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MONTCLAIR STATE UNIVERSITY

/ The Effect of Charisma, Voice Pitch, and Information Richness on
Leadership Perception and Follower Performance /

by

Hillman Wirawan

A Master's Thesis Submitted to the Faculty of

Montclair State University

In Partial Fulfillment of the Requirements

For the Degree of

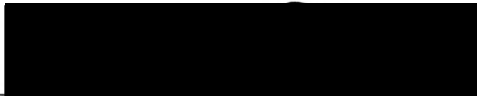
Master of Arts in Industrial and Organizational Psychology

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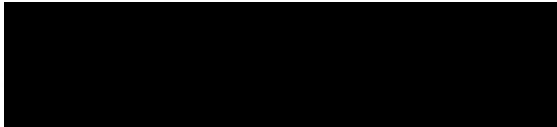
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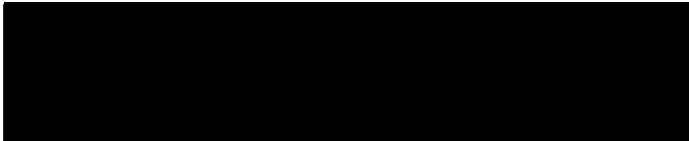
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ABSTRACT

This study aimed to investigate the effect of charisma, voice pitch, and information richness on followers' perceptions of leadership and task performance. A number of previous studies consistently found significant effects of charisma on performance. Similarly, some studies found the effect of lower voice pitch on leadership perception and effectiveness. In addition, the growth of information technology has changed the way leaders influence followers, making this variable an interesting one to examine. This study employed 2 (charisma vs. non-charisma) x 2 (low vs. high voice pitch) x 2 (strong vs. weak information delivery) experimental design. The participants were undergrad students ($N= 259$) and most of them were female (Female= 185, Male= 74) with age range from 18 to 31 ($mean= 19.76$, $SD= 2.25$). The study found the main effect of charismatic leader ($F= 12.17$, $p < .001$) and lower voice pitch ($F= 12.89$, $p < .001$) on participants' rating of charisma. In addition, the three-way interaction also occurred on the effect of leader charisma, voice pitch, and information richness on performance ($F= 4.41$, $p < .05$). Participants under non-charismatic, low pitch, and strong information delivery performed highest across conditions. Implications are discussed.

THE EFFECT OF CHARISMA, VOICE PITCH, AND INFORMATION RICHNESS
ON LEADERSHIP PERCEPTION AND FOLLOWER PERFORMANCE

A THESIS

Submitted in partial fulfillment of the requirements
for the degree of MA in Industrial and Organizational Psychology

by

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Montclair, NJ

2016

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The Effect of Charisma, Voice Pitch, and Information Richness on
Leadership Perception and Follower Performance

Leadership has been studied extensively for decades and many approaches to understanding leadership and definitions of leadership have been offered (Day, Fleenor, Atwater, Sturm, & McKee, 2014; Dinh, Lord, & Gardner, 2014). Northouse (2010) extensively reviewed the key elements of leadership and defined leadership as a process whereby an individual influences his/ her group to achieve certain goals. This definition covers four important components of leadership (i.e. process, group, influence, and goals). Northouse (2010) also suggested different approaches to understanding leadership including traits, skills, situations, and leadership styles.

From a trait perspective, Landis, Hill, and Harvey (2014) argued that the early leadership theory emphasized the role of a great-man theory. According to the great-man (or woman) theory, leaders are born with certain innate talents that distinguish them from followers, and these talents develop to emerge effective leaders in given situations (Cawthon, 1996). Moreover, Landis and others (2014) noted that many of the great man theorists also advanced the point of view that leadership was directly related to inheritance. This theory still influences our practices even though it appears to ignore the other important characteristics of leadership and limit others opportunity to lead (Hoffman, Woehr, Maldagen-Youngjohn, & Lyons, 2011).

The skills approach stresses on individual capability to lead others (Mumford, Campion, & Morgeson, 2007). The four major leadership skills; cognitive, interpersonal, business and strategic are essential in performing effective leadership (Mumford et al., 2007) and certain type of skills (e.g., planning) determines the effectiveness of leader in a

team (Marta, Leritz, & Mumford, 2005). Some approaches such as the leadership skills are observable and open for training and change, while others like trait theories are related to personality traits and may not be easily changed (Northouse, 2010) .

Distinct from other leadership theories, the Situational Leadership theory suggests that there is no single best style of leadership and leadership must be matched with followers' developmental needs (Hersey & Blanchard, 1977; Fiedler, 1978). The leader's ability to determine the amount of task and relationship toward their follower is the key of successful leadership. The leaders should learn the level of their team's maturity and determine an appropriate approach (Hersey & Blanchard, 1977). Despite the popularity among practitioners, some studies found the absence of robust empirical support for the theory (Graeff, 1983). Nevertheless, the Fiedler's contingency approach was found to be predictive for team performance (Strube & Garcia, 1981).

Leadership style approaches emphasizes leader behavior, and focus on what leaders do and how they act (Northouse, 2010). Two styles, transformational and transactional leadership, attract many researchers in the area of leadership (John Antonakis & House, 2014; Deichmann & Stam, 2015; Odumeru & Ifeanyi, 2013; Tyssen, Wald, & Spieth, 2014). The transformational leadership influences and transforms followers through motivation and inspiration while the transactional leadership expresses clear expectation from leader-member relationship and utilizes transactional reward-punishment (Avolio, Bass, & Jung, 1999; Bass, 1985). Numerous studies have found the effect of these leadership styles on followers and organization performance (Deichmann & Stam, 2015; Jacquart & Antonakis, 2015; Nohe, Michaelis, Menges, Zhang, & Sonntag, 2013; Wells, Peachey, & Walker, 2014; Yucel, McMillan, & Richard, 2014).

Similar with the transformational leadership, charismatic leadership also attracts much attention (Rowold & Heinitz, 2007). Some scientists believe that charismatic leadership is similar to transformational leadership style or the sub component of transformational leadership (Levine, Muenchen, & Brooks, 2010; Rowold & Heinitz, 2007). Despite the debates, both transformational and charismatic leadership styles have massive impact on leadership as a scientific domain (Antonakis, 2012). The significant advantages of charisma has been documented such as improving followers' performance (Kirkpatrick & Locke, 1996; Shea, 1999) and influencing followers positive emotions (Bono & Ilies, 2006).

Unlike the non-charismatic leadership or the transactional leadership, charisma involves sharing and communicating vision, emotion, ideology, and values with followers (Antonakis, Fenley, & Liechti, 2011; Antonakis, 2012; Bono & Ilies, 2006; Frese, Beimel, & Schoenborn, 2003). Therefore, charisma's effects are evident on followers attributions and its antecedents stem from nonverbal and verbal tactics (Antonakis et al., 2011; Jacquart & Antonakis, 2015). Based on this definition, (Antonakis, d'Adda, Weber, & Zehnder, 2015) identified the nonverbal (e.g., facial expressions) and verbal (e.g., metaphors and rhetorical questions) tactics of charisma.

Given the above ideas, charismatic leadership can be defined as the way of leaders communicating vision, emotion, ideology, and values to their followers by using the set of non-verbal and verbal tactics. Therefore, in order to possess certain level of charisma leaders should commit to particular non-verbal and verbal charismatic tactics. Previous studies have established this set of tactics to improve leaders' charisma or

perceived charisma (Antonakis, et al., 2015; Antonakis et al., 2011; Antonakis, Marika, & Liechti, 2012; Jacquart & Antonakis, 2015).

Demographic variables such as age, gender, and race also influence leadership. For instance, male teams preferred taller captains but not for female teams (Elgar, 2016), and mouth width can predict leadership selection and success (Re & Rule, 2016). In terms of age, older members are preferred because of their experience (Elgar, 2016). Moreover, male and female employees tend to have similar perceptions toward leadership (Kis & Konan, 2014; Hutton, 2013) although males still dominate many leadership positions (Muethel, Gehrlein & Hoegl (2012). In terms of race, leaders of color may face more obstacles (Ospina & Foldy, 2009), and Blacks could be seen as less fit than White leaders as the effect of implicit leadership theory (Avery, McKay, Volpone, & Malka, 2015). However, many of leader-race studies were conducted where White was dominant race (Ospina and Foldy (2009).

