the listener is not interested in the message. Their study examined two voice characteristics, voice pitch and voice intensity (loudness) which can affect the advertising message. They used the Elaboration Likelihood Model to analyze the effect of pitch and intensity in low-involvement situations and found that low-pitch and low-intensity voices are considered more competent than high-pitch and high-intensity voices. Additionally, these voice characteristics also affect the speaker's credibility, attitude towards the product and purchase intention (Gélinas-Chebat, Chebat & Vaninsky 1996).

The most recent attempt to examine the lower pitch of a spokesperson in a radio advertisement resulted in a greater attitude regarding reliability, trust, professionalism and a far more effective advertisement than the advertisement with a high-pitched spokesperson (Martín-Santana et al.

2015). In this study, the researchers studied the different features of a spokesperson which can influence the effectiveness of a radio advertisement. To date, this research is one of the few studies in the literature which have analyzed all the different variants under one investigation, for instance, accent, vocal pitch, gender and background music, which has been studied separately by the prior researchers. The authors conducted a series of experiments in which they integrated the different variables or in their words "combined the use of male voices vs. female voices, low vocal pitch vs. high vocal pitch, local accent vs. standard accent and the use of only words vs. the use of words and background music" (Pg.156) in the study. However, they have not explored the effects of foreign accent on the perception of listeners. Instead, they have studied the effect of two regional accents of the same language. Moreover, the authors have not described the combinatory effects of vocal pitch and foreign accents in radio advertising.

Considering all the above studies, the findings regarding accent, congruency and pitch have been applied in a number of domains such as marketing, consumer behavior, advertising and communication. But the use of vocal pitch with a foreign accent for a congruent product has not

been addressed by the prior researchers. Consequently, the current study aims to fill this gap by investigating the extent to which the vocal pitch and foreign accent for congruent products vs. incongruent products leads to higher purchase intention, authenticity, attitude towards the product and attitude towards the advertisement. Additionally, the study also explores the effects of Chinese-accented English in radio advertisement efficiency and examines how Australian listeners evaluate radio commercials for products that are congruent or incongruent with the accent.

Based on the literature review, the following hypotheses are proposed:

2.4 Hypotheses

1. ***Purchase intention***:

H1a. Chinese-accented radio advertisements result in higher purchase intention for congruent products than the incongruent products.

H1b. Low-pitched radio advertisements result in higher purchase intention than the high-pitch radio advertisement.

H1c. There is a congruency and pitch interaction effect in the purchase intention for the Chinese-accented radio advertisement.

2. ***Attitude towards the product***:

H2a. Chinese-accented radio advertisements lead consumers to form a more positive attitude towards congruent products than the incongruent products.

H2b. Low-pitched radio advertisement lead consumers to form a positive attitude towards the congruent product than the high-pitch radio advertisement.

H2c. There is a congruency and pitch interaction effect in the attitude towards the product for the Chinese-accented radio advertisement.

3. ***Authenticity***:

H3a. Chinese-accented radio advertisements result in higher authenticity for congruent products than the incongruent products.

H3b. Low-pitched radio advertisements lead to higher authenticity than the high-pitch radio advertisement.

H3c. There is a congruency and pitch interaction effect in the authenticity for the Chinese-accented radio advertisement.

4. ***Attitude towards the advertisement***:

H4a. Chinese-accented radio advertisements lead listeners to form a positive attitude towards the advertisement for congruent products than the incongruent products.

H4b. Low-pitched radio advertisements lead listeners to form a positive attitude towards the advertisement than the high-pitch radio advertisement.

H4c. There is a congruency and pitch interaction effect in the attitude towards the advertisement for the Chinese-accented radio advertisement.

CHAPTER 3: Methodology

The focus of this study is to examine the effects of vocal pitch and foreign accent (Chinese-accented English) on consumer attitude for congruent and incongruent products in radio advertising. Therefore, to be able to investigate the effects, an experiment was set up to evaluate the purchase intention, attitude towards the product, authenticity and attitude towards the advertisement of a Chinese-accented speaker in a radio advertisement. The chapter first presents the design of the experiment and the participants' characteristics. It then discusses the material that is created for the experiment. The chapter further describes the procedure that was used for the analysis. Moreover, it also gives a brief description of the questionnaire, dependent variables, data preparation, and statistical treatment.

3.1 Design

The research used a 2 (low pitch, high pitch) x 3 (congruent, moderately incongruent, extremely incongruent) between-subject experimental design (Table.3) in which the participant evaluates only one commercial as they were exposed to only one product. The products featured were either congruent, moderately incongruent or extremely incongruent with the accent in the advertised commercial.

Pitch/Product ⇨ ⇩	Extremely incongruent product	Moderately incongruent product	Congruent product
Low pitch	Indian restaurant Group 1 (n=25)	Australian restaurant Group 3 (n=25)	Chinese restaurant Group 5 (n=25)
High pitch	Indian restaurant Group 2 (n=25)	Australian restaurant Group 4 (n=25)	Chinese restaurant Group 6 (n=25)

Table.3 2x3 between-subject design

Chinese-accented English speaker

There were six versions of commercials: two advertising each product, i.e. Chinese restaurant, Australian restaurant, and Indian restaurant and with the different pitch, i.e. one low pitch recording and one high pitch recording (Table.4). The participants were allocated to one of the six different groups to give responses to the selected advertisement.

Version	Commercial with Chinese-accented speaker
1	Extremely incongruent product (Indian restaurant), low pitch (148 Hz)
2	Extremely incongruent product (Indian restaurant), high pitch (176 Hz)
3	Moderately incongruent product (Australian restaurant), low pitch (146 Hz)
4	Moderately incongruent product (Australian restaurant), high pitch (176 Hz)
5	Congruent product (Chinese restaurant), low pitch (142 Hz)
6	Congruent product (Chinese restaurant), high pitch (170 Hz)

Table.4: Different versions of the advertisements

3.2 Participants

A total of 150 monolingual native Australian English speaking respondents from the different suburbs of Sydney participated in the study. Participation was voluntary, and $5 was given to each participant to take part in the experiment. Participants included both men (87) and women (63) ranging in age from 18-64 years.

3.3 Material/Stimuli

An experiment was conducted to evaluate the different effects of vocal pitch and foreign accent on consumer attitude in radio advertising for congruent and incongruent products. For this

experiment, different audio recordings were created for different products. The product used in the study was the restaurant, and we used three different restaurants: Chinese, Indian, and Australian restaurants. The accent spoken was the Chinese-accented English, which was either *congruent (Chinese-restaurant), moderately incongruent (Australian restaurant)* or *extremely incongruent (Indian restaurant)* with the advertised product in the commercial. The audio script was recorded for each restaurant, and it was same for all the restaurants except the particular products mentioned. The script was as follows:

Hi! I am the chef of (Chopsticks Chinese restaurant; Masala Indian restaurant; Gumtree Australian restaurant), newly opened at the Macquarie Centre. Come and dine in comfort and enjoy the finest taste of (China; India; Australia). Choose from over 20 specially prepared, mouth-watering dishes including your favorites: (sweet and sour pork, gong bao chicken, and Peking roast duck; rogan josh, korma curries, and butter chicken; fish and chips, hamburger with beetroot, and sausage rolls). You're almost certainly spoilt for choice. It's a royal offering nowhere else to be found. The experience is truly delightful and unforgettable.

The script was not pre-tested with the consumers but the quality of the script and the recording were evaluated by the experts. The same speaker recorded each of the three recordings. The speaker is 30 years old and was born in Shanghai, China. His first language is Shanghainese, which is a dialect of the Wu language. He began learning English when he was 12 years of age and has lived in Australia for the last 10 years.

To make the recording, a USB studio condenser microphone of the brand Samson (COIU Pro) was used. The different audio clips were recorded using Audacity software, version 2.1.1. Each of the recordings were approximately 40-seconds long.

After the recordings, the next key element to consider in the experiment was the pitch. The average pitch of the speaker for each recording was analyzed using PRAAT software (Boersma 2002). The average pitch for the Chinese restaurant recording was 157 Hz; for the Indian restaurant, it was 162 Hz, and for the Australian restaurant it was 161 Hz. After that, the pitch in all the recordings was manipulated using the Audacity software which resulted in one low pitch recording and one high pitch recording. Table.5 shows the average pitch for each version of the recording.

