

Gender Differences in the Effects of Online Visual and Audio Combinations on Credibility

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Abstract

Since the COVID-19 pandemic occurred, salespeople using online tools have been facing difficulties conveying credibility to their customers, which is considered essential for business. This study focused on the combination of visual and audio cues, not individual cues, and evaluated salesperson credibility from a gender difference perspective. Each male and female salesperson gave a business presentation using Zoom with eight patterns of visual and audio combinations: three kinds of still images as visual (Name only /Profile photo with no expression/Profile photo with a smile) x two kinds of voices as audio (Dull/Bright) and two kinds of videos (with no facial expression and dull voice/ with facial expressions and bright voice), and his /her credibility was evaluated by participants from a customer perspective. As a result, it suggests that the female salesperson decreases her credibility significantly using the “Name” & dull voice” combination and that visual cues are significant factors in conveying credibility. In the case of the male salesperson, it suggests that any visual images with a bright voice mostly increase his credibility and that audio cues are significant factors. The findings from this study indicate the potential for further improving salesperson credibility in online communication by gender.

Keywords: Online communication, Salesperson, Credibility, Gender differences, nonverbal cues.

1 Introduction

The COVID-19 pandemic forced a rapid shift in business communication from face-to-face to online [1], and most companies instructed employees to conduct business meetings from home using their own devices [2]. Some studies have suggested that it is more difficult to convey credibility in online business communication than face-to-face due to the lack of nonverbal cues [3] [4]. Especially salespeople using online tools have been facing difficulties conveying credibility to their customers, which is considered essential for business [5]. Business tools such as Zoom and Teams have proven useful and functional, on the other hand, people may unintentionally use nonverbal cues, which are not used in face-to-face communication, in ways that

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widen the communication gap between face-to-face and online [6]. Therefore, the effect of nonverbal cues used in online tools should be considered [7].

This study focuses on the combinations of visual and audio cues online and attempts to evaluate salesperson credibility from a gender difference perspective. In the experiment, each female and male salesperson gave a presentation online with eight patterns of visual and audio combinations, and his/her credibility was evaluated by the participants from a customer perspective [7]. By comparing the results of each gender's credibility, we assess the characteristics of gender differences in the combination of nonverbal cues. This study can support salespeople in further strengthening their credibility by recognizing gender differences when using online tools for business communication.

Next, we describe the novelty of this study. The study focuses on combinations of non-verbal cues. The reason, the focus is on combinations, rather than individual cues, is that Patterson claims that nonverbal behaviors do not occur individually, and the integrated pattern of non-verbal cues should be discussed [8]. Numerous previous studies focused on specific factors, not combinations, of nonverbal cues. For instance, McColl & Truong proved that the appearance of salespeople affects satisfaction for customers in web videos [9]. In that study, considerations regarding credibility also seem to be lacking. Some studies have argued that credibility is reduced when eye contact is interfered with in online videos [10] [11]. Regarding voice, it has been suggested that the strength of voice online impacts the credibility of the speaker [12], and that voice is an important factor in making impressions such as credibility [13]. Furthermore, it has been found that higher speaking speed increases credibility [14] [15], but those studies have not discussed the effects of visual and audio combinations.

Regarding gender differences in nonverbal cues, there are numerous studies. It is said that gender differences in nonverbal communication are influenced by congenital biological reasons and acquired social norms [16]. Biological characteristics bring differences in the body, the way of walking, and also the voice, as nonverbal cues. Women use and influence others with facial and vocal expressions and eye contact, more than men. [17] [18] [19]. This is because women tend to relate to people and their impressions are manipulated in social situations more than men. Women are said to be more sensitive and have acquired sociability through child-rearing and other acts of caring for others [20]. In other words, women acquired their expressions, including nonverbal cues, in their social lives. Since these studies are about general concepts, we should consider them in the context of online business communication.