Recently, some researchers found that other biological factors such as genes (De Neve, 2012) and voice pitch (Klofstad, Anderson & Peters, 2012) could influence leadership perception and roles. In addition, the effect of voice pitch can bring positive effect to leadership. For instance, managers who possessed low voice pitch had more opportunity to lead larger companies, and as a result they made more money (Mayew, Parsons, & Venkatachalam, 2013). Followers perceive leaders with lower voice pitch as more leader like than leaders with high pitch (DeGroot, Aime, Johnson, & Kluemper, 2011).

Beyond the leadership styles and demographic variables, technologies also influence leadership (Avolio & Kahai S., 2003; Purvanova & Bono, 2009; Savolainen,

2014; Serban et al., 2015; Zigurs, 2003). In today's world, organizations are facing more dynamic and complex challenges. Leader characteristics and behaviors are not the only important components in the leadership. Leaders should be able to communicate their messages and visions through different media. Leaders and followers communicate through various information technologies where the leaders manage projects from a distance (Hambley, O'Neill, & Kline, 2007; Lu, Shen, & Williams, 2014; Purvanova & Bono, 2009; Zigurs, 2003).

Avolio and Kahai (2003) have postulated the concept of *e*-leadership and the importance of information technology in spreading the effect of leadership on followers. Moreover, today's leaders are often challenged to manage virtual teams where effective leader behaviors can be expressed through virtual environment (Zigurs, 2003). The effect of face-to-face leadership equals to virtual leaders if the leaders provide similar information richness (Daft & Lengel, 1984).

Given the previous discussion, leaders' charismatic tactics have significant effect on followers' positive attitude, performance, and leadership perceptions by others (Antonakis, 2012; Kirkpatrick & Locke, 1996; Shea, 1999). Voice pitch is also an interesting trait where many findings conclude some advantages of having low voice pitch such as perceived as more leader-like, influential, and higher leadership position (DeGroot et al., 2011; DeGroot & Motowidlo, 1999; C. a. Klofstad, Anderson, & Peters, 2012; Mayew et al., 2013). In addition, today's organizations demand their leaders to communicate using numerous information technologies. Information richness is important component in expressing leaders' characteristics, messages and other attributes (*see* Avolio & Kahai S., 2003; Zigurs, 2003). For example, different media (e.g., video

and audio) has different information richness and eventually perceived differently by perceivers (Daft & Lengel, 1994).

In the review that follows, this study will first discuss charisma and its effects on followers' perception and performance. Then, the study will discuss the effect of voice pitch and information richness on followers. Finally, hypotheses and exploratory questions will be provided.

Literature Review

Charismatic Leadership. Leadership is an important element in organizations. A number of researchers in various fields of study such as business, management, and psychology have documented the importance of leadership (Dai, Dai, Chen, & Wu, 2013; Jacquart & Antonakis, 2015; Kirkpatrick & Locke, 1996; Awamleh & Gardner, 1999). The effect of certain style of leader on followers is fundamental to organizational life. There are abundant reports discuss the effect of leadership style including how the transformational or charismatic style increases followers' organizational commitment (Dai et al., 2013; Gebert, Heinitz, & Buengeler, 2016; Gumusluoglu, Karakitapoğlu-Aygün, & Hirst, 2013; Yucel et al., 2014) and also fosters organizational citizenship behavior (Guay & Choi, 2015; Humphrey, 2012; Nahum-Shani & Somech, 2011; Tonkin, 2013).

Bass (1990) defined charisma or idealized influence as to which a leader performs in an admirable manner, utilizes a clear set of values, and acts as a role model for other organization members. Moreover, Bass (1990) suggested that charisma is a component of transformational leadership style. However, the charismatic style is more relevant to

idealized influence and inspirational motivation (Avolio et al., 1999) and these two dimensions have been used to measure the degree of charisma.

Levine and others (2010) argue that the charismatic style of leadership has overlapping and similar construct with transformational style, while some scientists still believe that the charisma is a component of transformational style (Bass, 1990). This component (i.e. charisma) has a tremendous effect on followers' behavior that can enhance positive perceptions toward the leader (Dvir, Eden, Avolio, & Shamir, 2002; Frese et al., 2003; Hamstra, 2014; Kirkpatrick & Locke, 1996; Shamir, House, & Arthur, 1993; Verčič, 2014).

The role of charismatic leaders is important to organizations because several studies and practices have found significant effects of charisma on performance (Boehm, Dwertmann, Bruch, & Shamir, 2014; Jacquart & Antonakis, 2015; Kirkpatrick & Locke, 1996; Nohe et al., 2013). In the early study of charisma-performance relationship, a number of researchers found a significant relationship between charisma and follower's performance. For instance, in an experiment where 282 undergraduate students involved and they were assigned to a simulated production assignment, the positive relationship among charismatic behaviors, performance, task satisfaction, and attitude toward the leader was found (Kirkpatrick & Locke, 1996). This research also becomes an important standpoint on the effect of charismatic leadership on performance.

In addition, Dvir, Eden, Avolio, and Shamir (2002), Shamir, House, and Arthur, (1993) and Shea, (1999) consistently found strong positive relationships between charismatic leadership style and follower performance. Shea (1999) postulated that charismatic leadership style is able to hold sustainable followers' quality of performance

overtime. However, the charisma might also indirectly influence performance. Leader's charisma influences followers through the present of task-feedback (Shea & Howell, 1999) and follower's attitude toward the leader (Kirkpatrick & Locke, 1996). Leaders will be perceived as effective if he/ she can communicate components of charisma (i.e. communicating vision and paralinguistic) to other people (Frese et al., 2003). Other attributes such as company performance can also interact with leaders' charisma in predicting leaders retention (Jacquart & Antonakis, 2015).

The importance of charismatic style has also emerged in various research designs to find which components of charisma have more effect on participants' performance. Most of the studies used experimental designs to examine different variables and their effect on performance. Antonakis, Fenley, and Liechti (2011) and Antonakis and others (2015), for instance, suggested nine verbal and three non-verbal tactics. The verbal (metaphors, rhetorical questions, stories and anecdotes, contrasts and comparison, using lists, expressing moral conviction, expressing the sentiments of the collective, setting high and ambitious goals, creating confidence goals can be achieved) and three non-verbal tactics (body gestures, facial expressions, and animated voice tone) can be taught in training (Antonakis et al., 2011). In the end, the emergence of a charismatic leader occurs, as followers perceive certain characteristics from the leader.

Antonakis and others (2015) had also studied the direct effect of charisma on performance. They found that workers who were exposed to a charismatic presentation increased their output on average by about 17% relative to the workers who received the non-charismatic presentation. The charismatic components they used in the charismatic

speech were the same components suggested by Antonakis et al., (2011). This study, again, suggests that charisma has positive effect on performance.

A leader with a charismatic style has the ability to impact followers' emotional states and eventually change followers' perception towards the leader (Bono & Ilies, 2006). Bono and Illies (2006) contended that leaders' charismatic style together with positive emotional expressions and followers' mood influenced the ratings towards the leader's effectiveness and attractiveness. On the other hand, the role of other variables such as a captivating and engaging voice tone, gestures, direct eye contact, and animated facial expressions are also important to perceiving charisma (Frese et al., 2003).

There is a reason behind the effect of charisma on followers' perception and performance. Charisma involves sharing and communicating vision, emotion, ideology, and values with followers (Antonakis, Fenley, & Liechti, 2011; Antonakis, 2012; Bono & Ilies, 2006; Frese, Beigel, & Schoenborn, 2003). However, it requires non-verbal and verbal tactics to perform as charismatic leaders and bring influence to followers (Antonakis, et al., 2015; Antonakis et al., 2011). Thus, the charisma and its effect on followers depend on the way leaders communicating vision, emotion, ideology, and values using those tactics.

The review above has led to the idea that charisma influences followers' perception and eventually improves performance. Charismatic leaders exhibit non-verbal and verbal tactics that influence followers to perceive charisma. In addition, those non-verbal and verbal tactics improve leaders' effectiveness in sharing their vision, ideology, and values. Therefore, charismatic leaders potentially change followers' perception and improve their performance.

Voice Pitch and Leadership. As discussed earlier, leader's voice or vocal characteristics may have a role on a leader's charisma and followers' performance. A recent study has shown that voice cues were used by individuals to detect social hierarchy (Ko, Sadler, & Galinsky, 2015). The authors also suggest that future research should consider the effect of voice in a group setting. Moreover, in the early study Galinsky and Kilduff (2013) noted that voice can be used to indicate power. This sheds light on the upcoming research idea that voice pitch should be considered as an important variable in the study of leadership.