Pitch/Product	Chinese restaurant	Australian restaurant	Indian restaurant
Low	142 Hz	146 Hz	148 Hz
High	170 Hz	176 Hz	176 Hz

Table.5: Average pitch for each version of the recording

As Table.5 shows, for each product the low and high pitch is slightly different. The reason to choose the above pitch levels in the recording was to create a natural voice quality for the listeners. It can also be seen that both the low and high pitch versions of the Chinese commercial are lower than the Australian and Indian ones. However, this difference was not obviously perceptible to the candidate or her supervisors.

3.4 Procedure

At the start of the experiment, the researcher first approached potential participants who looked like Caucasian Australians. She introduced herself and asked the person if he/she would be interesting in participating in an experiment for a master's thesis on radio advertisements. If they said yes, then the person was asked questions like where they were born and how many languages they speak or understand in general. After questioning, the potential participants who were Caucasian Australian were born in Australia and spoke only Australian English were selected.

Participants were randomly assigned to hear one of six commercials. They were then asked to listen to an audio recording of the commercial with the help of headphones and give their opinion about the commercial. The participants were not informed regarding the real purpose of the research to conduct the experiment. Instead, they were told that the purpose of the study was to investigate how Australian English listeners evaluate radio commercials. The deception was required in the procedure so that the attitude and behavior of the listeners would not be influenced by any of the factors like accent, pitch or product. But once their participation was completed, the participants were debriefed with the actual reason for the study and told that

they were free to withdraw their consent from the experiment without giving a reason and without any consequence.

The whole process took around 10 minutes of time. After the experiment, they were thanked for their participation and told that their identities would remain anonymous. As the study was conducted in different supermarkets, parks and coffee shops, noise canceling SONY headphones (model-MDR-ZX110NC) were used. These headphones helped participants to listen to the advertisement clearly.

3.5 Questionnaire

After listening to the audio clip, the participants were asked to complete an online version of the questionnaire using the online survey software Qualtrics (see Appendix A) on the researcher's iPad. All the variables in the study, i.e. purchase intention, authenticity, attitude towards the product and attitude towards the advertisement were measured using a 7-point rating scale.

3.6 Dependent variables

Purchase intention. Purchase intention was determined by considering how likely the participants would visit the advertised restaurant. The statement includes: "After listening to the radio ad, how likely would you be to visit this restaurant". Participants were asked to express their opinion on each of the items on a seven-point rating scale. The higher the score, the more willingness to visit the restaurant.

Authenticity. A single-item measure was used to assess the authenticity of the product in the advertisement. It consisted of the statement: "How authentic do you think the flavor of the food in this restaurant would be". The response alternatives for the items varied from 1=not at all authentic to 7= extremely authentic. The higher the value, the greater is the authenticity of the product.

Attitude towards the product. A single item was used to evaluate the participant's attitude towards the advertised product. The statement includes: "how good or bad do you think this

restaurant would be". To measure this variable, a seven-point rating scale (extremely bad-extremely good) was used. The higher the score, more positive attitude towards the product.

Attitude towards the advertisement. One item was used to analyze the participant's attitude towards the advertisement. It consisted of the statement: "How much do you like or dislike this radio advertisement". This variable measured the like and dislike towards the radio advertisement on a seven-point rating scale. The more the advertisement was liked, the more positive attitude was held towards the advertisement.

3.7 Data preparation

After the questionnaire had been completed, the outcomes were entered into an Excel sheet and organized for practicability. There were no missing values as all the questions were forced-choice. The data was then loaded on IBM SPSS version 22, where the variables were renamed and recoded.

3.8 Statistical treatment

To analyze the results, MANOVA, ANCOVA, and multiple regression were conducted to examine the difference in means and interactions between the six different experimental groups.

CHAPTER 4: RESULTS

This section introduces the results based on the method of analysis discussed in chapter 3. This chapter is divided into four parts. The first part gives an overview of the Hypotheses that were discussed in Chapter2. In the second part, the results for manipulation checks were discussed. The third part presents the results of the analysis that has examined the effect of dependent variables (purchase intention, attitude towards the product, authenticity, and attitude towards the advertisement) on congruency, vocal pitch, and their interaction. And the last part shows the results of regression analysis that was conducted to pinpoint what other independent variables influence purchase intentions.

4.1. Overview of Hypotheses

Table.6 describes an overview of all the hypotheses that have been analyzed in the results:

Hypotheses Table
H1a. Chinese-accented radio advertisement results in higher purchase intention for congruent products than the incongruent products. H1b. Low-pitched radio advertisements result in higher purchase intention than the high-pitch radio advertisement. H1c. There is a congruency and pitch interaction effect in the purchase intention for the Chinese-accented radio advertisement.

H2a. Chinese-accented radio advertisement lead consumers to form a more positive attitude towards congruent products than the incongruent products. H2b. Low-pitched radio advertisements lead consumers to form a positive attitude towards the congruent product than the high-pitch radio advertisement. H2c. There is a congruency and pitch interaction effect in the attitude towards the product for the Chinese-accented radio advertisement.
H3a. Chinese-accented radio advertisements result in higher authenticity for congruent products than the incongruent products. H3b. Low-pitched radio advertisements lead to higher authenticity than the high-pitch radio advertisement. H3c. There is a congruency and pitch interaction effect in the authenticity for the Chinese-accented radio advertisement.
H4a. Chinese- accented radio advertisements lead listeners to form a positive attitude towards the advertisement for congruent products than the incongruent products. H4b. Low-pitched radio advertisements lead listeners to form a positive attitude towards the advertisement than the high-pitch radio advertisement. H4c. There is a congruency and pitch interaction effect in the attitude towards the advertisement for the Chinese-accented radio advertisement.

Table.6 Overview of Hypotheses

4.2. Manipulation checks

Before proceeding to the principal analysis, the manipulation check was conducted to ensure the validity and reliability of the results. Here, the two factors, i.e. *pitch* and *congruency* has been examined.

4.2.1 Pitch: Participants were asked to classify the pitch of the speaker as either *low* or *high*. This manipulation check was included to show if the participant categorised the speaker's pitch

the way it was categorised in the study Table.7 demonstrates the pitch categories given by all the 150 participants for different advertisements.

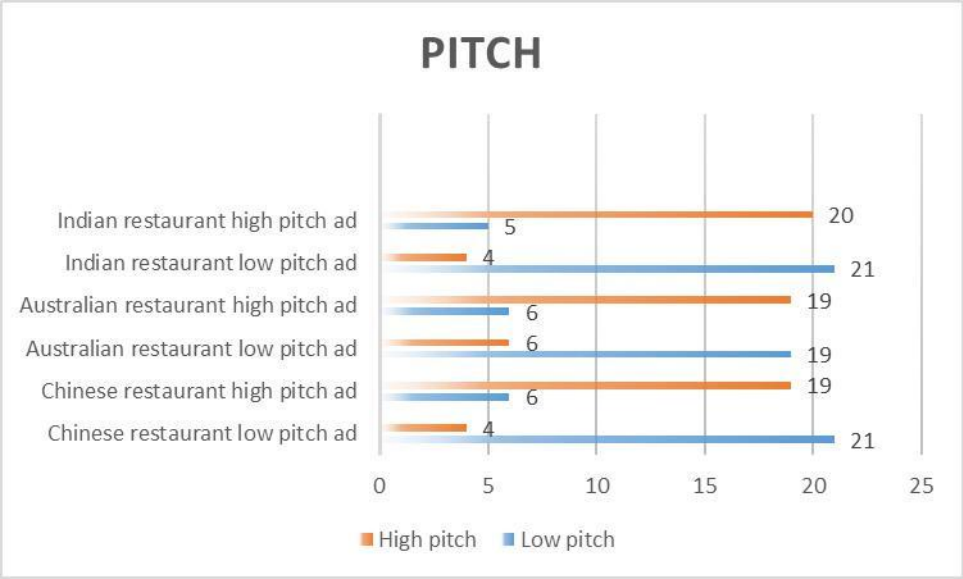

Table.7: Pitch category of the speaker given by the participants

Table.7 shows that some of the participants did not categorise the pitch of the speaker in the same way as it was categorised in the study. This resulted in the elimination of 31 participants (i.e. 5 from high pitched Indian restaurant, 4 from low pitched Indian restaurant, 6 from high pitched Australian restaurant, 6 from low pitched Australian restaurant, 6 from high pitched Chinese restaurant, and 4 from low pitched Chinese restaurant) from the whole data. Therefore, the total number reduced to 119 and was redistributed into the SPSS file. Table.8 displays the final sample sizes of every cell:

	Indian restaurant	*Australian restaurant*	*Chinese restaurant*
Low pitch	*21*	*19*	*21*
High pitch	*20*	*19*	*19*

Table.8: Final sample size of each cell.