Furthermore, in online communication, male and female users perform differently in communicating with others [21]. In particular, it is suggested that women tend to perceive higher risk online purchases than men [22], so gender differences in salesperson credibility online need to be examined in the context of business communication. Some studies have examined the impact of online sellers' facial images and their expressions on purchasing behavior. Fagerstrom et al. verified that profile pictures on the Airbnb website, an accommodation rental service, changed customer responses.[23]. It confirmed that profile photos with negative facial expressions and human-shaped silhouettes tended to be avoided by customers, while positive, natural-looking faces tended to be accepted. Also, it was found that female customers reacted more strongly than male customers. It indicates that women are more responsive to facial expressions than men. Again, unlike the study presented in this paper, that study discusses the effects of online visual imagery but does not consider credibility, and it only uses photographs, not in combination with audio.

Online, salespeople try to use nonverbal cues in various patterns to communicate and earn credibility which is critical for business. Nevertheless, few studies have attempted to demonstrate the effect on the credibility of the combinations of visual and audio cues in online tools and gender differences [7]. Therefore, it is vital to assess and discuss how combinations of visual and audio cues in online tools affect the credibility of salespeople, by gender, in the context of business communication. This study determines those characteristics from a gender perspective and contributes to a better understanding of earning credibility in business communication using online tools.

In the following, Chapter 2 explains the *Factor structure of salesperson credibility*. Chapter 3 describes the research procedure, and Chapter 4 states the evaluation results. Chapter 5 contains the discussion, and Chapter 6 presents the conclusion of this study and the direction of future work.

2 Literature Review

There has been a great discussion about the validity of the conceptualizations of credibility. The definitions and conceptualizations of credibility are as diverse as the work to identify them [24], and Self and Roberts claim, “its literature is plenty but contradictory” [25, p.435]. Eisen notes that not only is credibility a multidimensional concept but also that its feature of being “intuitive” complicates its conceptualization [26]. Upon defining marketing communication as any kind of communication influencing economic transfer between salespeople as senders of messages, and consumers as receivers, Eisen re-evaluated prior studies about the factors impacting credibility in the field of marketing communication. His study generalized the concept of credibility and re-confirmed its reliability and validity. Then he established the *Factor structure of salesperson credibility*.

In this study, three factors, including fourteen indicators of the structure of *Salesperson credibility*, are used as an evaluation scale. As Figure 1 shows, the three factors are the following: *Trustworthiness*, *Competence*, and *Attraction*. The indicators that make up each factor are the paired adjectives derived from the Semantic Differential method (SD method). In the first factor, *Trustworthiness*, there are five indicators: “honest/dishonest”, “sincere/insincere”, “realistic/unrealistic”, “right/wrong”, and “trustworthy/not trustworthy”. In the second factor, *Competence*, there are four indicators: “trained/untrained”, “competent/incompetent”, “professional/unprofessional”, and “experienced/unexperienced”. In the third factor, *Attraction*, there are five indicators: “attractive/unattractive”, “appealing/unappealing”, “nice/awful”, “expressive/inexpressive”, and “dynamic/static”. As Table 1 indicates, the factor reliability of *Salesperson Credibility* was validated.