Voice characteristics arguably influence followers' perception in determining the leader in their cohort group. A number of studies suggested that differences in voice character had significant influence on the way followers perceived leadership (Cartei, Bond, & Reby, 2014; Klofstad et al., 2012; Mayew et al., 2013). The way a leader presents her/ his speech to followers also contributes change to their followers' attitudes and behaviors (Frese et al., 2003; Signorello, D'Errico, Poggi, & Demolin, 2012). The vocal characteristics are is important because it changes the way followers perceive their leader.

In terms of follower's preference and the way followers perceive leadership effectiveness, certain vocal characteristic have more advantages over the other (DeGroot et al., 2011). In addition, DeGroot and colleagues contended that certain vocal characteristic may have change follower's perception about the leadership effectiveness. The effect of vocal characteristic such as voice pitch might have been one of the important components on how followers perceive a true leader.

Furthermore, voice pitch varieties have significant influence on the way followers perceive their leader. For example, Anderson and Klobstad (2012) suggested that male and female leaders with lower-pitched (i.e., masculine) voices were generally preferred as a leader by both men and women respondents. Additionally, the lower-pitched female voice was more preferred as a leader rather than higher-pitched female.

In addition, the effect of voice pitch was also found in various research designs. For example, in an experimental scenario, the participants prefer lower-pitched voices to high-pitch voices (Tigue, Borak, O'Connor, Schandl, & Feinberg, 2012). In a business setting, managers with low voice pitch were more likely managing larger companies, and as a result, have higher income (Mayew et al., 2013). This finding suggests that subordinates perceived the lower-pitched leader as more preferable as a leader and gave the leader more opportunity to lead (Mayew et al., 2013).

Furthermore, Klobstad and others (2012) contend that men and women with lower-pitched voices might be more successful in obtaining top positions. This finding is similar with Anderson and Klobstad (2012) where participants preferred lower voice pitch for both male and female manager. However, male voice has lower pitch than most female voices and as a result, male might sound more leader-like than female. The effect of voice pitch might have moderated and influenced the way people perceive charisma and eventually change attitudes and enhance follower's performance.

Number of studies found that certain voice characteristics are associated with followers' leadership perception or influence the followers' attitude toward leaders. Signorello, D'Errico, Poggi, and Demolin, (2012) postulate that the perception of charisma may change due to the acoustic and pitch contour characteristics of speech. This

research sheds light on the effect of certain voice pitch (i.e. low vs. high) on the way followers perceive charismatic style. In order to understand this relationship, the charismatic style of leader also must be studied subsequently with follower's perception and attitude.

As mentioned earlier, voice pitch has robust effects on follower's perceptions towards a leader. In terms of leadership, the study of voice pitch will lead to understand better the leader-follower relationship. Speech is the way a leader directs group and pursues goals while voice is an important component in the speech. Further investigation on the effect of voice pitch on leader-follower interaction is necessary for both science and practice.

Information Richness and Leadership. Charismatic leaders communicate vision and mission to their followers (Frese et al., 2003; Holladay & Coombs, 1994; Kirkpatrick & Locke, 1996). Traditionally, this communication process is performed by a leader through face-to-face interaction (Savolainen, 2014) where followers perceive rich information from the leader. Moreover, the use of technology (e.g. video and audio devices) to communicate vision to followers requires extra effort because of the absence of physical presence, missing body language and gestures (Savolainen, 2014).

The challenge that leaders must face is the varieties of information technology and this leads to the emergence of e-leadership (Avolio & Kahai S., 2003). Leaders should be able to communicate their visions and express their leadership through numerous available media (audio or video). However, the information carried by different media might have different amount of richness such as video has richer information than audio (Daft & Lengel, 1994).

The information from a leader is considered rich if the information potentially carrying capacity of data (Daft & Lengel, 1984). In addition, Daft and Lengel argue that face-to-face interaction is richer than telephone interaction. They added that the face-to-face interaction has richer information because it provided immediate feedback, delivered with audio and video channel, and contained body language. Thus, media with lower richness only processes few cues and restricts feedback (Daft & Lengel, 1994). Additionally, communicators will prefer media that gives them rich information especially when they face an equivocal task and low degree of trust (Lo & Lie, 2008).

In terms of leadership, a leader also delivers his/ her messages through various delivery methods (e.g. Audio and Video). The delivery method of charisma influences how people perceive leader's charisma and effectiveness (Awamleh & Gardner, 1999). In their study, Awamleh and Gardner discovered that two delivery methods of charismatic speech (i.e. strong vs. weak) had main effects on perceived charisma and leader effectiveness. The "strong" style of delivery was characterized by the use of non-verbal components (e.g. gesture, eye contact, and facial expression) along with the verbal component (i.e. contents of speech). The results of this study also confirmed previous finding by Holladay and Coombs (1994) that strong style of delivery elicits the perception of charisma and leader effectiveness.

Awamleh and Gardner (1999) and Holladay and Coombs (1994) confirmed the effect of information richness (Daft & Lengel, 1984, 1987). Rich information potentially delivers more information to followers and influences their behaviors. Based on this review, the information richness depends on the delivery method used by leaders because

the richer delivery method the more information perceived by followers. Leaders with rich information delivery are able to deliver rich information of vision to their followers.

Furthermore, Purvanova and Bono (2009) found that the effect of transformational leadership on team performance was greater in virtual communication than in face-to-face communication. Although the face-to-face is richer than virtual communication, the advantage of using virtual communication is the leaders' messages and instructions are more available to the teams. As a result, virtual communication becomes richer source for the teams.

The Effect of Charisma, Voice Pitch, and Information Richness on Followers' Perceptions and Performance. Charismatic components lead followers to perceive their leader as more charismatic (Antonakis et al., 2011) and more effective during speech (Antonakis et al., 2012), which later can predict follower's performance (Kirkpatrick & Locke, 1996; Shamir et al., 1993; Shea & Howell, 1999). Therefore, charismatic leaders have the ability to change people's perception toward goal, communicate vision, and encourage followers to work on certain tasks. All these findings lead to the following hypothesis:

H1: leaders with a charismatic presentation as opposed to non-charismatic presentation will increase both participants' ratings of charisma and increase participants' performance.

Anderson and Klobstad (2012), Klobstad et al. (2012), Tigue et al. (2012) suggest that low voice pitch leaders are perceived as a more leader-like and hold higher position as a manager (Mayew et al., 2013). Followers prefer leaders with lower voice pitch to a leader with higher voice pitch regardless of their gender. In addition, the voice pitch can

also change people perception towards a leader (Signorello et al., 2012), influence rating of performance (DeGroot & Motowidlo, 1999) and elicit favorable attitude toward a leader (Martín-santana, Muela-molina, Reinares-lara, & Rodríguez-guerra, 2015). The vocal components were also trained to emerge charisma (John Antonakis, Fenley, & Liechti, 2011; Frese et al., 2003; Shea, 1999) where the lower voice pitch receives more favorable reaction (Martín-santana et al., 2015) perceived as leader-like and preferred (Anderson & Klofstad, 2012). Therefore, lower voice pitch will be perceived as more charismatic and eventually improve performance. This leads to the next hypothesis:

H2: lower voice pitch leads to higher ratings of both charisma and performance than the high voice pitch.

Awamleh and Gardner (1999) and Holladay and Coombs (1994) suggested that the strong delivery style (i.e. exhibiting both verbal and non-verbal components) of charisma has stronger effect on leader charisma and effectiveness. The use of video (i.e., watching and listening) has richer information than using audio format (Daft & Lengel, 1994). This suggests that watching and listening to a charismatic speech have more favorable effect on charisma than only listening to a charismatic speech. Followers perceive more charisma through strong delivery such as watching and listening to the leader charismatic speech. Consequently, the strong delivery elicits perceived charisma and latter improve follower performance. The result of this study leads to the next hypothesis:

H3: a strong delivery (video and audio) as opposed to weak information delivery (audio only) will elicit higher participant ratings of charisma and performance.