4.2.2 Congruency: It was observed if the participants considered the accent of the speaker to fit with the advertised restaurant. The most important comparison was between a Chinese restaurant and Indian restaurant as these two define the main *congruent* and *extreme incongruent* products. Moreover, there was not much difference in means between the Indian restaurant and Australian restaurant (see Table.9)

	Extremely incongruent (Indian rest)		*Moderately incongruent (Aust. rest)*		*Congruent (Chinese rest)*	
	n=41		*n=38*		*n=40*	
	M	*SD*	*M*	*SD*	*M*	*SD*
Fits the restaurant	*1.98*	*1.91*	*1.74*	*1.42*	*4.05*	*1.08*
t-test (2-tailed)	*t=-2.07, p=.000<.05*		*Significant*			

Table.9: Independent t-test for fits the restaurant

An independent t-test was carried out which revealed that a Chinese restaurant has a significantly higher level of *fit* with the accent than the Indian restaurant, $t = -2.07$ and $p < .05$ (see Table.9). However, there was no statistical difference found between Indian and Australian restaurant $t = .23$ and $p > .05$.

The descriptive graph is shown in Figure.1:

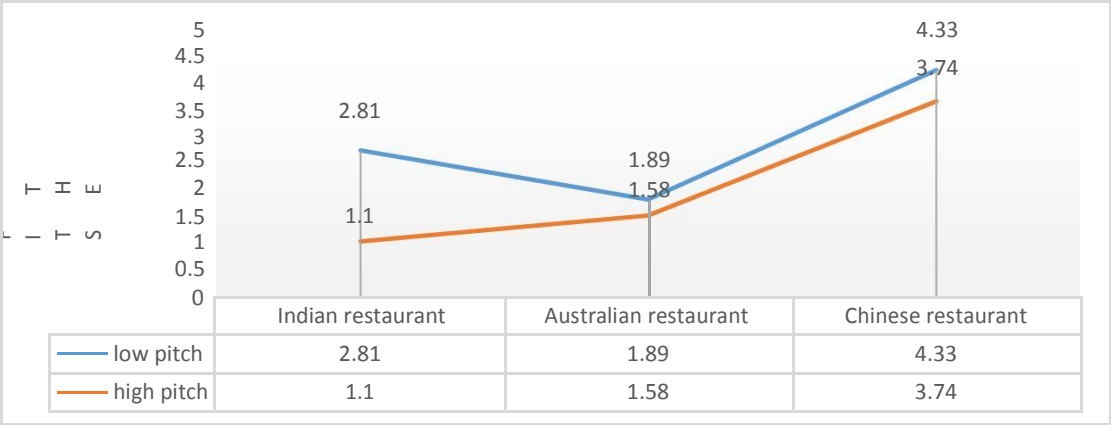

Figure.1: Descriptive statistics for fits the restaurant

4.3. Analysis

4.3.1 MANOVA

A multivariate analysis of variance (MANOVA) was first carried out with the 4 dependent variables of *purchase intention, attitude towards the product, authenticity* and *attitude towards the advertisement* and *congruency and pitch level* being the independent variables. For congruency, a statistical significant effect was found on the combined dependent variables: F (8, 222) = 8.19, p<.0125; Pillai's Trace =.46. Similarly, a significant effect was found for pitch level: F (4,106) =7.18, p<.0125; Pillai's Trace = 0.21. However, there were no significant interaction effects between congruency and pitch level.

4.3.2 ANCOVA

Since the MANOVA results are significant, an analysis of covariance (ANCOVA) was performed to examine the dependent variables, *purchase intention*, *attitude towards the product*, *authenticity* and *attitude towards the advertisement* with *congruency* and *pitch* as the fixed factors and *comprehensibility* and *preferences towards the different cuisine* (i.e. Chinese, Australian, and Indian cuisine) as the covariates. The results are described below[2]:

1. ***Purchase intention***: A univariate analysis of covariance (ANCOVA) with *purchase intention* as the dependent variable for the three hypotheses H1a, H1b and H1c was conducted. The results exhibit in Table.10:

	Extremely incongruent (Indian rest)		*Moderately incongruent (Aust. rest)*		*Congruent (Chinese rest)*	
	n=41		*n=38*		*n=40*	
	M	*SD*	*M*	*SD*	*M*	*SD*
Purchase intention	*1.98*	*1.36*	*2.39*	*1.70*	*3.93*	*1.52*
Congruency	*F (2, 109) =13.00, p=.000*		*Significant main effect*			
Pitch	*F (1, 109) =3.49, p=.064**		*Partially significant main effect*			
*Congruency*Pitch*	*F (2, 109) =1.80, p=.169*		*No significant interaction effect*			

p<0.10* ***Table.10: ANCOVA for Purchase intention*

[2]Levene's test of homogeneity was not significant for the dependent variables except for authenticity. Therefore, the results for authenticity should be interpreted with caution.

- These results produced a statistically significant congruency effect, F (2, 109) = 13. 00, p <.05. Chinese-accented speaker advertising for Chinese restaurant generates higher purchase intention than the Chinese-accented speaker advertising for the Australian or Indian restaurant. These results support H1a;

- There was a marginal effect of pitch on purchase intention, F (1, 109) = 3.49, p=.064 (i.e. p<0.10). The findings showed that overall, low-pitched radio advertisements were slightly more favorable than the high-pitched radio advertisement. These outcomes partially support H1b and,

- However, there was no significant interaction effect between the pitch and accent congruency in evaluating purchase intention, F (2, 109) = 1. 80, p>. 05, thus rejecting H1c.

The descriptive graph is shown in Figure 2.

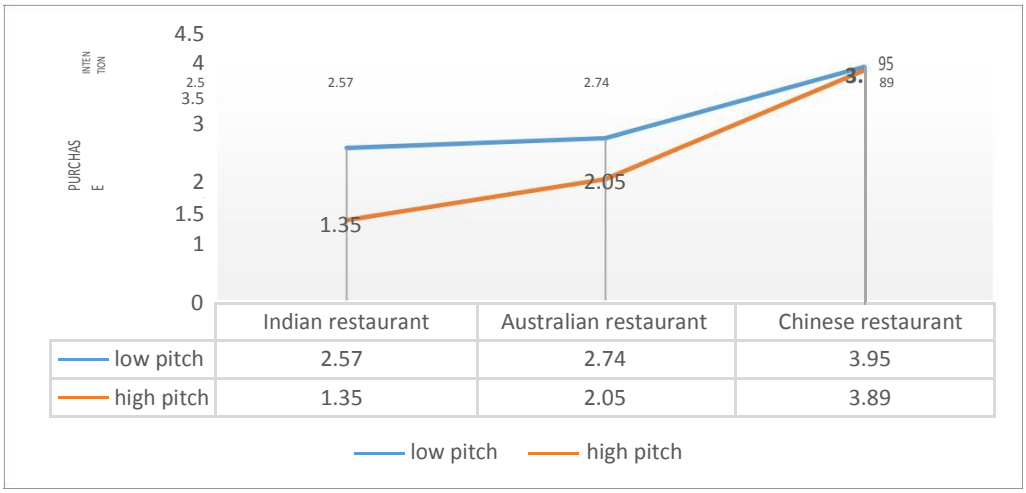

Figure.2: Descriptive statistics for purchase intention

2. ***<u>Attitude towards the product:</u>*** Again, to assess the three hypotheses H2a, H2b and H2c, a univariate analysis of covariance (ANCOVA) with an attitude towards the product as a dependent variable was performed and the results identified that:

	Extremely incongruent (Indian rest)		*Moderately incongruent (Aust. rest)*		*Congruent (Chinese rest)*	
	n=41		*n=38*		*n=40*	
	M	*SD*	*M*	*SD*	*M*	*SD*
Attitude towards the product	*-.15*	*1.25*	*.26*	*1.05*	*1.45*	*.90*
Congruency	*F (2, 109) =17.61, p=.000*		*Significant main effect*			
Pitch	*F (1, 109) =3.61, p=.060**		*Partially significant main effect*			
*Congruency*Pitch*	*F (2, 109) =1.36, p=.261*		*No significant interaction effect*			

Table.11: ANCOVA for Attitude towards the product* *p<0.10

- There was a statistically significant main effect for congruency F (2, 109) = 17.61, p < 0.05 (Table.11). Speaker advertising for the Chinese restaurant results in higher positive attitude towards the restaurant than the speaker advertising for moderately incongruent or extremely incongruent restaurants. These results support H2a.

