Are Men More Affected by AI Anthropomorphism? Comparative Research on the Perception of AI Human-like Characteristics Between Genders

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Abstract

Anthropomorphic characteristics at AI devices and robots are an important topic for the development and their future acceptance in the business environment and society. Human like characteristics at AI devices can increase their friendliness and social acceptance, but at the same time the interaction with a human like AI device can be unnatural. In this paper we focus on the empirical comparative analysis of the perception of physical anthropomorphic characteristics at AI devices between genders. Based on an online survey with two conditions (anthropomorphic vs non-anthropomorphic) we measured the perception of men and women towards human like features at AI devices. In comparison to previous research the analysis has been done within the gender groups, so we analyzed the two conditions for women and men separately. The results show that men are more sensitive to physical anthropomorphic characteristics of AI devices. While for women no significant differences for the two conditions have been observed, for men there are significant differences for the two conditions. Men perceive a higher emotional involvement for the anthropomorphic AI device, but they rather trust and are willing to buy the robot with less anthropomorphic features.

Keywords

Artificial intelligence, anthropomorphism, gender, consumer, robot, consumer-AI interaction

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Introduction

Disruptive is the word associated with the present business environment technological trends. From attended or unattended robotic process automation to chatbots or virtual voice assistants (Ashfaq, et al., 2020; Adam, Wessel and Benlian, 2021; Crolic, et al., 2022), intelligent service robots (Bertacchini, Bilotta and Pantano, 2017; Song and Kim, 2021) and advanced AI devices (Anica-Popa, et al., 2021; Longoni and Cian, 2022), all these emerging technological innovations continuously boost the business settings and, at the same time, they oblige companies and consumers to adapt to this new technological waves' outcomes in order to be competitive. The implementation of AI devices comes with several challenges and changes for both business and consumers. The most important challenge refers to the acceptance and integration of AI in the everyday life of consumers and business. Much of the recent research has focused on the factors and contexts affecting the acceptance of AI (Araujo et al., 2020; Chang and Kim, 2022; Longoni and Cian, 2022). The predominant factors can be divided in utilitarian factors such as the efficiency, reliability, ease of use (Venkatesh, Thong and Xu, 2012; Gonzalez-Jiminez, 2018; Gursoy, et al., 2019) and hedonic factors referring to the pleasure and perceived experience of using AI (Wirtz, et al., 2018; Chiang, Trimi and Lo, 2022; Seo, 2022). Several authors describe more and more the relation between consumers and AI as being similar to human relations, involving complex psychological aspects. About the social relation between consumers and AI, the scientists investigate in how far robots can show or mimic empathy and affection towards the human consumer (Kervenoael, et al., 2020; Pelau, Dabija and Ene, 2021a; Crolic, et al., 2022). For this social relation, Puntoni, et al. (2021) describe two directions in which the individual can feel connection or alienation towards the AI and in how far consumer act according to ethical rules in the parasocial relation. Another aspect describes the power relation between consumer and AI and the extent to

which the consumers feel exploited or served in the relation to AI (Bryson, 2010; Puntoni, et al., 2021), depending also on the way consumers want to express power (Hu, Lu and Wang, 2022). The discussion goes even deeper in describing the future structure of the society with integrated AI and robots. Therefore, whether consumers will be empowered by the use of AI or they will be replaced remains a question at the center of scientific debate (Huang and Rust, 2018; Puntoni, et al., 2021). All these changes and challenges ascribe human-like characteristics to AI devices and robots. In our research we focus on analyzing the different types of anthropomorphic characteristics and the way they impact the para-social relation between humans and AI.

1. Literature review on the anthropomorphic characteristics at AI devices and robots

The concept of anthropomorphism in technological area is defined as the tendency of attributing humanlike characteristics to AI devices and robots (Waytz, Cacioppo and Epley, 2010). From the business automation perspective, anthropomorphism is stated as a basic psychological process that can facilitate social interactions between human and nonhuman entities, being considered as an essential construct for understanding people' perception of robots and by sustaining the humans' natural needs for social connection, understanding and control of their environment (Blut, et al., 2021). The anthropomorphic characteristics of AI devices cover a wide variety of elements, starting from the physical appearance and form of AI devices (Lu, Cai and Gursoy, 2019; Song, 2020; Song and Luximon, 2020; Chong, et al., 2021), the use of human voice and conversational skills (Feine, et al., 2019; Ashfaq, et al., 2020; Adam, Wessel and Benlian, 2021) to the transfer of a human-like behavior, psychological traits and characteristics (Lu, Cai and Gursoy, 2019; Mohanty, 2020; Pelau, Dabija and Ene, 2021a) and even to a social role conferred to them (Damiano and Dumouchel, 2018). We have identified some key challenges for each category of anthropomorphic AI devices.