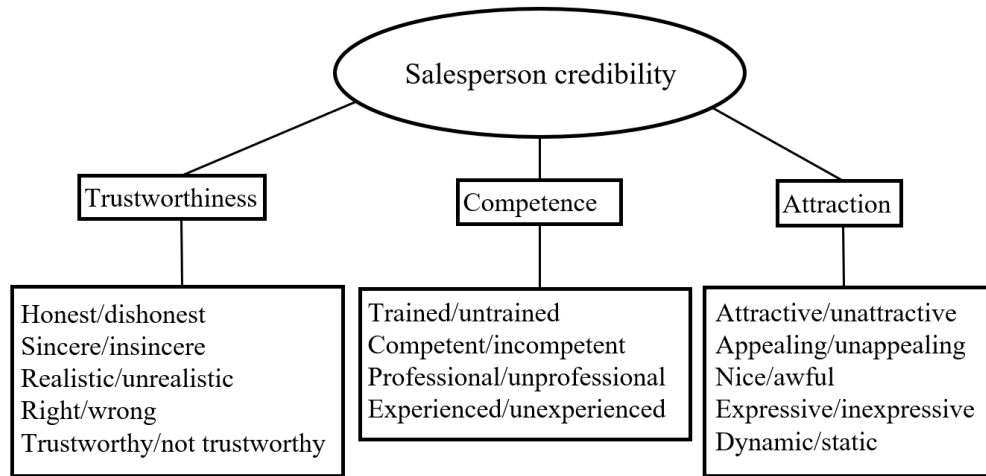


Figure 1: Factor structure of salesperson credibility by Eisend [26] p.20

Table 1: Analysis of salesperson credibility [26] p.19 modified by authors

No.	Factor Analysis			
	Factor	Indicator	Factor Loading ≥ 0.4	Factor reliability ≥ 0.6
1	Trust-worthiness	Honest	0.659	0.829
		Sincere	0.660	
		Realistic	0.722	
		Right	0.692	
		Trustworthy	0.662	
2	Competence	Trained	0.680	0.836
		Competent	0.425	
		Professional	0.511	
		Experienced	0.625	
3	Attraction	Attractive	0.728	0.847
		Appealing	0.544	
		Nice	0.607	
		Expressive	0.787	
		Dynamic	0.856	

3 Research Procedure

As Table 2 indicates, the procedure of this study consists of three parts with six steps. The first part, A, is the Preparation of materials. The second part, B, is Implementation, and the third part, C, is Analysis. The details of the six steps are as below.

A. Preparation of materials

Step 1: Make a script and a slide for the presentation

The presentation situation is that each female and male salesperson of a popular electronics retail store gives a presentation about a *Three-months product monitor* to a customer who meets her/him for the first time via PC. The script of the presentation is prepared according to the *Elaboration Likelihood Model* [27], which indicates what elements should be presented to promote change in the receiver's attitude. Besides the script, one PowerPoint slide is prepared to clarify the period and the purpose of the *Three-months product monitor*.

Step 2: Record original on-camera presentations

As an online tool for business communication, Zoom is used for this study. Each female and male salesperson gives two kinds of two-minute presentations by turning on the PC camera. One is a presentation with facial expressions, and the other is a presentation with no facial expressions (Figure 2). They are recorded as original presentations along with other materials for the coming experiment.

Table 2: Procedure of this study

		Procedures	
Parts		Steps	
A	Preparation of materials	1	Make a script and a slide for the presentation
		2	Record original on-camera presentations
		3	Make eight patterns of presentation videos
		4	Design the questionnaires
B	Implementation	5	Participants watch eight patterns of presentations and answer the questionnaires
C	Analysis	6	Analyze the data

Step 3: Make eight patterns of presentation videos

Eight patterns of visual and audio combinations on Zoom are used for this study. First, three kinds of still images as visual information about the salesperson's "Name", "Profile photo with no expression", and "Profile photo with a smile" were prepared. In this experiment, text messages are not considered as visual images. This is because, since the focus is on the credibility of the salesperson, we considered text information other than names to be unnecessary in this context.

Second, two kinds of voices as audio information were extracted from the original videos

recorded in Step 2. The two kinds of voices are expressed as "Bright voice" and "Dull voice": participants would eventually answer about the characteristics of the voices in the questionnaires. Then, each of the two kinds of voices was combined with each of the three kinds of still images, resulting in six patterns of the still image combinations being ready (Figure 3). Adding two kinds of original videos in Step 2, a total of eight patterns of combinations of materials are the following: No.1 Name x dull voice, No.2 Name x bright voice, No.3 Profile photo with no expression x dull voice, No.4 Profile photo with no expression x bright voice, No.5 Profile photo with a smile x dull voice, No.6 Profile photo with a smile x bright voice, No.7 Video with no facial expression, and No.8 Video with facial expressions (Table 3). To investigate the influence of the combinations of visual and audio cues exclusively, the timing and the length of slide viewing, and the overall presentation length of all patterns were edited to be all the same. Regarding "N/A" in Table 3, the two possible combinations of intentionally contradictory cues by the salespeople (video with facial expressions and dull voice/video with no facial expression and bright voice) are out of the scope of this study.