- Additionally, there was a marginal effect of vocal pitch on participant's attitude towards the restaurant F (1, 109) = 3.61, p =.060 (i.e. p <.10). The Chinese-accented speaker with a low-pitched voice was more likely to generate a positive attitude towards the product than the high-pitched voices.

- Moreover, the results do not generate any interaction effect of congruence and pitch in the attitude towards the advertised product F (2, 109) = 1.36, p > 0.05. Thus, H2c is rejected.

The descriptive graph is shown in Figure.3.

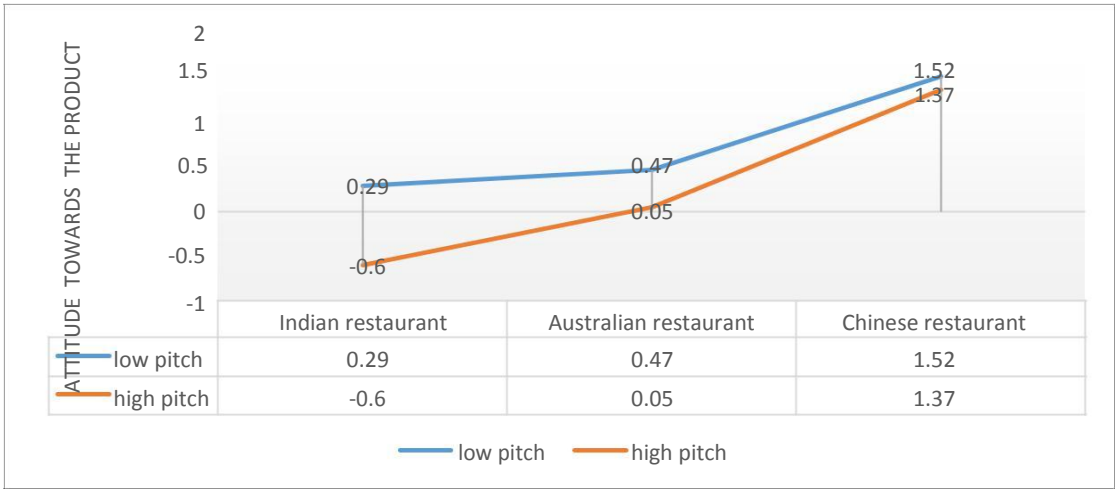

Figure.3: Descriptive statistics for attitude towards the product

3. ***<u>Authenticity:</u>*** An univariate analysis of covariance (ANCOVA) with authenticity as the dependent variable was carried out to examine the three hypotheses H3a, H3b, and H3c. Results shown in Table.12 indicate that

	Extremely incongruent (Indian rest)		*Moderately incongruent (Aust. rest)*		*Congruent (Chinese rest)*	
	n=41		*n=38*		*n=40*	
	M	*SD*	*M*	*SD*	*M*	*SD*
Authenticity	*2.00*	*1.64*	*2.29*	*1.35*	*4.10*	*1.05*
Congruency	*F (2, 109) =19.44, p=.000*		*Significant main effect*			
Pitch	*F (1, 109) =2.71, p=.102*		*No significant main effect*			
*Congruency*Pitch*	*F (2, 109) =3.84, p=.024*		*Significant interaction effect*			

Table.12: ANCOVA for Authenticity

- The effect of congruency was significant as it confirms that a Chinese-accented speaker advertising a Chinese restaurant generates higher authenticity for the food, $F(2, 109) = 19.44$, $p < 0.05$, than a Chinese-accented speaker advertising an Australian restaurant and Indian restaurant, thus supporting H3a.

- The pitch of the speaker does not generate any authenticity towards the food which implies that H3b was not supported, $F(1, 109) = 2.71$, $p > .05$.

- But surprisingly, there was an interaction effect between the congruency and vocal pitch on authenticity in radio advertisement $F(2, 109) = 3.84$, $p < 0.05$ which shows support for H3c.

The descriptive graph is shown in Figure.4.

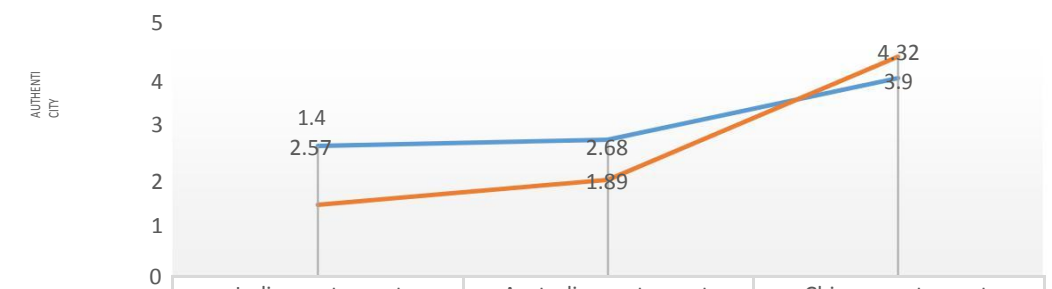

Figure.4: Descriptive statistics for authenticity

4. ***<u>Attitude towards the advertisement:</u>*** An univariate of analysis of covariance (ANCOVA) on the effects of attitude towards the advertisement for the three hypotheses H4a, H4b, and H4c revealed that:

- The Chinese-accented speaker advertising a Chinese restaurant leads the listeners to form a more favorable attitude towards the advertisement than the speaker advertising for an Australian and Indian restaurant, $F(2,109) = 10.70$, $p < 0.05$ (Table.13). These results support H4a.

	Extremely incongruent (Indian rest)		*Moderately incongruent (Aust. rest)*		*Congruent (Chinese rest)*	
	n=41		*n=38*		*n=40*	
	M	*SD*	*M*	*SD*	*M*	*SD*
Attitude towards the advertisement	*-.22*	*1.01*	*.37*	*.99*	*.77*	*.94*
Congruency	*F (2, 109) =10.70, p=.000*		*Significant main effect*			
Pitch	*F (1, 109) =24.26, p=.000*		*Significant main effect*			
*Congruency*Pitch*	*F (2, 109) =2.12, p=.124*		*No significant interaction effect*			

Table.13: ANCOVA for Attitude towards the advertisement

- Also, the low-pitch radio advertisements result in a more positive attitude towards the advertisement than the high-pitch radio advertisement, $F(1, 109) = 24.265$, $p < 0.05$. These results were statistically significant and hence H4b is accepted.

- Furthermore, there was no significant interaction effect of congruence and pitch on the attitude towards the Chinese-accented advertisement $F(2, 109) = 2.12$, $p > 0.05$, thus rejecting H4c.

The descriptive graph is shown in Figure.5.