For the physical anthropomorphic appearance of AI devices, several authors (Lu, Cai and Gursoy, 2019; Blut, et al., 2021; Chong, et al., 2021) confirm the fact that there is no clear implementation advantage for a human like form, the two appearances remaining indecisive. Recently, in the case of digital assistants, researchers show that an automatically activated non-anthropomorphic digital assistant leads to higher levels of satisfaction and user experience than a human-like, consumer-activated digital assistant, even the users acknowledge their potential freedom of choice threats. Henceforth, authors recommend that managers analyze the reactance to level of AI applications' anthropomorphism and the activation option use, in order to optimize the final consumers' satisfaction (Pizzi, Scarpi and Pantano, 2021).

An important category of AI devices are chatbots which have the ability to interact with consumers by voice and by having conversational skills. From the point of view of the chatbot-human interaction, a critical issue for a positive or a negative reaction of consumers are certain social characteristics such as verbal approach, visual emphasizing of the words' meaning, auditory presence components like voice and vocalizations, or invisible behavioral added traits like a certain response time (Feine, et al., 2019; Ashfaq, et al., 2020). Other researchers studied the way in which verbal anthropomorphic design cues (like identity, small talk, and empathy) of an AI-based chatbot affect user request compliance. It was shown that more human-like qualities can influence the users' willingness (consciously or unconsciously) to conform with or adapt to the recommendations and requests given by such an AI-enhanced chatbot (Adam, Wessel and Benlian, 2021).

For AI-chatbot assistants, the use of voice-based assistants as voice commands, and not specialized commends that people need, can be unnatural. The coach role of AI-chatbots comes, among others, with services requirements for comprehensive learning abilities, design and service expectation. A special case is the implementation of AI-chatbot co-workers. In this particular situation the main challenge represents the way in which companies should overcome the fear of employees to be replaced by robots or to become redundant and avoid situations of customer dissatisfaction or service failure caused by a potential misalignment of AI-co-workers and employee tasks (Chong, et al., 2021). Several researchers have shown that actually the physical human appearance by form or voice are rather used in order to enhance the psychological characteristics of AI devices (Tan, et al., 2020). Measuring consumer willingness to integrate AI devices and robots as a long-term agent in service delivery, Lu, Cai and Gursoy (2019) consider the anthropomorphic characteristics as a provoking variable, due to its divergent views: the consumers expressed both acceptance and rejection of robots having human appearance and behavior. In their SRIW scale, the anthropomorphic dimension includes elements influencing the consumers' perception of human-like AI devices like a mind of their own, consciousness, free will, emotions, intentions and even the sensation that they are either inanimate, computer animated or living and real (Lu, Cai and Gursoy, 2019). Other scholars have determined animacy, intelligence, likability, safety and social presence as critical

anthropomorphic factors which influence the consumers' use intention related to service robots (Blut, et al., 2021).

The human characteristics of AI devices can be categorized in cognitive and emotional ones. In the cognitive category there are included traits like increased efficiency of activities, higher capacity of memory and the capability of AI devices to learn from experience. Bringing machine learning from statistical analysis purposes to the computational intelligence and AI areas, Angelov and Gu (2018) announced as anthropomorphic the next generations of machine learning methods and algorithms, emphasizing the need for implementing imitations of humans' learning-from-data mode. As opposed to the deep learning neural networks, which are not transparent or adaptable to new scenarios and require huge data volume and computational power, the concept of anthropomorphic machine learning is presented by the authors as being endowed with eight human-like learning abilities. These include learning from new examples, learning collaboratively, being aware of what has been learned and what is known, what is unknown and why (Angelov and Gu, 2018). A human-like behavior exhibited by AI applications aiming at becoming appreciated by consumers are named humanitics. In this field, manufacturers registered the tendency to endow intelligent systems with more and more human characteristics, such as believing, trusting, predicting, learning, being emotional (Mohanty, 2020).