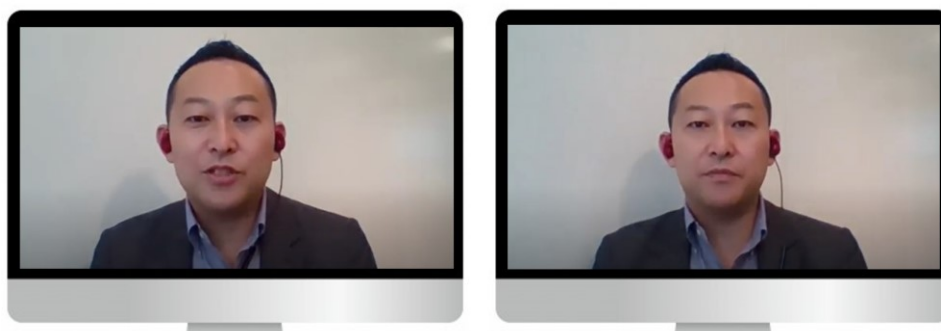


Figure. 2: Original presentation videos (Male salesperson)
Left / Pattern No.7: with facial expressions (and bright voice)
Right / Pattern No.8 with no facial expression (and dull voice)



Figure 3: Still images and voice combinations (Male salesperson)
 Upper / Name only: Pattern No.1(with dull voice), No.2(with bright voice)
 Lower left / Profile photo with no expression:
 Pattern No.3 (with dull voice), No.4 (with bright voice)
 Lower right / Profile photo with a smile
 Pattern No.5 (with dull voice), No.6 (with bright voice)

Table 3: Eight patterns of visual and audio cue combinations

<i>Cues</i>		<i>Patterns of Combinations</i>				
		Front camera Off (Still)			Front camera On (Video)	
Voice (Two kinds)	Dull	Name	Profile photo with no expression	Profile photo with a smile	Video with facial expressions	Video with no facial expression
			Bright	No.1	No.3	No.5
		No.2	No.4	No.6	No.7	N/A

Step 4: Design the questionnaires

As described in Chapter 2, fourteen indicators in the three factors of *Salesperson credibility* are adopted for the evaluation. Based on the SD method, fourteen pairs of adjectives and a 7-level scale are presented. For example, in the case of “dishonest-honest”, “-3 very dishonest”, “-2 dishonest”, “-1 somewhat dishonest”, “0 Neutral”, “+1 somewhat honest”, “+2 honest”, “+3 very honest” are presented in the questionnaires.

B. Implementation

Step 5: Participants watched eight patterns of presentations and answered the questionnaires

There were 52 participants for the female salesperson: (36 male, 16 female; age: M=35.3 years old). For the male salesperson, there were 55 participants: (30 male, 25 female; age: M=36.4 years old). To avoid the order effect, the participants were divided into eight groups and watched different orders of presentations. Each participant watched the first presentation on her or his PC and answered the related questionnaire, then watched the second presentation and answered the corresponding questionnaire, and so on until the eighth presentation. No mention was made to the participants that the experiment was about the credibility of the salesperson, nor of the combination of visual and audio cues.

C. Analysis

Step 6: Analyze the data

All data collected were analyzed with IBM SPSS Statistics. Questionnaire scores from “-3” to “+3” were allocated from “1” to “7” points. The Analysis of Variance (ANOVA) was used with “pattern numbers of the combination” as the independent variable and “sum of the three-factor scores” as the dependent variable. Since ANOVA showed a significant main effect, the Tukey-Kramer test was conducted as a subsequent test. Then, we adjusted p-values for the multiple testing using the Holm method [28].

4 Evaluation Results

We evaluated the results of each female and male salesperson’s credibility online regarding the eight patterns of combinations of visual and audio cues. We showed the resulting mean values and significant differences in credibility.

Firstly, the mean values of credibility were considered. As Table 4 indicates, for the female salesperson, in descending order of magnitude, the mean values were “Video with facial expressions and bright voice,” “Profile photo with a smile x bright voice”, “Profile photo with no expression x bright voice”, “Name x bright voice”, “Profile photo with a smile x dull voice”, “Profile photo with no expression x dull voice” “Video with no facial expressions and dull voice” and “Name x dull voice”. For the male salesperson, in descending order of magnitude, the mean values were “Video with facial expressions and bright voice,” “Profile photo with a smile x bright voice”, “Name x bright voice”, “Profile photo with no expression x bright voice”, “Profile photo with a smile x dull voice”, “Name x dull voice”, “Profile photo with no expression x dull voice”, and “Video with no facial expression and dull voice”.