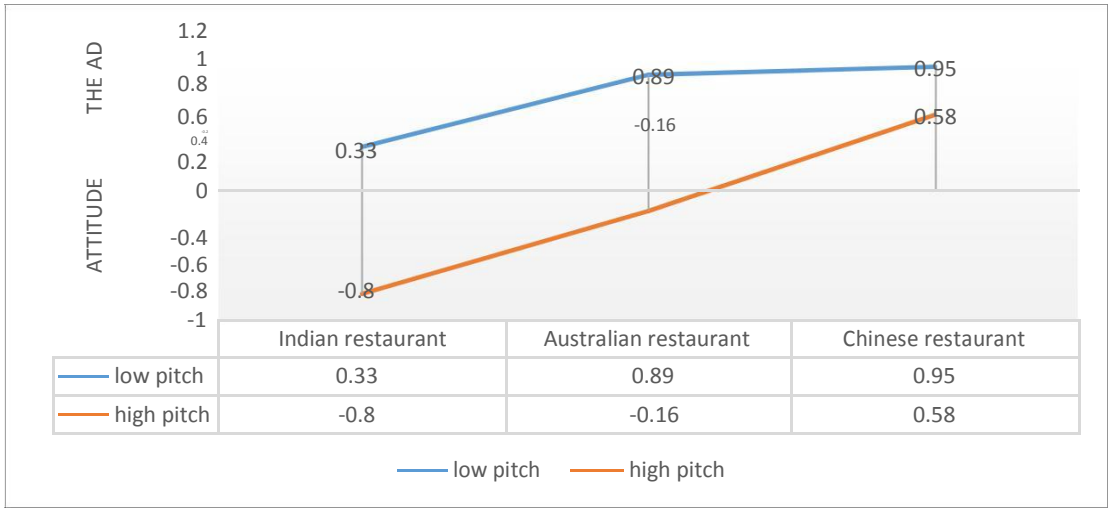

Figure.5: Descriptive statistics for attitude towards the advertisement

4.4. Regression:

Out of the four dependent variables *purchase intention*, *attitude towards the product*, *authenticity*, and *attitude towards the advertisement*, the most important variable to consider is *purchase intention*. Therefore, what influences purchase intention was investigated using the multiple regression in a stepwise manner. The independent variable tested are *cuisine preferences*, *ease of understanding the speaker*, *fit with the restaurant*, *likeability*, *skill in cooking the cuisine*, and *strong accent*. Table.14 below shows the results.

*Coefficients**

Model	***Unstandardized coefficients***		***Standardized coefficients***		
	B	*Std. Error*	*Beta*	*t*	*Sig.*
1. Constant	*.922*	*.253*		*3.642*	*.000*
Likeable	*.662*	*.079*	*.613*	*8.396*	*.000*
2. Constant	*.754*	*.251*		*3.003*	*.003*
Likeable	*.391*	*.118*	*.362*	*3.323*	*.001*
skillful in cooking the cuisine	*.349*	*.116*	*.329*	*3.019*	*.003*
3. Constant	*.211*	*.321*		*.658*	*.512*
Likeable	*.292*	*.121*	*.270*	*2.407*	*.018*
skillful in cooking the cuisine	*.324*	*.113*	*.305*	*2.857*	*.005*
easy to understand	*.277*	*.106*	*.212*	*2.612*	*.010*

Table.14: Regression for Dependent variables: Purchase intention*

From the table.14, it was revealed that out of all the independent variables, the three most important variables that can influence the buying behavior of a consumer are likeability, skillfulness in cooking the cuisine and the ease of understanding the speaker. Moreover, these three variables also contribute to 44% of the variance on purchase intention (see Table.15)

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	*.613[a]**	*.376*	*.371*	*1.381*
2	*.649[b]***	*.421*	*.411*	*1.335*
3	*.674[c]****	*.454*	*.440*	*1.303*

Table.15: Regression Model Summary

Likeable*

Likeable, skillful in cooking the cuisine**

Likeable, skillful in cooking the cuisine, easy to understand***.

Of the three main variables, two of them can relate to the quality of voice, i.e. likeability and ease of understanding the speaker. The results signify that besides the skill in cooking, the quality of voice also has the ability to influence the customer's attitude and purchase intention in radio advertising. The results show that the likeability towards the speaker's voice was the first thing in the radio advertisement that influences the listeners about the restaurant, followed by skillfulness of the chef and finally, the comprehensibility of the speaker's accent, i.e. how easy it is for the listeners to understand what the speaker in a radio was promoting.

Chapter 5: Discussion

This chapter will provide a summary of the research findings in relation to the objectives of the study. A discussion of results is given. This Chapter will also discuss the limitations of the current study followed by recommendations for future research.

5.1 Discussion of findings

This study was designed to determine the impact of foreign accents and vocal pitch for congruent and incongruent products in radio advertising. In line with expectations, the results support prior advertising claims which state that foreign accents in radio commercials can make a difference in advertising in terms of its effectiveness (Hendriks, van Meurs & van der Meij 2015; Lalwani, Lwin & Li 2005). In the present study, the most consistent finding was the congruency effect. For all the dependent variables, *purchase intention*, *attitude towards the product*, *authenticity* and *attitude towards the advertisement*, there was a significant main effect between the product and accent (Table.14). The findings, therefore, suggest that a Chinese-accented speaker advertising congruent products (i.e. a Chinese restaurant) is more effective than a Chinese-accented speaker advertising incongruent products (i.e. an Indian and Australian restaurant).

Further, there was also a main effect for pitch although this was not as strong as the congruency effect. The findings show a marginal effect for purchase intention and attitude towards the product, but a significant main effect for *attitude towards the advertisement*. That is, the speaker with a low-pitched voice leads listeners to form a more favorable and positive advertising effect

than the speaker with a high-pitched voice. Thus, the study confirms the importance of vocal pitch in radio advertising studied by the previous researchers (Chattopadhyay et al. 2002).

One possible reason why only a marginal effect was found for vocal pitch is may be because 31 participants were eliminated from the sample due to their misclassification of pitch, resulting in lower statistical power. These two main effects were found after controlling for the participants' comprehensibility of the advertisement and their preferences of Chinese, Australian, and Indian cuisines.

However, this study did not discover any significant interaction effect between congruency and pitch, although, the pattern of results hints at such an effect. Although not significant, this pattern suggests that the use of a low-pitch voice becomes exceptionally useful when the product is incongruent. In other words, the effectiveness of low pitch can compensate for the inefficiency of the product incongruency. Therefore, in terms of managerial implications, the advertisers should use low-pitch voices to improve the customer attitude towards the advertisement. In the context of the Elaboration Likelihood Model (Petty & Cacioppo 1986), the low pitch voices serve as an effective peripheral cue that enables a listener to change their perspective and behavior towards the advertised product under the incongruent situations. The regression analysis additionally shows that the characteristics of the voice i.e. comprehensibility and likeability of the voice are equally as important as the skill of the chef in persuading consumers to try the restaurant.

Finally, unlike previous studies which used different voices (Klofstad, Anderson & Peters 2012; Wiener & Chartrand this study used the same voice, but matched with different products and also with manipulated pitch 2014). Also, all the participants were monolingual native English Australian consumers. All these elements helped to control any kind of extraneous factors that may confound the results.

H1a.- Chinese-accented radio advertisement results in higher purchase intention for congruent products than the incongruent products.	Supported
H1b.- Low-pitched radio advertisements result in higher purchase intention than the high-pitch radio advertisement.	Partially supported
H1c.- There is a congruency and pitch interaction effect in the purchase intention for the Chinese-accented radio advertisement.	Not supported
H2a.- Chinese-accented radio advertisement lead consumers to form a more positive attitude towards congruent products than the incongruent products.	Supported
H2b.- Low-pitched radio advertisements lead consumers to form a positive attitude towards the congruent product than the high-pitch radio advertisement.	Partially supported
H2c.- There is a congruency and pitch interaction effect in the attitude towards the product for the Chinese-accented radio	Not supported
H3a. Chinese-accented radio advertisement results in higher authenticity for congruent products than the incongruent products.	Supported
H3b. Low-pitched radio advertisements lead to higher authenticity than the high-pitch radio advertisement.	Not supported
H3c. There is a congruency and pitch interaction effect in the authenticity for the Chinese-accented radio advertisement.	Supported
H4a. Chinese-accented radio advertisement lead listeners to form a positive attitude towards the advertisement for congruent products than the incongruent products.	Supported
H4b. Low-pitched radio advertisements lead listeners to form a positive attitude towards the advertisement than the high-pitch radio advertisement.	Supported
H4c. There is a congruency and pitch interaction effect in the attitude towards the advertisement for the Chinese-accented	Not supported

5.2 Limitations and Future research

As the study was the first to combine accent and pitch together, it is descriptive in nature and was restrained by several limitations. These are discussed below, as well as possible ways of addressing them in future research.