The aforementioned studies show that the vocal component of charisma is a determinant factor in leader charisma (Signorello et al., 2012). Additionally, charismatic leaders inspire and motivate people to accomplish a task (Bass, 1990). On the other hand, a number of studies have indicated that voice pitch changes the way followers perceived their leaders (Anderson & Klofstad, 2012; Tigue et al., 2012).

Given this point, voice pitch has been considered as an important component in forming charisma where the lower voice pitch is more preferred, associated with favorable attitude, and effective performance (Martin-Santana, et. al., 2015, DeGroot & Motowidlo, 1990). Charismatic tactics improve the rating of charisma and performances while the effect of captivating voice (i.e., lower voice pitch) enhances the non-verbal charismatic tactics. The non-verbal charismatic tactics are influenced by the leaders voice quality and having lower voice pitch favor the non-verbal tactics. Therefore, the combination of charismatic tactics (i.e., verbal and non-verbal) and lower voice pitch can increase the perceived charisma and performance. Therefore, it is plausible that charisma and voice pitch are interacted to influence performance and the perceived charisma. This proposes the following hypothesis:

H4: the interaction between leader charismatic presentation and lower voice pitch will lead to a greater impact on both leader perceptions and performance than just charisma and voice pitch alone.

As suggested earlier by Daft and Lengel (1984), Awamleh and Gardner (1999) and Holladay and Coombs (1993, 1994), the effect of charismatic message is stronger with strong delivery style as opposed to weak delivery (i.e. listening only to the content of the speech). In addition, voice also plays important role in forming leaders' charisma

(Signorello and colleagues, 2012) where the lower voice pitch has more advantages than high voice pitch (DeGroot, et. al., 2011). Therefore, exhibiting charisma with strong delivery style and lower voice pitch will bring positive effect on the rating of charisma and participant's performance.

H5: there is a three-way interaction of leader charisma, voice pitch, and information delivery style on predicting higher rating of charisma and participant performance.

Research Design. This study employed a 2x2x2 experimental design. The leader's charisma, voice pitch, and delivery style served as three independent variables. There are two conditions of the charisma (i.e. non-charisma and charisma) and two conditions of voice pitch (i.e. high voice and low voice pitch). The delivery styles are manipulated in two styles; video and audio delivery. Video delivery represents strong and richer information while audio delivery represents weak delivery. The dependent variables are perceived charisma and participant's task performance. Participants are randomly assigned into eight different groups; 1) charisma – high pitch – video delivery; 2) charisma – low pitch – video delivery; 3) non-charisma – high pitch – video delivery; 4) non-charisma – low pitch – video delivery; 5) charisma – high pitch – audio delivery; 6) charisma – low pitch – audio delivery; 7) non-charisma – high pitch – audio delivery; 8) non-charisma – low pitch – audio delivery).

Methods

Participants

Participants were 259 undergraduate at a large mid-Atlantic state university participated in the study for two course credits towards their research requirement for the introductory courses at the institution. Most participants were female (female= 185 and

male= 74) with age range from 18 to 31 ($mean= 19.76$, $SD= 2.25$). Participants were recruited online using SONA Psychology Participant Pool and randomly assigned to eight different experimental conditions.

Participants screening was performed using the Psychometric Synonym technique (Desimone, et al., 2015). The purpose of this screening technique is to detect participants who carelessly respond to the survey. We computed the inter-item correlations among all items in the survey to identify the item with coefficient correlation $r > .60$. The results yielded eight pairs of items that had coefficient correlation higher than $.60$. Then, we computed the correlation of the vector of responses to the first items in the set with the vector of responses to second items in the set.

We computed this procedure for each participant to produce screening index for each participants. The results showed the correlation coefficient between the first set and the second set of the vector. Finally, we used this correlation coefficient to make decision. We dropped 18 participants who had low screening index score $r < .22$ (Desimone et al., 2015). After dropping the participants, the number of participants in each condition ranged from 29 to 32 with a total 241 participants.

Procedure

The study was conducted in a single lab setting for each participant. In every trial, each participant started the study by signing an IRB approved consent form (see appendix A). Next, in a single lab section each participant logged in to survey link using a unique participation code. Researcher designed the survey using Qualtrics and embedded all the measures and stimuli.

Qualtrics randomly assigned each participant into eight different conditions. Immediately after the speech, participants responded to all items in the survey. For each

single trial, after the survey completed, researcher offered participants voluntarily to stuff the envelope for a children charity program (*Mike explained about the charity program and we are currently running that program now, would you like to stay few more minutes to help us stuffing envelope?*).

Participants who agreed to participate received both written instruction and demonstration on how to stuff the envelope and the materials (e.g. envelopes and letters). However, if participant opted not to participate, researcher debriefed the participant and she/he may leave the lab. Participants still received two credits regardless of their decisions.

The researcher provided an example on how to complete the entire task with systematic instruction after each participant read the written instruction (see appendix B). The instruction started with scanning the letter for any printing fault or error, folding the letter, and inserting the letter to an envelope with the letter title facing up. In addition, they were asked to separate letters with error from error-free letters. Each participant received 30 pairs of envelope and letter with five letters contained various printing faults. Participants performed the task for 25 minutes. They may stuff as many envelopes as they want within 25 minutes or drop the task at any time. In the end, researcher debriefed participant and thanked them for participating in the study. The researcher collected all the envelopes and immediately recorded the performance quantity and quality for each participant.

Each participant received exactly the same task. This study used task that is congruent with the content of the speeches. The letters need to be scanned for any printing faults, fold them, and stuff them into envelopes. In every trial, participant

received 30 envelopes, 30 letters and a pen. Participants were to scan the letters for any printing faults and then indicate the position of the faults by circling them with the pen. Participants then folded and inserted the letters into envelopes according to the instructions. All letters, including the letters with printing faults were to be folded. However, participants were instructed to separate letters with errors from the error-free letters.

There were six participants agreed to do the task but decided to stop working before the given time ended. These participants dropped out the task randomly across different conditions. Five of them dropped out between 13 to 18 minutes of the task and they only completed 8 to 18 letters. One participant dropped the task after five minutes working and only completed five letters. In addition, there were also seven participants did not complete the task within the given time and only completed 17 to 26 letters.

Manipulation Check

Participants completed a 10-item manipulation check questionnaire with five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). This questionnaire consists of six-item voice quality scale (e.g. pronounces all of the words clearly), two-item perceived voice pitch scale (e.g. speaks with low voice pitch) and two-item perceived charisma scale (e.g. appears more like a charismatic leader) with reliability .87 Cronbach's alpha. The manipulation check questionnaire provided information whether or not the participants perceived the manipulations as intended.

Independent Variables

Leadership Style (Charisma vs. Non-Charisma)

The researcher used the same video of charismatic and non-charismatic speeches, which have been constructed and used by Antonakis, d'Adda, Weber, and Zehnder (2015). The charismatic speech was created according to the nine verbal charismatic tactics (i.e. metaphors, rhetorical questions, stories and anecdotes, contrasts and comparison, using lists, expressing moral conviction, expressing the sentiments of the collective, setting high and ambitious goals, creating confidence goals can be achieved) and three non-verbal tactics including the use of body gestures, facial expressions, and animated voice tone (Antonakis et al., 2011; Jacquart & Antonakis, 2015).

According to Antonakis and his colleagues (2015), the two speeches are very similar in terms of word quantity and content. The same actor performed both charismatic and non-charismatic speeches. The both speeches intend to brief the audience on the importance of the children charity program. However, the non-charismatic speech does not possess charismatic components but still shows good use of rhetorical techniques. For example, the spokesperson provided adequate eye contact and congruent body language. Based on the objective and subjective manipulation check the charismatic speech was significantly different from non-charismatic speech on both verbal and non-verbal tactics (Antonakis, et al., 2015).

In particular, the charismatic speech makes extensive use of charismatic elements; metaphors (“in a way, the letter is a ticket for a kid to attend Christmas”), stories and anecdotes (“it reminds me of a story of an old man”), contrasts (“you are not just stuffing envelopes to earn money, you are stuffing envelopes to help sickly kids too”), rhetorical questions (“what must that be like?”), three-part lists (“work hard, work smart, and think of the kids”), sentiments of the collective (“so you might think, well, I will just do what I

have to—will my extra effort really help?”), confidence that goals can be achieved (“will my extra effort really help? Yes, it will!”), and non-verbal techniques (i.e. facial expressions, gestures, and voice variation). For more detail about the speeches, please see Antonakis, d’Adda, Weber, and Zehnder (2015).