For both genders, “Video with facial expressions and bright voice” indicates the highest mean value of credibility. The lowest mean value of credibility is “Name x dull voice” for the female salesperson, and “Video with no facial expression and dull voice” for the male salesperson. Table 4 shows the ranking of the mean value of eight patterns of the combination, and indicates that “bright voice” and any image (video or still) came in the top half.

Thus, the voice audio cues, rather than the visual cues, have a greater impact on the salesperson credibility. Figure 4 shows the mean value of the same type of visual cues side by side. The results are for the female person on the left and the male salesperson on the right. The arrow lengths are derived from the audio cues differences and it is obvious that the effect of audio cues is greater for male salespeople than for female salespeople.

Table 4: A ranking of the mean value of eight patterns of combinations

Female Salesperson				Male Salesperson			
Rank	Mean	Combinations		Rank	Mean	Combinations	
		Visual	Audio			Visual	Audio
1	15.8	Video with facial expressions	Bright	1	14.9	Video with facial expressions	Bright
2	13.9	Profile photo with a smile	Bright	2	14.6	Profile photo with a smile	Bright
3	13.1	Profile photo with no facial expression	Bright	3	13.3	Name	Bright
4	12.8	Name	Bright	4	12.9	Profile photo with no facial expression	Bright
5	12.5	Profile photo with a smile	Dull	5	10.8	Profile photo with a smile	Dull
6	11.6	Profile photo with no facial expression	Dull	6	9.57	Name	Dull
7	11.1	Video with no facial expression	Dull	7	9.55	Profile photo with no facial expression	Dull
8	9.8	Name	Dull	8	9.2	Video with no facial expression	Dull



Figure 4: Audio cue impact by gender. The differences in mean value between two kinds of audio cues, “bright” and “dull” voice, with the same kind of visual cue.

Secondly, we considered the significant differences in salesperson credibility of the female and the male respectively. For the female salesperson, based on the results of the Tukey-Kramer test, Table 5 shows only the combinations that indicate significant differences. The statistical significance level is less than 0.05 ($p < 0.05$). According to the results, the credibility of female salespeople is affected by the combination of visual and audio online cues. In addition, Table 5 shows that significant differences in the female salesperson credibility are derived from the brightness of their voices and the visual differences. Especially the combination of “Name x dull voice” shows a significant difference from all combinations except “Video with no facial expression and dull voice.”

For the male salesperson, the first analysis of the Tukey-Kramer test indicated more significant differences than the female salesperson, so we applied Holm’s method to avoid family-wise type 1 errors in multiple comparison procedures. We adjusted the statistical significance level to less than 0.0017 ($p < 0.0017 = 0.05/29$). Table 6 shows only the combinations that indicate significant differences in the male salesperson. According to the results, the credibility of male salespeople is also affected by the combination of visual and audio online cues, however, male salesperson credibility is mainly affected by the brightness of the voice rather than the visual image. Table 7 summarizes the significant differences for each gender in the second factor of Sales-person credibility: “Competence.” The number of combinations for which significant differences were found was more remarkable for the male salesperson than the female salesperson. The reason for indicating the results for only this factor among the three factors is that it clearly shows characteristics by gender differences. This will be discussed in the following discussion.

Table 5: The results for female salesperson credibility
(Significant differences only)