First, the study used only one foreign accent, i.e. the Chinese English accent to analyze the consumer response in radio advertising. Future research should replicate the same study with a number of other foreign accents, for instance, Italian, Greek, Australian English, Indian, or Lebanese. This would give the future researchers confidence in the theory.

Second, the dependent variables that were used in the study were minimal and have already been examined by prior researchers. Therefore, future research should introduce some new variables that have not been studied extensively by other researchers such as speech rate. The memory of the advertisement or brand can also be investigated as an additional dependent variable.

Also, the study used only monolingual native English Australian consumers. Future research needs to consider participants from various other ethnic groups.

Another limitation of the study is the small sample size. As this study was conducted for the master's course, the candidate did not have enough time to collect a larger sample. Future work should endeavor to gather a big group of respondents. This would certainly help to increase the power of the study.

And lastly, a non-professional speaker was used to do the voice recordings. Future researchers should hire a casting agency for the voice recording of a skilled speaker in order to develop the advertisement in a professional way.

APPENDIX A: Questionnaire

Block 1

0:00 / 0:30

Audio

Default Question Block

Q1. After listening to the radio ad, how likely would you be to visit this restaurant?

	Not at all likely	A little likely	Slightly likely	Moderately likely	Fairly likely	Very likely	Extremely likely
	0	1	2	3	4	5	6
Please indicate your willingness to visit using the scale on the right.	●	●	●	●	●	●	●

Q2. How good or bad do you think this restaurant would be?

	Extremely bad	Moderately bad	Slightly bad	Neither bad nor good	Slightly good	Moderately good	Extremely good
	-3	-2	-1	0	1	2	3
Please indicate your answer using the scale on the right.	●	●	●	●	●	●	●

Q3. How authentic do you think the flavour of the food in this restaurant would be?

	Not at all authentic	A little authentic	Slightly authentic	Moderately authentic	Fairly authentic	Very authentic	Extremely authentic
	0	1	2	3	4	5	6
Please indicate your answer by moving the slider on the right.							

Q4. How much do you like or dislike this radio advertisement?

	Dislike it immensely	Dislike it very much	Dislike it	Neither like nor dislike	Like it	Like it very much	Like it immensely
	-3	-2	-1	0	1	2	3
Please indicate your answer by using the scale on the right.	●	●	●	●	●	●	●

Q5. What is your first impression of the speaker?

Please indicate your answer by moving the slider below. The value will appear on the right.

	Not at all 0	A little 1	Slightly 2	Moderately 3	Fairly 4	Very 5	Extremely 6
Skillful in cooking this cuisine							
Reliable							
Trustworthy							

Q6. Overall, how similar or dissimilar are you to this speaker?

	Extremely dissimilar -3	Very dissimilar -2	Dissimilar -1	Neither dissimilar nor similar 0	Similar 1	Very similar 2	Extremely similar 3
Please indicate your answer by using the scale on the right.	●	●	●	●	●	●	●

Q7. How easy is it for you to understand the speaker?

	Not at all easy 0	A little easy 1	Slightly easy 2	Moderately easy 3	Fairly easy 4	Very easy 5	Extremely easy 6
Please indicate your answer by moving the slider on the right.							

Q8. How would you describe the pitch of the speaker's voice?

- ● Low pitch
- ● High pitch

Q9. What do you think about the accent of the speaker of this advertisement?

Please indicate your answer by moving the slider below. The value will appear on the right.

Not at all 0	A little 1	Slightly 2	Moderately 3	Fairly 4	Very 5	Extremely 6

Strong accent						
Likeable						
Fits the restaurant						

Q10. Which country do you think the speaker of this advertisement was born in?

- Thailand
- India
- China
- Japan
- Indonesia
- Korea
- other, please specify.

Q11. How often do you listen to the radio?

- Not at all
- Once a week
- Two times a week
- Three time a week
- Four times a week
- Five times a week
- More than five times a week

Q12. How much do you like or dislike the following cuisine?

Please indicate your answer by using the scale below.

	Dislike a immensely	Dislike it very much	Dislike it	Neither like nor dislike	Like it	Like it very much	Like it immensely
	-3	-2	-1	0	1	2	3
Australian cuisine	●	●	●	●	●	●	●
American cuisine	●	●	●	●	●	●	●
Japanese cuisine	●	●	●	●	●	●	●
Indian cuisine	●	●	●	●	●	●	●
Chinese cuisine	●	●	●	●	●	●	●
Korean cuisine	●	●	●	●	●	●	●
British cuisine	●	●	●	●	●	●	●

Q13. What is your age?

	18 - 24	25 - 34	35 - 44	45 - 54	55-64
Please indicate your age by using the scale on your right.	●	●	●	●	●

Q14. What is your gender?

- ● Female
- ● Male

APPENDIX B: Participant Information & Consent Form

Department of Marketing & Management
Faculty of Business & Economics
MACQUARIE UNIVERSITY NSW 2109
Phone: +61 (0)2 9850 9135
Email: Lawrence.ang@ mq.edu.au

Chief Investigator's / Supervisor's Name & Title: Associate Prof. Lawrence Ang

Dr. Janise Farrell

Participant Information and Consent Form

You are invited to participate in a study of consumer attitudes to radio advertising. The purpose of the study is to investigate how Australian consumers evaluate radio commercials.

The study is being conducted by Associate Prof. Lawrence Ang (Chief Investigator) Lecturer at the Department of Marketing & Management, contact telephone number 02 9850 9135 and email: Lawrence.ang@mq.edu.au,co-supervisor Dr. Janise Farrell, Student Engagement Coordinator, Learning and Teaching, contact telephone number 0298504815 and email: Janise.farrell@mq.edu.au and co-investigator Megha Dubey, and email: megha.dubey@students.mq.edu.au.

This research is being conducted to meet the requirements for the degree of Masters of Research under the supervision of Associate Prof. Lawrence Ang and Dr. Janise Farrell. Specifically, this research will be used for the purposes of the master's thesis, which Megha Dubey is submitting as part of their Masters of Research Degree program. The above stated Chief Investigator is the supervisor of this thesis.

Participation is open to those who were born in Australia and speak English as their native language. If you agree to participate, you will be asked to listen to a radio advertisement and then complete a survey. This will take approximately 10-15 minutes of your time. Participants will receive a $5 gift voucher.

Any information or personal details gathered in the course of the study are kept confidential as required by law. No individual will be identified in any publication of the results. Only the chief investigator Associate Prof. Lawrence Ang, co-supervisor Dr. Janise Farrell and co-investigator Megha Dubey will have access to the data. A summary of the results of the data can be made available to you on request, if you provide your contact details.

Participation in this study is entirely voluntary: you are not obliged to participate and if you decide to participate, you are free to withdraw at any time without having to give a reason and without consequence.

I, have read (or, where appropriate, have had read to me) and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to participate in this research, knowing that I can withdraw from further participation in the research at any time without consequence. I have been given a copy of this form to keep.

Participant's Name:_____

(Block letters)

Participant's Signature: _____ Date:_____

Investigator's Name:_____

(Block letters)

Investigator's Signature: _____ ___ Date: _____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics & Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

(INVESTIGATOR'S COPY)

Department of Marketing & Management
Faculty of Business & Economics
MACQUARIE UNIVERSITY NSW 2109
Phone: +61 (0)2 9850 9135
Email: Lawrence.ang@ mq.edu.au

Chief Investigator's / Supervisor's Title and Name: Associate Prof. Lawrence Ang

Dr. Janise Farrell

Debrief Information and Consent Form

Name of Project: Effects of voice pitch and Asian-accented English for congruent and non-congruent products in radio advertising

Thank you for participating in this research. You were told that the purpose of the study was to investigate how Australian consumers evaluate radio commercials. The true purpose of the study, however, was to evaluate a foreign accent with a low and a high pitch in radio advertising with the products that were similar or different with the speaker's accent. The true nature of the study was necessary to concealed in order to conduct the research so that your attitude and behaviour would not be influenced by any of the factors like accent, pitch or product.