Voice Pitch (Low vs. High)

Voice pitch is the average fundamental frequency over an entire speech sample and it shows how high and low a voice is (DeGroot & Motowidlo, 1999). The average man’s voice pitch is lower than the average women’s voice pitch. The habitual average pitch is 128 Hz for most male voices and 225 Hz for most female voices (Boone, 1977). In a previous research, DeGroot and Motowidlo (1999) lowered voice pitch by subtracting 97 pitch points from all high voice pitch (i.e. women voice). It suggests that there is a 97-point difference between low and high voice on average. Similarly, this study increased the speaker voice pitch (i.e. men voice pitch) by adding 97 points pitch to the average male spokesperson’s voice pitch.

Voices from the two speeches were separated and analyzed using *praat 5.3.56*. (DeGroot et al., 2011; DeGroot & Motowidlo, 1999; Maryn & Weenink, 2015; Saxton, DeBruine, Jones, Little, & Roberts, 2013). The pitch analysis showed that the both speeches (i.e., charismatic and noncharismatic) initially have the average of 131.42 Hz and 129.32 Hz for the charismatic speech and the non-charismatic speech respectively. Both original speeches have lower average voice pitch than womens’ average voice pitch (i.e. 225 Hz). The researcher manipulated both speeches by increasing 97 Hz average pitch from the initial speeches. As the results, the manipulated charismatic and non-charismatic speeches have 228.09 Hz and 226.18 Hz average pitch respectively.

Information Delivery (Strong/ Rich vs. Weak/ Poor Delivery)

There will be two information delivery styles, one with strong delivery style, and another with weak delivery style. According to Awamleh and Gardner (1999) strong delivery style exhibits fully verbal and non-verbal components of charisma. In contrast, the weak delivery only exhibits part of the components. Therefore, in order to manipulate the delivery style, the speeches presented in two different conditions. In one condition, the speeches were presented with audio-visual (i.e., video) where participant will completely perceive both the content and non-verbal components of the speech. In another condition, the participant will only listen to the content of the speech (i.e., audio). The audio format eliminated most of non-verbal components of the speech (e.g., gesture).

Dependent Variables and Measures

Leader Charisma

Leader charisma is a participant's perception on how charismatic the spokesperson in the video or the audio. Each participant rated the speech after either watching or listening to the speech. In order to rate the perceived charisma, participants completed the Multifactor Leadership Questionnaire (MLQ). The Multifactor Leadership Questionnaire (MLQ) consisted of idealized influence (attributes), idealized influence (behaviors), and inspirational motivation scales (Avolio et al., 1999; Avolio, Bass, & Jung, 1995) and it has been widely used to measure charisma. The example of the items is "instill pride in others for being associated with them" and "Display a sense of power and confidence."

Participants rated the spokesperson charisma using the Multifactor Leadership Questionnaire (MLQ) on a five-point Likert-type scale ranging from 1 (not at all) to 5

(frequently, if not always). The questionnaire has been re-examined by Avolio, Bass and Jung (1999) yielding charisma as a single factor. Antonakis, et al. (2011, 2015) used the 12-item charisma subscale to measure the perceived charisma. In this study, the reliability test of 12-item MLQ yielded .89 Cronbach's alpha, which indicated that the 12-item charisma was a reliable scale.

Task Performance

Participants' performances were measured using the quantity, quality, and the total of task performance. As mentioned earlier, the task was to scan the letters for printing fault, fold them, and insert them into envelopes. The task quantity is the number of envelopes stuffed by participant within 25 minutes and the task quality is the degree of quality of each letter stuffed into an envelope.

The number of completed envelopes for each participant indicates the performance quantity. Each completed envelope received a four-point performance score regardless the quality of the work. For the quality measure, there are four indicators that determine the quality; 1) the letter has either no printing faults or indicated position of the fault in the letter (if any), 2) folding the letter according to the instruction, 3) inserting the letter to the envelope with right position, and 4) overall quality point for satisfying all three quality indicators. Participants will be given quality scores based on these indicators. Each stuffed envelope that had these indicators received a four-point quality score in addition to the quantity score.

Therefore, for each stuffed envelope, a participant could receive four quantity points and four quality points. The total performance was the sum of total quantity and total quality points. The highest total performance score for each completed envelope was

eight and the lowest score was four. For instance, if participants completed all envelopes without any errors, they received a 240-point total performance score.

Most participants completed the task in 25 minutes (15%). However, there were 52 (20%) participants randomly across different condition refused to take the task due to various reasons (e.g., I have something to do, I have a class). The correlations of the quantity-quality, quantity-total performance, and quality-total performance were $r = .97, p < .001$, $r = .99, p < .001$, and $r = .99, p < .001$, respectively. Participants' total performance was generated by summing the quantity and quality scores. Therefore, the total performance score was arguably the most representative score for overall participants' performance across various experimental conditions.

Results

Analysis of manipulation check items was done first to ensure participants experienced manipulations as intended. The three-way ANOVA using Manipulation Check composite scores as the dependent variable yielded significant main effects for the leader speeches ($F = 7.04, p < .01$), voice pitch ($F = 34.63, p < .001$), and the information delivery ($F = 5.14, p < .05$). Thus results showed that all manipulations were perceived by participants as intended.

Correlations among dependent variables as well as the means and standard deviations for each dependent variable were computed next. Hypotheses were tested using 2 (total performance, MLQ) three-way (charisma X voice pitch X information richness) univariate analysis of variance (ANOVA). Separate three-way ANOVA were conducted for charisma rating and participants' total performance as dependent variable.

The three-way ANOVA yielded main effects, two-way interaction, and three-way interaction. All study's hypotheses will be addressed according to the results.

Table 1 shows the means, standard deviations, and correlations among manipulation check, the screening index (psychometric synonym score), and dependent

Table 1
Correlations among Dependent Variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Manipulation Check	37.62	8.27	1					
2 Screening Index	.71	.24	.06	1				
3 Charisma Rating	46.59	9.45	.60***	.10	1			
4 Performance Quantity	92.17	48.66	.04	-.02	.04	1		
5 Performance Quality	83.85	45.89	.04	-.03	.05	.97***	1	
6 Total Performance	176.02	93.85	.03		.05	.99***	.99***	1

variables (i.e., charisma rating, performance quantity, performance quality, and total performance). The manipulation check was significantly correlated with the charisma rating ($r = .60, p < .001$) but not with the screening index ($r = .06, p > .05$) and all performance variables (quantity $r = .04$, quality $r = .04$, and total performance $r = .03$). The results suggested that manipulation check and charisma rating were related. This suggests that the conditions perceived by participants influenced participants' rating of charisma but not their performances.

Moreover, the screening index yielded no significant correlations with other variables (i.e., charisma rating $r = .10, p > .05$; performance quantity $r = -.02, p > .05$; performance quality $r = -.03, p > .05$, total performance $r = .03, p > .05$). This suggests that

the index we use to screen participants is not related to the variables in the study. Thus, we were sure that we only dropped participants solely based on their screening index.

Table 1 also shows that the average rating for the leaders' charisma was relatively high ($M= 46.59, SD= 9.45$) across conditions. However, the rating of charisma yielded low and non-significant correlation with performance quantity ($r= .04, p> .05$), performance quality ($r= .05, p> .05$), and total performance ($r= .05, p> .05$). The total performance correlated positively and significant with both performance quantity ($r= .99, p< .001$) and performance quality ($r= .99, p< .001$). Performance quantity was also significantly correlated with performance quality ($r= .97, p< .001$).

The next step of the analysis was to test all study hypotheses. The factorial ANOVA was conducted to compare the main effects and interaction effect of leadership

Table 2
Univariate ANOVA analyses for Charisma Rating and Total Performance

	<i>df</i>	Charisma Rating		Total Performance	
		<i>Mean Square</i>	<i>F</i>	<i>Mean Square</i>	<i>F</i>
Leadership	1	1001.76	12.17**	3008.96	.34
Pitch	1	1060.61	12.89**	9190.84	1.05
Information	1	185.88	2.26	13.56	.01
Leadership x Pitch	1	4.11	.05	269.96	.03
Leadership x Information	1	7.72	.09	6624.47	.76
Pitch x Information	1	1.04	.01	10127.10	1.16
Leadership x Pitch x Information	1	.26	.01	38595.16	4.41*

Note: $N= 241, *p< .05, **p< .001$

styles, voice pitch, and information richness on charisma rating and total performance.