Tukey HSD		Difference in average	Standard error	P value	*p<0.05 95% Confiden- tial interval	
Combination of visual and audio					Lower	Upper
Name x dull	Name x bright	-2.995	0.536	0.000*	-4.63	-1.36
	Photo with no facial expres- sion x dull	-1.764	0.536	0.024*	-3.40	-0.13
	Photo with no facial expres- sion x bright	-3.358	0.536	0.000*	-5.06	-1.65
	Photo with a smile x dull	-2.712	0.536	0.000*	-4.35	-1.08
	Photo with a smile x bright	-4.114	0.536	0.000*	-5.75	-2.48
	Video with facial expressions & bright	-5.659	0.536	0.000*	-7.29	-4.03
Name x bright	Video with facial expressions & bright	-2.664	0.536	0.000*	-4.30	-1.03
	Video with no facial expres- sion & dull	1.732	0.536	0.029*	0.10	3.37
Photo with no facial expression x dull	Photo with a smile x bright	-2.351	0.536	0.000*	-3.98	-0.71
	Video with facial expressions & bright	-3.895	0.536	0.000*	-5.53	-2.26
Photo with no facial expression x bright	Video with facial expressions & bright	-2.337	0.536	0.000*	-3.97	-0.70
	Video with no facial expres- sion & dull	2.059	0.536	0.004*	0.42	3.63
Photo with a smile x dull	Video with facial expressions & bright	-2.947	0.536	0.000*	-4.58	-1.31
Photo with a smile x bright	Video with no facial expression & dull	2.852	0.536	0.000*	1.21	4.49
Video with Facial expressions & bright	Video with no facial expression & dull	4.4	0.536	0.000*	2.76	6.03
Video with no facial expression & dull	Omitted due to duplication					

Table 6: The results for male salesperson credibility
(Significant differences only)

Tukey HSD adjusted by the Holm		*p<0.0017(0.05/29)				
Combination of visual and audio		Difference in average	Standard error	P value	95% Confiden- tial interval Lower	Upper
Name x dull	Name x bright	-3.697	0.560	0.000*	-5.40	-1.99
	Photo with no facial expression x bright	-3.358	0.560	0.000*	-5.06	-1.65
	Photo with a smile x bright	-4.893	0.560	0.000*	-6.60	-3.19
	Video with facial expressions & bright	-5.33	0.560	0.000*	-7.04	-3.63
Name x bright	Photo with no facial expression x dull	3.709	0.560	0.000*	2.01	5.41
	Photo with a smile x dull	2.469	0.560	0.000*	0.77	4.17
	Video with no facial expres- sion & dull	4.04	0.560	0.000*	2.24	5.74
Photo with no facial expression x dull	Photo with no expression x bright	-3.37	0.560	0.000*	-5.08	-1.17
	Photo with a smile x bright	-4.906	0.560	0.000*	-6.61	-3.20
	Video with facial expressions & bright	-5.343	0.560	0.000*	-7.05	-3.64
Photo with no facial expression x bright	Video with no facial expression & dull	3.701	0.560	0.000*	1.97	5.41
Photo with a smile x dull	Photo with a smile x bright	-3.665	0.560	0.000*	-5.37	-1.96
	Video with facial expressions & bright	-4.103	0.560	0.000*	-5.81	-2.40
Photo with a smile x bright	Video with no facial expression & dull	5.236	0.560	0.000*	3.53	6.94
Video with facial expressions & bright	Video with no facial expression & dull	5.673	0.560	0.000*	3.97	7.38
Video with no facial expression & dull	Omitted due to duplication					

Table 7: The significant differences for each gender in the second factor of Salesperson credibility, "Competence."

Combination	Female salesperson	P <0.05	Male salesperson	P <0.0017
Name x dull	Name x bright	0.002*	Name x bright	0.000*
	Photo with no facial expression x bright	0.000*	Photo with no facial expression x bright	0.000*
	Photo with a smile x bright	0.000*	Photo with a smile x bright	0.000*
	Video with facial expressions & bright	0.000*	Video with facial expressions & bright	0.000*
Name x bright	Name x dull	0.002*	Name x dull	0.000*
			Photo with no facial expression x dull	0.000*
			Photo with a smile x dull	0.000*
			Video with no facial expression & dull	0.000*
Photo with no facial expression x dull	Photo with a smile x bright	0.016*	Name x bright	0.000*
	Video with facial expressions & bright	0.000*	Photo with no facial expression x bright	0.000*
			Photo with a smile x bright	0.000*
			Video with facial expressions & bright	0.000*
Photo with no facial expression x bright	Name x dull	0.000*	Name x dull	
	Video with no facial expressions & dull	0.028*	Photo with no facial expression x dull	0.000*
			Photo with a smile x dull	0.000*
			Video with no facial expression & dull	0.000*
Photo with a smile x dull	Video with facial expressions & bright	0.001	Name x bright	0.000*
			Photo with no facial expression x bright	0.000*
			Photo with a smile x bright	0.000*
			Video with facial expressions & bright	0.000*
Photo with a smile x bright	Name x dull	0.000*	Name x dull	0.000*
	Photo with no facial expression x dull	0.016	Photo with no facial expression x dull	0.000*
	Video with no facial expressions & dull	0.000*	Photo with a smile x dull	0.000*
			Video with no facial expression & dull	0.000*
Video with facial expressions & bright	Name x dull	0.000*	Name x dull	0.000*
	Photo with no facial expression x dull	0.000*	Photo with no facial expression x dull	0.000*
	Photo with a smile x dull	0.001*	Photo with a smile x dull	0.000*
	Video with no facial expressions & dull	0.000*	Video with no facial expression & dull	0.000*
Video with no facial expression & dull	Omitted due to duplication			