The study is being conducted by Associate Prof. Lawrence Ang (Chief Investigator) Lecturer at the Department of Marketing & Management, contact telephone number 02 9850 9135 and email: Lawrence.ang@mq.edu.au,co-supervisor Dr. Janise Farrell, Student Engagement Coordinator, Learning and Teaching, contact telephone number 0298504815 and email: Janise.farrell@mq.edu.au and co-investigator Megha Dubey, and email: megha.dubey@students.mq.edu.au.

This research is being conducted to meet the requirements for the degree of Masters of Research under the supervision of Associate Prof. Lawrence Ang and Dr. Janise Farrell. Specifically, this research will be used for the purposes of the master's thesis, which Megha Dubey is submitting as part of their Masters of Research Degree program. The above stated Chief Investigator is the supervisor of this thesis.

Any information or personal details gathered in the course of the study are kept confidential as required by law. No individual will be identified in any publication of the results. Only the chief investigator Associate Prof. Lawrence Ang, co-supervisor Dr. Janise Farrell and co-investigator Megha Dubey will have access to the data. A summary of the results of the data can be made available to you on request, if you provide your contact details.

You are free to withdraw your consent for your data to be used in this research now that you are aware of the true purpose of this experiment without giving a reason and without consequence. If you wish to withdraw your consent from this research you will still receive the gift voucher worth $5.

I, have read (or, where appropriate, have had read to me) and understand the information above and any questions I have asked have been answered to my satisfaction. I agree to my data to be used in this research now that I am aware of the true nature of this study, knowing that I can withdraw from further participation in the research without consequence. I have been given a copy of this form to keep.

Participant's Name:_____

(Block letters)

Participant's Signature: _____ Date:_____

Investigator's Name:_____

(Block letters)

Investigator's Signature: _____ ___ Date: _____

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics and Integrity (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.

(INVESTIGATOR'S COPY)

APPENDIX C: ETHICS APPROVAL

RE: 'The Effects of Voice Pitch and Chinese-Accented English for Congruent and Incongruent Products in Radio Advertising' (Ref: 5201600524)

The above application was reviewed by the Faculty of Business & Economics Human Research Ethics Sub Committee. Approval of the above application is granted, effective "20/07/2016". This email constitutes ethical approval only.

This research meets the requirements of the National Statement on Ethical Conduct in Human Research (2007). The National Statement is available at the following web site:

http://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/e72.pdf.

The following personnel are authorised to conduct this research:

Assoc. Prof Lawrence Ang

Dr. Janise Farrell

Ms. Megaha Dubey

NB. STUDENTS: IT IS YOUR RESPONSIBILITY TO KEEP A COPY OF THIS APPROVAL

EMAIL TO SUBMIT WITH YOUR THESIS.

Please note the following standard requirements of approval:

1. The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Human Research (2007).

2. Approval will be for a period of five (5) years subject to the provision of annual reports.

Progress Report 1 Due: 20th July 2017
Progress Report 2 Due: 20th July 2018
Progress Report 3 Due: 20th July 2019
Progress Report 4 Due: 20th July 2020
Final Report Due: 20th July 2021

NB. If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report for the project.

Progress reports and Final Reports are available at the following website: http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are

continually changing, for example, new child protection and privacy laws).

4. All amendments to the project must be reviewed and approved by the Committee before implementation. Please complete and submit a Request for Amendment Form available at the following website:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that affect the continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at the following websites:

http://www.mq.edu.au/policy/
http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide the Macquarie University's Research Grants Management Assistant with a copy of this email as soon as possible. Internal and External funding agencies will not be informed that you have approval for your project and funds will not be released until the Research Grants Management Assistant has received a

copy of this email.

If you need to provide a hard copy letter of approval to an external organisation as evidence that you have approval, please do not hesitate to contact the FBE Ethics Committee Secretariat, via fbe-ethics@mq.edu.au or 9850 4826.

Please retain a copy of this email as this is your official notification of ethics approval.

Yours sincerely,

Dr. Nikola Balnave
Chair, Faculty of Business and Economics Ethics Sub-Committee

FBE Ethics Secretariat

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References

Ahmed, SA, d'Astous, A & Benmiloud Petersen, H 2011, 'Product-country fit in the Canadian context', *Journal of Consumer Marketing*, vol. 28, no. 4, pp. 300-9.

Boersma, P 2002, 'Praat, a system for doing phonetics by computer', *Glot international*, vol. 5, no. 9/10, pp. 341-5.

Bresnahan, MJ, Ohashi, R, Nebashi, R, Liu, WY & Shearman, SM 2002, 'Attitudinal and affective response toward accented English', *Language & Communication*, vol. 22, no. 2, pp. 171-85.

Brown, BL, Strong, WJ & Rencher, AC 1974, 'Fifty-four voices from two: the effects of simultaneous manipulations of rate, mean fundamental frequency, and variance of fundamental frequency on ratings of personality from speech', *The Journal of the Acoustical Society of America*, vol. 55, no. 2, pp. 313-8.

Brunton, C 2014, *Radio industry unveils "Radio. It's a Love Thing" brand campaign*, <http://www.commercialradio.com.au/content/mediareleases/2014/2014-10-17-radio-industry-unveils-radio-it%E2%80%99s-a-lov#.V0cGgTV97IU>.

Chattopadhyay, A, Dahl, DW, Ritchie, R & Shahin, KN 2002, 'Hearing voices: The impact of announcer speech characteristics on consumer response to broadcast advertising', *Sauder School of Business Working Paper*.

Collins, SA & Missing, C 2003, 'Vocal and visual attractiveness are related in women', *Animal Behaviour*, vol. 65, no. 5, pp. 997-1004.

Dabbs, JM & Mallinger, A 1999, 'High testosterone levels predict low voice pitchamong men', *Personality and individual differences*, vol. 27, no. 4, pp. 801-4.

DeShields, OW & De los Santos, G 2000, 'Salesperson's accent as a globalization issue', *Thunderbird International Business Review*, vol. 42, no. 1, pp. 29-46.

DeShields, OW & Kara, A 2011, 'The varying influence of spokesperson's accent in communication effectiveness: A comparative study in two different regions of Mexico', *Journal of Targeting, Measurement and Analysis for Marketing*, vol. 19, no. 1, pp. 55-65.

Dictionary, a. (2016). accent Meaning in the Cambridge English Dictionary. [online] Dictionary.cambridge.org. Available at: http://dictionary.cambridge.org/dictionary/english/accent [Accessed 9 Oct. 2016].

Dietz, J, Hosoda, M & Stone-Romero, E 2010, 'The effects of foreign accents on employment-related decisions', *Journal of Managerial Psychology*, vol. 25, no. 2, pp. 113-32.

Edwards, JR 1982, 'Language attitudes and their implications among English speakers', *Attitudes toward language variation*, pp. 20-33.

Finsterwalder, J, Garry, T, Rao Hill, S & Tombs, A 2011, 'The effect of accent of service employee on customer service evaluation', *Managing Service Quality: An International Journal*, vol. 21, no. 6, pp. 649-66.

Foon, AE 1986, 'A social structural approach to speech evaluation', *The Journal of Social Psychology*, vol. 126, no. 4, pp. 521-30.

Fraccaro, PJ, O'Connor, JJ, Re, DE, Jones, BC, DeBruine, LM & Feinberg, DR 2013, 'Faking it: deliberately altered voice pitch and vocal attractiveness', *Animal Behaviour*, vol. 85, no. 1, pp. 127-36.

Gelinas-Chebat, C & Chebat, J-C 1992, 'Effects of two voice characteristics on the attitudes toward advertising messages', *The Journal of Social Psychology*, vol. 132, no. 4, pp. 447-59.

Gélinas-Chebat, C, Chebat, J-C & Boivin, R 1999, 'IMPACT OF MALE AND FEMALE VOICE CUES ON CONSUMERS 'ATTITUDES IN TELEMARKETING', in *Conference proceedings of 14. International Conference of Phonetic Science*, pp. 1577-80.

Gélinas-Chebat, C, Chebat, J-C & Vaninsky, A 1996, 'Voice and advertising: Effects of intonation and intensity of voice on source credibility, attitudes toward the advertised service and the intent to buy', *Perceptual and motor skills*, vol. 83, no. 1, pp. 243-62.