The emotional behavior of AI devices is related to their ability to show empathy, care and feelings of friendship in the relation to the consumer. In this sense, trustworthiness is considered a main characteristic for the perception of AIs' dominance, friendliness, and attractiveness. Mathur and Reichling (2016) also consider trustworthiness as having a key-role in human-robot interaction (HRI) for several reasons. On one hand trustworthiness is crucial for persuasion and people's intention to follow suggestions. On the other hand social robots have assigned characters for communication and reaction to communication, providing both physical help and emotional support to a human consumer. Consequently, the specialists have determined some potential dynamic and emotional features that could improve the facial anthropomorphic trustworthiness for social robots, such as symmetrical feminine features, direct gaze design or head nodding for positive emotions. All these AI enhancements can be integrated without affecting the face harmony of the AI (Song, 2020; Song and Luximon, 2020).

The consumer's perception of anthropomorphic attributes like warmth and mind attribution, was also studied in relation to the proactivity in social robot behavior, in order to contribute to the Human-Robot Interface (HRI) design for domestic robots (Tan, et al., 2020). It seems that the user perception of humanlike warmth can be increased with the proactive behavior levels. Nevertheless, when AI devices' behavior does not include proactive elements, the mind attribution may be perceived more. Damiano and Dumouchel (2018) distinguish between ascribing and inferring, by the consumers, the humanlike characteristics to different types of robots. While for AI devices with anthropomorphic projections evoked by objects, such as traditional dolls, cars or computers, the consumers ascribe human traits to non-human entities, for social robots it is the AI entity behavior from which these human specificities are inferred.

The most elaborate form of anthropomorphic AI devices is by attributing them a social role. By conferring robots "social presence" and "social behaviors", it is expected to generate the consumer's illusion of reciprocal social and affective potentially long-lasting relations with the AI devices (Damiano and Dumouchel, 2018). These social inclusion of AI devices is in accordance to the Computers as Social Actors Theory, according to which computers are seen as social actors and are treated as such (Davis, Bogozzi and Warshaw, 1989; Venkatesh, Thong and Xu, 2012). A big topic in this sense is their future integration in the hierarchy of the society. Using the Social Cognitive Theory (Bandura, 2018), Chong, et al. (2021) inventory the current AI-chatbot applications and classify them in three categories, from their social anthropomorphic role viewpoint in three categories: AI-assistants, AI coaches and AI co-workers.

2. Methodology

The objective of our research is to determine the impact of the physical anthropomorphic characteristics of AI devices on the consumers' perception depending on gender. More precisely we have analyzed if men and women have different perception of human-like characteristics at AI devices. For the empirical testing of the proposed hypotheses, data was collected with the help of an online questionnaire from 678 respondents in September-October 2021. In order to measure the anthropomorphic physical characteristics, the questionnaire has been developed with a between-subjects design measuring the constructs for two conditions: an anthropomorphic condition (N=335 respondents out of which 205 were women and 130 were men) and a non-anthropomorphic condition (N=343 respondents out of which 209 were women and 134 were men). For each of the conditions, the respondents had to watch a picture of an interaction between a

human and the anthropomorphic Sophia robot designed by Hanson Robotics (for the anthropomorphic condition) and an interaction between a human and a classic robot (for the non-anthropomorphic condition). After watching the picture, the respondents had to imagine that they have to solve a task with the help of the AI device they have seen in the picture. Based on this they had to evaluate the subsequent constructs. For each of the constructs, several items have been measured with the help of a 7-point Likert scale, where 1 represents total disagreement and 7 represents total agreement. For measuring the emotional relation between the consumer and AI we used 2 items adapted after Kim, Ratneshwar and Thorson (2017), 4 items adapted after Leach, Ellemers and Barreto (2007), Kirmana, et al. (2017) and presented in Bruner (2019). For the friendliness of relation between consumer and AI devices a scale has been adapted after Bagchi and Ince (2016) and Bruner (2019), while for the willingness to buy a scale has been adapted after Kumar and Pansari (2016) and by using self-determined items. Efficiency of using AI has been measured using a scale adapted after Pelau, Ene and Pop (2021b).