Two separate three-way ANOVA analyses were conducted for each charisma rating and total performance. Table 2 shows the results of the two separate three-way ANOVA.

The first three-way ANOVA was conducted on the influence of the three independent variables (leadership styles, voice pitch, and information richness) on the rating of charisma. The second three-way ANOVA was conducted on the influence of the same independent variables on participants' total performance. Each independent variable consisted of two levels. Leadership style included two levels (charisma, non-charisma), voice pitch two levels (low, high) and information richness two levels (audio, video). Table 2 summarizes the results of three-way ANOVA for both charisma rating and total performance as dependent variables. In addition, the differences between means and standard deviation for each condition were presented in table 3.

In the first hypothesis, charismatic speech as opposed to non-charismatic speech will increase participant rating of charisma and improve performance. Based on the analysis, the main effect of the leadership (charisma, non-charisma) on the rating of the MLQ yielded an F ratio of $F(1, 233) = 12.17, p < .001$. This indicated a significant difference between charismatic leader condition ($M = 48.69, SD = 8.44$) and non-charismatic leader condition ($M = 44.59, SD = 9.98$). Thus, those exposed to the charismatic conditions rated charisma higher overall, supporting hypothesis 1.

The main effect of leadership on performance did not yield significant results. The results showed $F(1, 233) = .34, p > .05$, which indicated no significant difference between charismatic leader condition ($M = 172.62, SD = 97.04$) and noncharismatic condition ($M = 179.92, SD = 90.61$) on performance. The effect of charisma on

performance was not supported. Thus, although we find ratings and perceptions change due to charisma, performance did not, partially supporting hypothesis 1 overall.

Table 3
Means and Standard Deviations for Charisma and Total Performance in Leadership, Voice Pitch, and Information Richness conditions

Leadership Style	Charisma Rating		Total Performance		N
	M	SD	M	SD	
Non-Charisma					
High					
Audio	43.81	9.06	186.09	87.34	32
Video	41.50	9.64	158.77	101.19	30
Across information richness conditions	42.69	9.34	172.87	94.52	62
Low					
Audio	47.55	10.84	162.28	102.76	29
Video	45.63	9.89	211.53	59.48	30
Across information richness conditions	46.58	10.33	187.32	86.51	59
Across voice pitch conditions					
Audio	45.59	10.04	174.77	94.93	61
Video	43.57	9.91	185.15	86.49	60
Across information richness conditions	44.59	9.98	179.92	90.61	121
Charisma					
High					
Audio	47.21	8.83	166.31	99.77	29
Video	45.74	8.90	168.65	101.99	31
Across information richness conditions	46.45	8.82	167.52	100.07	60
Low					
Audio	51.60	5.55	188.90	84.77	30
Video	50.27	9.01	166.53	103.51	30
Across information richness conditions	50.93	7.45	177.72	94.48	60

Note: M= mean, SD= Standard Deviations, N= number of participant

Table 3 *continued*

Leadership Style	Charisma Rating		Total Performance		N
	M	SD	M	SD	
Across voice pitch conditions					
Audio	49.44	7.61	177.80	92.35	59
Video	47.97	9.17	167.61	101.89	61
Across information richness conditions	48.69	8.44	172.62	97.04	120
Across Leadership Conditions					
High					
Audio	45.43	9.04	176.69	93.20	61
Video	43.66	9.44	163.79	100.87	61
Across information richness conditions	44.54	9.25	170.24	96.93	122
Low					
Audio	49.61	8.74	175.81	94.19	59
Video	47.95	9.67	189.03	86.72	60
Across information richness conditions	48.77	9.22	182.48	90.36	119
Across voice pitch conditions					
Audio	47.48	9.10	176.26	93.29	120
Video	45.79	9.76	176.31	94.58	121
Across information richness conditions	46.63	9.45	176.28	93.75	241

Note: *M*= mean, *SD*= Standard Deviations, *N*= number of participant

In the hypothesis H2, we expected that lower voice pitch would have a greater effect on rating of charisma and performance than the higher voice pitch. The results showed significant main effect of voice pitch on participants' rating of charisma with $F(1, 233) = 12.89, p < .001$, but not for participants' total performance ($F = 1.05, p > .05$).

These results suggested that rating of charisma was significantly different between low pitch condition ($M= 48.77, SD= 9.22$) and high pitch condition ($M= 44.54, SD= 9.25$).

In contrast, significant difference between low pitch ($M= 182.48, SD= 90.36$) and high pitch condition ($M= 170.24, SD= 96.93$) was not found for participants' performance. The hypothesis H2 was half confirmed as the results only showed significant main effect of voice pitch on charisma but not for the total performance. This suggests that the participants rated low voice pitch leader as more charismatic than leader with high voice pitch. However, the effect of voice pitch did not influence performance.

Hypothesis H3 suggested that a strong delivery (video) as opposed to weak delivery (audio only) would elicit higher participant ratings of charisma and performance. The results yielded non-significant main effect of information richness on charisma rating ($F= 2.26, p> .05$) and participants' performance ($F= .01, p> .05$). The difference between video and audio for both charisma rating and participants' performance was not significant. The results suggested that the rating of charisma and participants' total performance were equal across different information richness.

In the next following hypothesis, the study hypothesized that there was an interaction between charisma and voice pitch on predicting higher ratings of charisma and performance. However, the study found non-significant results for leadership x voice pitch on predicting rating of charisma with $F(1, 223)= .05, p> .05$ and participants' performance with $F(1, 223)= .03, p> .05$. Based on these results, this study did not find any interaction between leadership condition (charisma, non-charisma) and different voice pitch (low, high) in predicting rating of charisma and performance.

In the last hypothesis (H5), this study suggested a three-way interaction of charismatic speech, information delivery style, and voice pitch on predicting higher rating of charisma and participant performance. Based on the analysis, the three-way interaction for charisma rating yielded $F(1, 223) = .26, p > .05$, which concluded that three-way interaction did not influence the participants' rating of charisma. As can be seen in the table 3, the interaction of leadership style (noncharisma, charisma), voice pitch (low, high) and information delivery (video, audio) did not significantly influence the means of rating.

The results were different with the three-way interaction for the performance. The results yielded $F(1, 233) = 4.41, p < .05$ for the effect of leadership, voice pitch and information delivery on participants' total performance. Based on Bonferroni post hoc test, the difference between non-charisma x low pitch x video and non-charisma x low pitch x audio was statistically significant ($MD = 49.26, p < .05$).

Table 4 provides mean comparisons across the conditions. Participants who received non-charismatic speech and low voice pitch through video delivery (richer information) had the higher total performance ($M = 211.53, SD = 59.48$) than participants who received the same condition through audio delivery ($M = 162.28, SD = 102.76$). The results confirmed the second part of the last hypothesis where the three-way interaction influenced the participants' total performance. However, the results showed non-significant three-way interaction for the rating of charisma.

Table 4
Mean Comparisons Across Conditions for Participants' Total Performance

Leadership	VP	ID (I)	ID (J)	<i>M</i>	<i>MD (I-J)</i>
Noncharisma	High	Audio	Video	186.09	30.13
		Video	Audio	158.77	-30.13
	Low	Audio	Video	162.28	-49.26*
		Video	Audio	211.53	49.26*
Charisma	High	Audio	Video	166.31	-2.33
		Video	Audio	168.64	2.33
	Low	Audio	Video	188.90	22.37
		Video	Audio	166.53	-22.37

Note: VP= voice pitch, ID= Information Delivery, *M*= mean, and *MD*= mean differences, **p*< .05, *N*= 241

In the non-charismatic leader condition, performance was higher with the combination of low voice pitch and video delivery. In contrast, in charismatic leader condition, presenting leader with low (or high) voice pitch and video (or audio) delivery did not result in significant influence on performance.

Discussion

Based on previous research and leadership theory (Bass, 1985; Elgar, 2016; Fiedler, 1978; Foldy, 2009; Hersey & Blanchard, 1977; Hutton, 2013; Kis & Konan, 2014; Mumford et al., 2007; Northouse, 2010; Ospina & Re & Rule, 2016;), this study attempted to investigate the effect of charisma, leader's voice pitch, and information richness on followers' perception and performance. Although leadership can be studied in

both the lab and field settings, using an experimental design here allowed us to investigate the separate and interactive effects of these variables on both leadership perceptions and follower performance. Overall, findings showed mix results, whereby leadership perceptions were more affected by our independent variables and performance measures not impacted.