Giles, H, Williams, A, Mackie, DM & Rosselli, F 1995, 'Reactions to Anglo-and Hispanic-American-accented speakers: Affect, identity, persuasion, and the English-only controversy', *Language & Communication*, vol. 15, no. 2, pp. 107-20.

Haarmann, H 1989, *Symbolic values of foreign language use: From the Japanese case to a general sociolinguistic perspective*, vol. 51, Walter de Gruyter.

Heaton, H & Nygaard, LC 2011, 'Charm or harm: Effect of passage content on listener attitudes toward American English accents', *Journal of language and social psychology*, p. 0261927X10397288.

Hendriks, B, van Meurs, F & van der Meij, E 2015, 'Does a foreign accent sell? The effect of foreign accents in radio commercials for congruent and non-congruent products', *Multilingua*, vol. 34, no. 1, pp. 119-30.

Hornikx, J, van Meurs, F & Hof, R-J 2013, 'The effectiveness of foreign-language display in advertising for congruent versus incongruent products', *Journal of International Consumer Marketing*, vol. 25, no. 3, pp. 152-65.

Hosoda, M, Stone-Romero, EF & Walter, JN 2007, 'Listeners' cognitive and affective reactions to English speakers with standard American English and Asian accents', *Perceptual and motor skills*, vol. 104, no. 1, pp. 307-26.

Imhof, M 2010, 'Listening to voices and judging people', *The Intl. Journal of Listening*, vol. 24, no. 1, pp. 19-33.

Keller, KL 1993, 'Conceptualizing, measuring, and managing customer-based brand equity', *the Journal of Marketing*, pp. 1-22.

Kelly-Holmes, H 2005, *Advertising as multilingual communication* (pp. 80-81). Basingstoke: Palgrave Macmillan.

Klofstad, CA, Anderson, RC & Nowicki, S 2015, 'Perceptions of competence, strength, and age influence voters to select leaders with lower-pitched voices', *PloS one*, vol. 10, no. 8, p. e0133779.

Klofstad, CA, Anderson, RC & Peters, S 2012, 'Sounds like a winner: voice pitch influences perception of leadership capacity in both men and women', *Proceedings of the Royal Society of London B: Biological Sciences*, p. rspb20120311.

Lalwani, AK, Lwin, M & Li, KL 2005, 'Consumer responses to English accent variations in advertising', *Journal of Global Marketing*, vol. 18, no. 3-4, pp. 143-65.

Leclerc, F, Schmitt, BH & Dubé, L 1994, 'Foreign branding and its effects on product perceptions and attitudes', *Journal of marketing Research*, pp. 263-70.

Lev-Ari, S & Keysar, B 2010, 'Why don't we believe non-native speakers? The influence of accent on credibility', *Journal of Experimental Social Psychology*, vol. 46, no. 6, pp. 1093-6.

Levi, SV & Pisoni, DB 2007, 'Indexical and linguistic channels in speech perception: Some effects of voiceovers on advertising outcomes', *Psycholinguistic Phenomena in Marketing Communications*, pp. 203-19.

Lindemann, S 2003, 'Koreans, Chinese or Indians? Attitudes and ideologies about non-native English speakers in the United States', *Journal of Sociolinguistics*, vol. 7, no. 3, pp. 348-64.

Mai, R & Hoffmann, S 2014, 'Accents in business communication: An integrative model and propositions for future research', *Journal of Consumer Psychology*, vol. 24, no. 1, pp. 137-58.

Martín-Santana, JD, Muela-Molina, C, Reinares-Lara, E & Rodríguez-Guerra, M 2015, 'Effectiveness of radio spokesperson's gender, vocal pitch and accent and the use of music in radio advertising', *BRQ Business Research Quarterly*, vol. 18, no. 3, pp. 143-60.

Morales, AC, Scott, ML & Yorkston, EA 2012, 'The role of accent standardness in message preference and recall', *Journal of advertising*, vol. 41, no. 1, pp. 33-46.

Musicinaustralia.org.au. (2016). An Overview of the Australian Commercial Radio Broadcasting Sector - Music in Australia - Knowledge Base. [online] Available at: http://musicinaustralia.org.au/index.php?title=An_Overview_of_the_Australian_Commercial_Radio_Broadcasting_Sector.

Nielsen 2014, *FOR ADVERTISERS, RADIO IS WORTH LISTENING TO*, <http://www.nielsen.com/us/en/insights/news/2014/for-advertisers-radio-is-worth-listening-to.html>.

Petty, RE & Cacioppo, J.T., 1986. *The elaboration likelihood model of persuasion*. In communication and persuasion (pp. 1-24). Springer New York.

Puts, DA, Gaulin, SJ & Verdolini, K 2006, 'Dominance and the evolution of sexual dimorphism in human voice pitch', *Evolution and Human Behavior*, vol. 27, no. 4, pp. 283-96.

Puzakova, M, Kwak, H & Bell, M 2015, 'Beyond Seeing McDonald's Fiesta Menu: The Role of Accent in Brand Sincerity of Ethnic Products and Brands', *Journal of advertising*, vol. 44, no. 3, pp. 219-31.

Radio Advertising Bureau, 2013. Radio Listening Habits, Available from: http://www.rab.co.uk/why-use-radio/listener-insight/radio-listening-habits

Reinares-Lara, E., Martín-Santana, J.D. and Muela-Molina, C., 2016. The Effects of Accent, Differentiation, and Stigmatization on Spokesperson Credibility in Radio Advertising. *Journal of Global Marketing*, *29*(1), pp.15-28.

Rodero, E 2015, 'The principle of distinctive and contrastive coherence of prosody in radio news: an analysis of perception and recognition', *Journal of nonverbal behavior*, vol. 39, no. 1, pp. 79-92.

Rodero, E, Larrea, O & Vázquez, M 2010, 'Voces masculinas y femeninas en la locución de cuñas publicitarias. Estudio sobre la efectividad y su adecuación al producto', in *El poder creativo de la palabra. Actas del I Congreso PUBLIRRADIO, Madrid, Actas ICONO*, vol. 14.

—— 2013, 'Male and female voices in commercials: Analysis of effectiveness, adequacy for the product, attention and recall', *Sex roles*, vol. 68, no. 5-6, pp. 349-62.

Spilski, A & Groeppel-Klein, A 2007, 'When Celebrity Endorsers Act in Their Fictional Stage Characters: the Impact of Congruent and Non-Congruent Media Contexts on Advertising Effects', *E-European Advances in Consumer Research Volume 8*.

Stel, M, van Dijk, E, Smith, PK, van Dijk, WW & Djalal, FM 2012, 'Lowering the pitch of your voice makes you feel more powerful and think more abstractly', *Social Psychological and Personality Science*, vol. 3, no. 4, pp. 497-502.

Tigue, CC, Borak, DJ, O'Connor, JJ, Schandl, C & Feinberg, DR 2012, 'Voice pitch influences voting behavior', *Evolution and Human Behavior*, vol. 33, no. 3, pp. 210-6.

Timming, AR 2016, 'The effect of foreign accent on employability: a study of the aural dimensions of aesthetic labour in customer-facing and non-customer-facing jobs', *Work, Employment & Society*, p. 0950017016630260.

Tsalikis, J, Ortiz-Buonafina, M & LaTour, MS 1992, 'The role of accent on the credibility and effectiveness of the international business person: The case of Guatemala', *International Marketing Review*, vol. 9, no. 4.

Wang, Z, Arndt, AD, Singh, SN, Biernat, M & Liu, F 2013, '"You Lost Me at Hello": How and when accent-based biases are expressed and suppressed', *International Journal of Research in Marketing*, vol. 30, no. 2, pp. 185-96.

Warhurst, S, McCabe, P & Madill, C 2013, 'What makes a good voice for radio: perceptions of radio employers and educators', *Journal of Voice*, vol. 27, no. 2, pp. 217-24.

Wiener, HJ & Chartrand, TL 2014, 'The effect of voice quality on ad efficacy', *Psychology & Marketing*, vol. 31, no. 7, pp. 509-17.

Zemlin, WR 1998, *Speech and hearing science*, 4th edn, Anatomy and Physiology, Allyn and Bacon, Boston.