3. Results

In comparison to previous research, when we compared the two gender groups, in this analysis we tested empirically the differences within the group. For instance, we analyzed with the help of the discriminant analysis the differences for the two conditions (human vs. non-human) for female respondents and we did the same with the male respondents. The results of our discriminant analysis for the two gender groups can be observed in table 1.

The first analyzed factor was the *emotional relation* between people and robots. When asked if the interaction with the robot would affect emotionally the individuals, men which interacted with robots with humanlike characteristics agreed more with this question than women ($M_{\text{Human women}} = 2.57$, $M_{\text{Non-human women}} = 2.38$, $F = 1.234$, $p = 0.267 > 0.10$, $M_{\text{Human men}} = 2.60$, $M_{\text{Non-human men}} = 2.14$, $F = 5.175$, $p = 0.024 < 0.05$) and they were slightly more able to connect emotionally with the robot with anthropomorphic features than women ($M_{\text{Human Women}} = 2.36$, $M_{\text{Non-human women}} = 2.11$, $F = 2.720$, $p=0.100>=0.10$, $M_{\text{Human men}} = 2.46$, $M_{\text{Non-human men}} = 2.03$, $F = 5.343$, $p = 0.022 < 0.05$). We can observe also that both genders were more able to connect emotionally with the robot with humanlike characteristics in comparison with the one without these features. Regarding the ability of AI devices to establish a relationship with a human being, there are significant differences in finding it sincere ($M_{\text{Human women}} = 3.43$, $M_{\text{Non-human women}} = 3.46$, $F=0.018$, $p=0.892 > 0.10$, $M_{\text{Human men}} = 3.63$, $M_{\text{Non-human men}} = 4.06$, $F= 2.864$, $p= 0.092 < 0.10$) and trustworthy ($M_{\text{Human women}} = 3.69$, $M_{\text{Non-human women}} = 3.68$, $F=0.002$, $0.961> 0.10$, $M_{\text{Human men}} = 3.81$, $M_{\text{Non-human men}} = 4.39$, $F= 6.171$, $p= 0.014 <0.05$). The items concerning the ability of robot to manipulate people ($M_{\text{Human women}} = 3.90$, $M_{\text{Non-human women}} = 4.09$, $F=1.157$, $0.283 > 0.10$, $M_{\text{Human men}} = 3.91$, $M_{\text{Non-human men}} = 4.29$, $F = 2.532$, $p = 0.113 > 0.10$) and the honesty of robots ($M_{\text{Human women}} = 3.40$, $M_{\text{Non-human women}} = 3.50$, $F= 0.251$, $p= 0.617 > 0.10$, $M_{\text{Human Men}} = 3.65$, $M_{\text{Non-human men}} = 3.90$, $F = 1.119$, $p=0.291 > 0.10$) is considered moderate by both genders, having scores above moderate. We can also observe a preference of both categories for robots who don't have humanlike characteristics. Concerning the items that reflect the ability of robot to show empathy, there is only one item which shows a significant difference. There is a higher belief in the case of men that robot with humanlike characteristics is more caring that one without these features ($M_{\text{Human women}} = 2.24$, $M_{\text{Non-human women}} = 2.08$, $F=1.099$, $p= 0.295 > 0.10$, $M_{\text{Human men}} = 2.51$, $M_{\text{Non-human men}} = 2.15$, $F = 3.038$, $p = 0.083 < 0.10$), which reflects that they trust robots and their capacity to help people. The average scores reflect that friendship ($M_{\text{Human women}} = 3.99$, $M_{\text{Non-human women}} = 3.79$, $F=1.140$, $p= 0.286 > 0.10$, $M_{\text{Human men}} = 3.65$, $M_{\text{Non-human men}} = 3.68$, $F = 0.010$, $p= 0.921 > 0.10$) and kindness ($M_{\text{Human women}} = 3.78$, $M_{\text{Non-human women}} = 3.58$, $F=1.305$, $p= 0.254 > 0.10$, $M_{\text{Human men}} = 3.49$, $M_{\text{Non-human men}} = 3.55$, $F = 0.054$, $p= 0.816 > 0.10$) are the only qualities that can be considered appropriate to be found in robots in comparison to other characteristics, specific for human, and in consequence not attributed to devices.