5 Discussion

The results suggest that regardless of the salesperson gender, the combination of visual and audio cues in online tools conveyed a difference in his or her credibility. In other words, it suggests that salespeople could increase their credibility through the combination of visual and audio cues. Since credibility is an essential factor in business communication, the combinations of visual and audio should be deeply considered.

By analyzing the significant differences, it is evident from the findings that there are gender-specific characteristics influencing credibility. In the case of the female salesperson, she tends to decrease her credibility significantly when she uses the combination “Name x dull voice.” The evidence is that “Name x dull voice” is the lowest mean value and indicates significant differences from all other combinations except “Video with no facial expression & dull voice.” In other words, female salespeople who tend to speak in a dull voice should avoid using only “Name” as a visual cue. Even when female salespeople speak in a bright voice, the study suggests they consider using visual cues because significant differences were found between the same voices, such as “Name x bright voice” and “Video with facial expressions & bright voice” or “Profile photo with no facial expression x bright voice” and “Video with facial expressions & bright voice.” This suggests that female salespeople's credibility is affected by visual cues and that nonverbal cues through facial expressions are the key to conveying credibility.

In the case of the male salesperson, most of the significant differences are derived from the brightness of his voice. Especially as Table 7 shows, significant differences are prominent in the second factor, *Competence*, of *salesperson credibility*. For the male salesperson, the characteristics of the voices, not visual images, derived significant differences. For the female salesperson, fewer combinations affect “Competence” than for the male, and both audio and visual cues derived significant differences. Figure 5 also indicates that for the male salesperson, whichever visual cues are used, it was found that bright audio cues increased the salesperson's credibility. This suggests that the credibility of male salespeople is affected by voices, so conveying nonverbal information through voice impressions is key to conveying credibility.

McColl & Truong argue that facial expressions are more critical in webcam sales than in person and that images of the head and shoulders, in turn, affect the customer's evaluation [9]. That is consistent with the importance of visual cues for female salespeople in this study. Hall & Gunnerly claim that women use more nonverbal cues, such as smiles, eye contact, and facial expressiveness, than men, and use them accurately. [19]. Hence, per our study results, the static image of only “Name” may reduce the credibility of the female salesperson, resulting in gender differences concerning visual cues. The results of this study confirm that visual information is an important factor impacting credibility for females.