The first hypothesis posited that leaders with charismatic speech as opposed to non-charismatic speech would increase participant ratings of charisma and improve performance. The results confirmed the first part of the hypothesis where the charismatic leader speech increased participants' ratings of charisma. However, the charismatic condition did not influence participants' performance significantly over the non-charismatic condition. This finding suggested that possessing charismatic leadership components increase the chance of being perceived as more charismatic by followers.

Bass (1990) defined charisma as to which a leader performs in an admirable manner, utilizes a clear set of values, and acts as a role model for others. Moreover, charismatic components lead followers to perceive their leader as more charismatic (Antonakis et al., 2011) and more effective during speech (Antonakis et al., 2012). This finding is in line with the previous studies about the charismatic leadership (Antonakis et al., 2011; Antonakis et al., 2012; Bass, 1990). The possession of the components of charisma (Antonakis et. al., 2011), such as nine verbal charismatic tactics (e.g., metaphors, rhetorical questions, stories) and three non-verbal tactics (e.g., the use of body gestures), influences followers to perceive the leader as more charismatic leader.

In contrast, the results did not support the main effect of charisma on followers' performance. In the previous study, a number of studies has supported that followers

performed better or higher under the influence of charismatic leaders (Avolio et al., 2002; Kirkpatrick & Locke, 1996; Shamir, House, and Arthur, 1993; Shea, 1999) and currently Antonakis and his colleagues (2015) also found similar results. The way participants perceived the complexity of the task could have influenced the effect of charisma on their performance. The effect of different levels of tasks was not the main concern of the previous study. However, different levels of complexity may have influenced the effect of charisma on performance (Johnson & Dipboye, 2008).

Johnson and Dipboye (2008) argued that charisma might not improve participants' performance if they perceived the task as less complex and low in creativity. In other words, charisma significantly influences performance if followers perceive the task as complex and challenging for their creativity. In this study, participants could have perceived the stuffing envelope task as less challenging and less creative activity. Thus, the effect of charisma did not significantly influence the increase of participants' performance.

The second hypothesis suggested that lower voice pitch has greater effect on charisma rating and performance than the high voice pitch. The results showed only the main effect of voice pitch on the rating of charisma, voice pitch did not influence participants' performance. In detail, the results suggested that the lower voice pitch increased the participants' rating of charisma. Participants perceived the leader with lower voice pitch as more charismatic than the leader with high voice pitch.

Leaders with low voice pitch were not only perceived as more leader-like (Anderson & Klofstad, 2012; Klofstad et al., 2012) and hold higher position (Mayew et al., 2013), but they also received favorable rating as more charismatic. The voice

component (i.e., pitch) is the element of emerging charisma among leaders (Antonakis, Fenley, & Liechti, 2011; Frese et al., 2003; Shea, 1999) and leaders with lower voice pitch receives more favorable reactions (Martín-santana et al., 2015) and perceived as leader-like and preferred (Anderson & Klofstad, 2012).

Results supported the second hypothesis in terms of the effect of low voice pitch on charisma rating. However, leaders' voice pitch did not influence participants' performance. Although the previous studies supported the advantage of lower voice (DeGroot & Motowidlo, 1999) and encouraged followers to perform favorable action (Tigue et. al., 2012), this study did not find similar results. Participants' performances were not influenced by the leader's voice pitch. Low or high voice pitch influenced followers' perception toward their leader, but it does not encourage people to perform better.

The third hypothesis posited that richer information would increase rating of charisma as well as improving participants' performance. However, the results did not yield any the main effect of information richness on the rating of charisma and participants' performance. It means, the results did not confirm the third hypothesis.

Earlier, this study suggested that richer information delivery such as the use of video would do better at carrying the effect of charisma and leadership in general. In line with Daft and Lengel (1994), watching and listening (e.g., video delivery) had richer information effect on targets. Therefore, watching a charismatic speech has greater effect on followers' rating of charisma and performance (Awamleh & Gardner, 1999; Holladay & Coombs, 1994). However, the results did not confirm these previous studies. The degree of information richness does not hold any significant effects on perceived

charisma or followers' performance. In short, this study suggests that charismatic components lead to perceptions of a leader as more charismatic, but these do not lead to increases in performance. Interactions between leader charisma and voice pitch in predicting higher charisma rating and participants' were also not supported.

Charismatic leaders have the ability to articulate visions and motivate their followers to perform, and as a result their followers improve their performance (John Antonakis et al., 2011; Kirkpatrick & Locke, 1996; Shamir et al., 1993; Shea & Howell, 1999). One of the important component of charisma is captivating voice tone (John Antonakis et al., 2011; Frese et al., 2003) and lower voice pitch leader perceived as more captivating and received more favorable reactions from followers (Anderson & Klofstad, 2012; C. a. Klofstad et al., 2012; Tigue et al., 2012).

The previous results confirmed that charisma and lower voice pitch influenced participants' perception and eventually perceived leaders as more charismatic. Although the previous finding supported the first two hypotheses, the interaction between charisma and voice pitch did not occur. Participants might have perceived the captivating voice based on various vocal attributes (DeGroot et al., 2011) and not merely on voice pitch. This study only examined the interaction of voice pitch with charisma as these two variables supporting each other to form participants' favorable reactions.

However, lower-pitched leaders are more effective because people perceived them as stronger, having greater physical prowess, and more competent, reliable, and having greater integrity (Anderson & Klofstad, 2012; Klofstad, Anderson, & Nowicki, 2015; Tigue et al., 2012). Hypothetically, the lower-pitched leaders can enhance the perceived leadership effectiveness (DeGroot et al., 2011). This perceived leadership

effectiveness may interact with perceived charisma, but participants' perception may change due to other attributes such as implicit leader theory (Engle & Lord, 1997; Epitropaki & Martin, 2005).

In brief, the interaction of the leader charisma and lower voice pitch does not merely depend on the level of voice pitch or the degree of leaders' charisma. Other attributes and the participants' implicit leader theory can determine the way participants perceived the leaders. Therefore, the effect of interaction between charisma and voice pitch on the charisma rating and performance yielded non-significant results.

The last hypothesis (H5) suggested that the three-way interaction of leader charisma, voice pitch, and information delivery style would predict significant rating of charisma and participants' performance. The results only supported half of the hypothesis, the three-way interaction of charisma, voice pitch, and information delivery only predicted participants' overall performance. The three-way interaction did not exist for the charisma rating. Meaning, leader charisma, voice pitch, and information richness influenced the overall performance but brought non-significant effect to participants' rating of charisma. Furthermore, the results also yielded higher performance mean for those who exposed with non-charismatic low-pitched leader through video (richer information).

As mentioned earlier, the effect of charismatic message is stronger with richer or strong information delivery (Awamleh & Gardner, 1999; Daft & Lengel, 1984, 1994; Holladay & Coombs, 1994). In addition, captivating voice and leaders' voice quality determines their perceived charisma by followers (Antonakis et al., 2011; Frese et al., 2003; Signorello et al., 2012) and lower voice pitch has more advantages than high voice

pitch (DeGroot, et. al., 2011). Although no main effects of these variables on performance, the interaction among these variables significantly predicted performance.

Although previous findings consistently supported the effect of charisma on followers' performance, the effect could also interact with the leaders' pitch and information richness. The lower voice pitch and richer information through video delivery emphasized the influences of certain leadership styles on performance. Therefore, interaction feasibly occurred to increase performance.

Note, the low-pitched voice, and richer information emphasize the effect of leaders on followers' performance. Since no main effects found on the effect of leadership style (charisma vs. non-charisma) on performance, the less complex task triggered the effect of non-charismatic leader effect on performance (Johnson & Dipboye, 2008). This particular effect, then, was interacted with lower voice pitch and richer information delivery resulting higher participants performance. The effect of charismatic leader could have yielded the highest performance score, if the task were complex, more creative, and challenging for participants.

The stuffing envelope task was designed based on the previous study (*see* Antonakis, et. al., 2015) where the authors found the effect of charisma on performance. Moreover, if the effect of charisma improved the workers' performance, meaning the tasks used in the experiment fulfilled the criteria of charisma-conducive task (Johnson & Dipboye, 2008). Unlike the workers, participants in this study were undergraduate students. It is plausible that the participants perceived the letter task easier, less complex, and well structured. As a result, participants in the non-charisma condition performed higher than in charisma condition and this is in line with Johnson & Dipboye (2008).