The second factor which has been analyzed was the respondents' *willingness to buy* an artificial intelligence device with or without anthropomorphic features. While having to evaluate the wish of having a robot to help them with their daily activities, the results are very similar to both genders ($M_{\text{Human women}} = 5.11$, $M_{\text{Non-human women}} = 4.84$, $F = 2.001$, $p =0.158 > 0.10$, $M_{\text{Human men}} = 4.79$, $M_{\text{Non-human men}} = 5.12$, $F = 2.175$, $p = 0.142>0.10$). There is a significant higher score in the case of men regarding the willingness to buy a robot. The score of men ($M_{\text{Human women}} = 4.65$, $M_{\text{Non-human women}} = 4.62$, $F = 0.023$, $p =0.880 > 0.10$, $M_{\text{Human men}} = 4.51$, $M_{\text{Non-human men}} = 5.03$, $F = 5.460$, $p = 0.020 < 0.05$) is higher than the average, which reflects the trust in artificial intelligence devices and the wish of having a robot in their life, however they prefer robots without humanlike features. When asked if they would continue to interact with the robot in the near future, men showed more enthusiasm than women ($M_{\text{Human women}} = 4.65$, $M_{\text{Non-human women}} = 4.62$, $F = 0.023$, $p =0.880 > 0.10$, $M_{\text{Human men}} = 4.51$, $M_{\text{Non-human men}} = 5.03$, $F = 5.460$, $p = 0.020 < 0.05$). Finally, the enthusiasm or contentment of purchasing and using a robot was higher in the case of men than women,

but again, surprisingly, men prefer artificial intelligence devices without human features. ($M_{Human\ women}$ = 3.87, $M_{Non\text{-}human\ women}$ =4.07, F=1.072, p= 0.301 >0.10, $M_{Human\ men}$ =3.85, $M_{Non\text{-}human\ men}$ =4.35, F=4.314, p=0.039<0.05)

Table no. 1. Results of the discriminant analysis

Item	Women				Men			
	M_{Human}	$M_{Non\text{-}human}$	F	p	M_{Human}	$M_{Non\text{-}human}$	F	p
Emotional relation to AI								
The interaction with the robot affected me emotionally	2.57	2.38	1.234	.267	2.60	2.14	5.175	**.024**
I was able to connect with the robot emotionally	2.36	2.11	2.720	.100	2.46	2.03	5.343	**.022**
I fell that the relationship to the robot is honest	3.40	3.50	.251	.617	3.65	3.90	1.119	.291
I fell that the relationship to the robot is sincere	3.43	3.46	.018	.892	3.63	4.06	2.864	**.092**
I fell that the relationship to the robot is not manipulative	3.90	4.09	1.157	.283	3.91	4.29	2.532	.113
I fell that the relationship to the robot is trustworthy	3.69	3.68	.002	.961	3.81	4.39	6.171	**.014**
To what extent to you believe the robot is caring	2.24	2.08	1.099	.295	2.51	2.15	3.038	**.083**
To what extent to you believe the robot is friendly	3.99	3.79	1.140	.286	3.65	3.68	.010	.921
To what extent to you believe the robot is kind	3.78	3.58	1.305	.254	3.49	3.55	.054	.816
To what extent to you believe the robot is warm	2.95	2.79	.876	.350	3.00	2.74	1.305	.254
Willingness to buy								
I wish I had a robot to help me with my daily activities	5.11	4.84	2.001	.158	4.79	5.12	2.175	.142
I am willing to buy a robot which can help me with my daily activities	4.65	4.62	.023	.880	4.51	5.03	5.460	**.020**
I will continue my interaction with the robot in the near future	4.14	4.44	2.277	.132	4.21	4.79	5.942	**.015**
The purchase and usage of a robot make me content	3.87	4.07	1.072	.301	3.85	4.35	4.314	**.039**
Efficiency								
The robot performs the activities more efficiently	4.99	5.14	.787	.376	5.09	5.56	4.576	**.033**
The robot completes the duties more accurately	5.13	5.15	.016	.901	5.14	5.41	1.656	.199
Less errors occur when duties are fulfilled by robots	4.68	4.80	.453	.502	4.73	5.22	5.191	**.024**
The robot fulfills the activities faster	5.36	5.51	.948	.331	5.39	5.56	.683	.409
Activities completed by the robot are making my life easier	5.06	5.21	.854	.356	5.07	5.42	2.921	**.089**
I have more free time thanks to the robot	5.01	5.11	.313	.576	5.06	5.21	.488	.485
I can concentrate on more complex activities, if the robot is helping me out with some of the duties	5.12	5.39	2.893	**.090**	5.10	5.38	1.845	.176