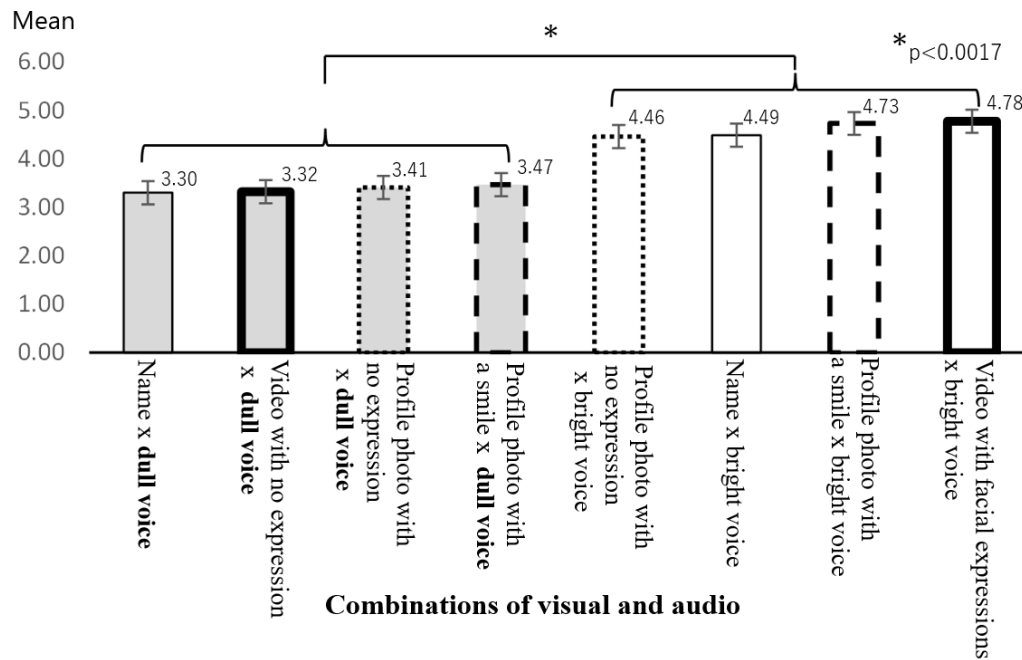


Figure 5: Significant differences in the second factor, Competence, of the male salesperson credibility

On the other hand, Toe Aung and David Puts suggested the importance of audio cues for males, compared to females, and audio cues affect their dominance and social success [29]. However, more proof is needed that the brightness of males' voices may be more critical to credibility online than visual cues. In addition, as discussed in Chapter 1, while this study indicates the critical importance of gender differences in credibility online derived from the effects of visual and audio combinations, the effects of the integration of nonverbal cues in communication, rather than individual cues, need to be studied more. As the COVID-19 pandemic has led us to use various business tools with our own devices in online communication, more attention should be paid to studies on this subject, so that female and male salespeople can better leverage their strengths and gain credibility.

6 Conclusion

A. Summary

This study focuses on the combinations of visual and audio cues online, and endeavors to evaluate salesperson credibility from a gender difference perspective. The experiments using Zoom showed that the combinations of visual and audio cues affect both genders' salesperson credibility. There are gender differences, whose unique characteristics and the combinations of cues used in communicating impact credibility.

It is concluded that female salesperson credibility is affected by the combination of visual and audio cues, especially that "Name x dull voice" decreases her credibility significantly.

Even in a bright voice, a lack of facial cues also reduces her credibility. Since many previous studies discussed that females effectively use facial expressions, it suggests that when customers are unable to get facial cues from only “Name”, they do not feel salesperson credibility. Thus, “Name” as the visual cue without facial cues decreases female credibility. Since online communication is susceptible to various online conditions, such as the camera having to be turned off and on in a hurry to continue the meeting, it is advisable to put up a profile photo rather than just a name in advance. On the other hand, it is concluded that male salesperson credibility is affected by the combination of visual and audio cues, however, their voice rather than visual cues mostly affected their credibility. It suggests that a bright voice is the main factor in increasing male salesperson credibility. Hence, to deliver credibility to customers, male salespeople should polish their voices to be brighter to increase their credibility and not just their facial images. In particular, if male salespeople want to convey credibility specifically through their “Competence”, they should concentrate on the brightness of their voice.

The findings from this study indicate the potential for further improving salesperson credibility in online communication and ways to effectively present nonverbal cues by gender.

B. Evolution of Future Research

Important future issues to consider are as follows. Since there was only one male and one female salesperson in this study, future studies of multiple salesperson credibility should be conducted to verify the result of this study. In addition, studies have suggested that matching a salesperson’s gender with that of the customer results in more effective marketing communication in some cases [30]. Therefore, salesperson credibility in combination with customer gender should also be studied further. Those would allow us to better understand gender differences in online business communication. Furthermore, whether the fact that participants in the eight groups watched the patterns in different orders was sufficient to account for the order effect requires further consideration. Finally, it is hoped that the findings of this study will contribute to better business communication using online tools.

Ethical Statement

Informed consent has been obtained from all individuals included in this study. The experimental collaborator has also given written consent for the use of his facial photographs. None of the authors has any conflicts of interest or any financial ties to disclose.

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