Limitations and Future Directions

This study intended to investigate the effect of charisma, voice pitch, and information richness on perception and performance. Numerous studies suggested the positive effect of charisma on followers' performance. However, the similar results were not found in this study due to the effect of task varieties, which might moderate the effect. This study did not consider different level of task complexity. Our participants perceived the task easier than we expected which created ceiling effect on the performance scores. Future studies should consider this variable in order to understand the effect of leadership styles on different type of task.

Second, the results suggested a three-way interaction on the effect leadership style, voice pitch, and information on performance. However, the interaction supported the effect of non-charisma, low voice pitch, and richer information delivery. The future study should consider the level of task complexity and the effect of similar interaction. The question that needs to be answered is whether the change of task complexity will also change the interaction.

Third, in terms of application, many previous findings suggested the effect of charisma on perceived charisma and performance. Similar to this study, those studies were conducted in lab settings. However, some studies were also conducted in real work settings. The effect found in this study such as the three-way interaction should be tested in a real work setting. Transferring the study to different context may ensure the robustness of findings.

Conclusion

This study aimed to investigate the effect of charisma, voice pitch and information richness on followers' perception and performance. The results suggested that charisma components and lower voice pitch have main effect on the rating of charisma. In addition, the three-way interaction of leader charisma, voice pitch, and information richness influenced followers' performance. The interaction of non-charisma, lower voice pitch, and richer information delivery yielded the highest performance score. This study has some limitations that need to be addressed in the future studies. In the future, various task complexity, experiment contexts, and other variables may enrich the validity of the study.

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APPENDIX A



**MONTCLAIR STATE
UNIVERSITY**

*College of Humanities and Social Sciences,
Department of Psychology
Voice: 973-655-5201*

CONSENT FORM FOR ADULTS

Please read below with care. You can ask questions at any time, now or later. You can talk to other people before you sign this form.

Study's Title: Program Evaluation of a Social Marketing Campaign

Why is this study being done? This study is to better understand how people make judgments about campaign and commercial asking for charitable donations.

What will happen while you are in the study? You will watch a video or listen to an audio of a manager explaining his marketing campaign. You will take an online survey after watching the video or listening to the audio. After the survey, if you wish, you could participate in an activity related to the marketing campaign.

Time: This study will take about 60 minutes

Risks: We do not anticipate any greater risk than that which is ordinarily encountered in everyday life. However, there is minor risk of boredom or fatigue.

Benefits: You may benefit from this study by gaining improved insight into scientific practices in the social sciences. Others may benefit from this study based on the knowledge gained as a result of this study.

Compensation: To compensate you for the time you spend in this study, you will receive two research credits through Sona.

Who will know that you are in this study? You will not be linked to any data collected here. We will keep who you are confidential.

Do you have to be in the study? You do not have to be in this study. You are a volunteer! It is okay if you want to stop at any time and not be in the study. You do not have to answer any questions you do not want to answer. Nothing will happen to you. Your credit for the course will not be affected.

Do you have any questions about this study? Phone or email Principal Investigator, Hillman Wirawan at 862-333-6087 or wirawanhl@montclair.edu or the Faculty Sponsor, Dr. Kenneth Sumner, at 973-655-5397 or sunmerk@mail.montclair.edu

Do you have any questions about your rights as a research participant? Phone or email the IRB Chair, Dr. Katrina Bulkley, at 973-655-5189 or reviewboard@mail.montclair.edu.

Future Studies

It is okay to use my data in other studies:

Please initial: _____ Yes _____ No



MONTCLAIR STATE
UNIVERSITY

College of Humanities and Social Sciences,
Department of Psychology
Voice: 973-655-5201

One copy of this consent form is for you to keep.

Statement of Consent

I have read this form and decided that I will participate in the project described above. Its general purposes, the particulars of involvement, and possible risks and inconveniences have been explained to my satisfaction. I understand that I can withdraw at any time. My signature also indicates that I am 18 years of age or older and have received a copy of this consent form.

Print your name here

Sign your name here

Date

Name of Principal Investigator

Signature

Date

Name of Faculty Sponsor

Signature

Date



DEBRIEFING CONSENT FORM

Thank you for participating in this study.

Please read below with care. You can ask questions at any time, now or later. You can talk to other people before you fill in this form.

Study's Title: Program Evaluation of a Social Marketing Campaign

When you consented to participate in our study, we described its goal as the following:

This study is to better understand how people make judgments about campaign and commercial asking for charitable donations.

The PI can give you the complete original consent document to read again, if you have questions about it.

We did not fully disclose our true purpose when we told you this, as an essential part of studying something else. What we were truly interested in was the effect of leader characteristics on evaluation and behavior in the marketing campaign.

This incomplete disclosure was necessary because it is necessary for the study to collect participant perceptions toward the leader without being contaminated by the participant prior knowledge or experience.

What about the risks & benefits described in the original (deceptive) consent document?

All of the risks and benefits described in the original consent are still present in the real study. You may benefit from this study by gaining improved insight into scientific practices in the social sciences. Others may benefit from this study based on the knowledge gained as a result of this study.

There are not additional risks and/or benefits that you could be informed about, at the time you originally consented.

Risks you weren't told about before:

There are no risks, in addition to those discussed above, in the real study.

Benefits you weren't told about before:

There are no benefits, in addition to those discussed above, in the real study.

Can I leave the study now, even though I've already been a participant?

Yes, you can always leave the study and have your data removed from the study. This debriefing consent form is giving you the opportunity to choose whether you want to participate, now that you know the real reasons why the study is being conducted. If you do not wish to participate anymore, your data will be purged from the research entirely, except for this debriefing consent.



Who will know that you are in this study? As we promised in the original consent that you will not be linked to any data collected and we will keep who you are confidential. None of these protections have been changed.

Do you have any questions about this study, or about the deception involved? Phone or email Principal Investigator, Hillman Wirawan at 862-333-6087 or wirawanhl@montclair.edu or the Faculty Sponsor, Dr. Kenneth Sumner, at 973-655-5397 or sumnerk@mail.montclair.edu

Do you have any questions about your rights as a research participant? Phone or email the IRB Chair, Dr. Katrina Bulkley, at 973-655-5189 or reviewboard@mail.montclair.edu.

It is okay to use my data in other studies:

Please initial: _____ Yes _____ No

I would like to get a summary of this study:

Please initial: _____ Yes _____ No

A copy of this consent form is for you to keep. Your responses on this consent override those on the original consent.

Now that you know the true purpose of the study, indicate your willingness to have your data included in the study by filling in your lines below:

Print your name here

Sign your name here

Date

Name of Principal Investigator

Signature

Date

Name of Faculty Sponsor

Signature

Date

APPENDIX B

STUFFING ENVELOPE INSTRUCTION

Please read this instruction before stuffing the envelope!

This instruction will explain how to check the letter for any printing faults, folding the letter and insert the letter into an envelope.

1. We will provide you with envelopes, charity letters, and a pen.
2. You will start with checking a letter with printing fault or error in printing caused by loading paper incorrectly or any unsightly ink spots or other problems. If you find any printing faults, please use your pen to circle the fault so it will be easier for us to find it.
3. The next step is to fold the letter and insert them to an envelope. Please note that **all letters, including letter with errors** must be folded and inserted into an envelope. You need to fold the letter using a three-fold letter style for a No. 10 envelope. For folding instruction, please read this following instruction:
 - a. First, place the letter face up with the letter head on top.
 - b. Second, fold up the bottom third towards the top until the bottom edge reaches the end of the first paragraph.
 - c. Third, flip the letter face down, then take the top edge, and fold it down to about 0.5 inch from the bottom edge. The top should not reach the edge of the very first fold and the letterhead should be exposed.
 - d. Fourth, insert the last crease into the envelope first, with the top letterhead facing up and exposed.
 - e. Last, close the envelope but **do not seal it**.
4. File all envelopes that you have stuffed but please separate between error-free letters and letter with printing faults.
5. You can stuff as many envelopes as you want or stop working anytime you want. However, this will not take you more than 25 minutes.
6. We will let you know when to start and stop stuffing the envelopes.

The investigators will also give a demonstration on how to fold and insert the letter into an envelope.