The last category analyzed contains 7 questions regarding the *efficiency* resulted from the interaction with AI devices. When both categories were asked if the robot would perform daily activities more efficiently, men agreed more with this question as women while the interaction with robots without human characteristics was rated higher by both genders than the one with anthropomorphic characteristics ($M_{Human\ women}$ = 4.99, $M_{Non\text{-}human\ women}$ =5.14, F=0.787,p=0.376>0.10, $M_{Human\ men}$ = 5.09, $M_{Non\text{-}human\ women}$ =5.56, F=4.576, p= 0.033 < 0.05) The accuracy in which the robot can complete the tasks better than a human being was rated higher by the men who interacted with a robot without anthropomorphic characteristics ($M_{Human\ women}$ =5.13, $M_{Non\text{-}human\ women}$ =5.15, F=0.016,p=0.901<0.10) The third question concerned the fact that less errors occur when the duties are fulfilled by robots. There is a significant higher belief in the case of men concerning the accuracy when duties are fulfilled by robots. The score of men ($M_{Human\ women}$ = 4.68, $M_{Non\text{-}human\ women}$= 4.80, F= 0.453, p=0.502 >0.10, $M_{Human\ men}$ = 4.73, $M_{Non\text{-}human\ men}$ =5.22, F=5.191,

p=0.024<0.05) which interacted with robots without human being characteristics is higher than the average which means they trust AI devices and they accept robots in their life because they consider that these devices tend to improve their life ($M_{\text{Human women}}$ =5.06, $M_{\text{Non-human women}}$ =5.21, F= 0.854, p=0.356>0.10, $M_{\text{Human men}}$ =5.07, $M_{\text{Non-human men}}$ =5.42, F=2.921, p=0.089<0.10). The items which concern the rapidity ($M_{\text{Human women}}$ = 5.36, $M_{\text{Non-human women}}$ =5.51, F=0.948, p=0.331>0.10, $M_{\text{Human men}}$ = 5.39, $M_{\text{Non-human men}}$=5.56, F= 0.683, p=0.409>0.10) and the free time resulted from the usage of robot instead of human direct action ($M_{\text{Human women}}$ =5.01, $M_{\text{Non-human women}}$ =5.11, F=0.313, p=0.576>0.10, $M_{\text{Human men}}$ =5.06, $M_{\text{Non-human men}}$ =5.21, F=0.488, p= 0.485>0.10) show a low enthusiasm in both genders' behavior below the average score. The concentration on complex activities while robot performs some of the duties represent a significant belief in the case of women than men. ($M_{\text{Human women}}$ =5.12, $M_{\text{Non-human women}}$ =5.39, F=2.893, p=0.090<0.10, $M_{\text{Human men}}$ =5.10, $M_{\text{Non-human women}}$ =5.38, F=1.845, p=0.176 >0.10).

Conclusions

The results of our research show that men are more sensitive to anthropomorphic AI devices in comparison to women. Although there is an under average value for the emotional involvement of men in a parasocial relations to AI devices, men are more emotionally involved with AI devices with stronger anthropomorphic features. This means that for interactions in which emotionality is involved a stronger human like look might have a positive influence on the relation especially to male consumers. In opposition to this, men trust more to AI devices with a weaker anthropomorphic look. The perception of trustworthiness, sincerity are higher for classic robots. They also trust that a non-anthropomorphic AI device will perform activities more efficiently, with less errors and that they will increase their quality of life. Besides men are more willing to buy AI devices with weaker human like features. For the women the average values for the analyzed items are similar, but there are no differences between the two conditions. This result does not contradict the previous studies that men and women have similar perceptions on AI devices and robots, but the within the gender group analysis shows that there is a clearer delimitation of perception for men in comparison to women. This topic can be further researched in future studies in order to determine if this is related to the psychology of genders or if it is related to the gendered robot, as the anthropomorphic robot used in the research has had feminine features. These results have important managerial and practical implications, because depending on the situation and context in which the AI devices is involved, there will be needed stronger or weaker anthropomorphic features. For instance for emotional roles the AI device has to have stronger human like features, while for functional purposes these features are not that important.

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