

Can Synthetic AI Avatars Help Increase Survey Engagement and Deliver Better Data Quality in Asia?

Emerging technologies in quant research

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Introduction

Current industry projections suggest that the research and insights industry may be on the verge of a participation crisis, with many people disengaging with traditional online survey formats, making it difficult to gather quality insights. ESOMAR President, Ray Poynter (2022), warned that a possible data quality disaster might happen in 2023. There is an expectation that “tech” could provide the way forward, enabling more exciting survey experiences that truly connect with audiences.

Symrise partnered with MMR to understand whether emerging technology can drive consumer engagement and deliver crucial additional insights without significant additional investment amid a growing participation crisis in traditional online surveys. This paper showcases findings from a cutting-edge experimental study on the effective incorporation of synthetic video AI avatars (of researchers and/or research moderators), into quantitative consumer research in Asia. A video AI avatar is an AI-generated synthetic actor that looks and sounds exactly like a real person. This technology creates a performance directly from a script, a process called text-to-video. This is possible thanks to generative AI and neural video synthesis—i.e., through neural networks trained to reproduce the photo-realistic look and movements of a synthetic “researcher”.

Previous experiments in English speaking markets show that with the correct approach, AI-powered avatars can help boost average word count on the open-ended survey responses provided by participants by 44%. Moreover, the quality of the open-ended feedback shared was superior in comparison to more traditional ways of solicitation, providing more depth and enabling actionable recommendations. Symrise and MMR explored how these findings compare and contrast to non-English speaking Asian markets, in particular Indonesia. A six cells quantitative experiment was set up to evaluate the impact of different variations in the avatar’s appearance. This paper divulges to what extent the original hypothesis of increased engagement and better-quality data with AI avatars was proven in this market. It shares participants’ feedback on AI avatars with reference to the “uncanny valley” theory, and provides recommendations on implementation of this technology within diverse cultural contexts. This innovation is relevant to any sector conducting research.

Methodology

Research design

This study used a quantitative online survey with a sequential monadic concept test to assess consumer perceptions of new bouillon concepts based on four different written concepts. This methodological approach is commonly employed by consumer research agencies, and allowed for a controlled comparison of the various concepts. The survey was conducted in bahasa Indonesia across six different cells, incorporating a video of an AI avatar in four of them, while one of the remaining cells served as control cell and the other as a validation cell. The validation cell was verifying the use of the avatars versus personable written text on screen. All AI video avatars spoke in bahasa Indonesia.

Sampling and participants

The survey was completed by 636 people in Indonesia, recruited through an online panel. The sample recruited was 100% women as they represented the intended consumer demographic as the target audience for the bouillon product concept. 57% were daily hijab wearers.

Experiment conditions

The study employed six distinct cells, each representing a different experimental condition:

- Cell 1 control cell/Standard online survey: Participants were presented with the standard online survey format, which is considered the industry standard in 2023, without any AI avatars.
- Cell 2 personable written introduction: Participants were introduced to the survey through a written on-screen introduction in a personable conversational tone, designed to create a welcoming atmosphere. This used the same script that was used with the avatar cells
- Cell 3 local man avatar: Participants were greeted by a local man AI video avatar introducing the survey. The avatar's appearance was chosen in such a way as to be culturally appropriate for the target market (see Figure 1).
- Cell 4 local woman avatar: Participants were greeted by a local woman AI video avatar, with similar cultural considerations as in cell 3 (see Figure 2).
- Cell 5 woman hijab wearing avatar: Participants were introduced to the survey by a woman AI video avatar wearing a hijab, reflecting local cultural sensitivity. Note this avatar was not a complete match with what may be considered a typical south-east Asia appearance (see Figure 3).
- Cell 6 foreign woman avatar: Participants were greeted by a foreign (i.e., “western”-looking) woman AI video avatar (see Figure 4).



Figure 1



Figure 2



Figure 3



Figure 4

Articulatory of participants

It is not a secret that levels of articulatory vary across research participants. How do we balance the articulatory of consumers across multiple cells in this experiment? To address the potential imbalance in articulatory across the different cells, an additional screening question was incorporated into the study. To achieve a balanced distribution of participants with varying levels of articulatory across the cells, data was weighted to the average seen for high articulatory (25%) and low articulatory (75%). By doing so, it ensured that each cell had a proportional representation of participants with different articulatory levels, reducing potential biases associated with imbalanced responses; we have introduced a demerit score as a confidence level. Although the demerit score provided by the AI solution was not a direct articulatory measure, it served as a reliable approximation of the quality of participants' responses.

Through our testing we have found that bahasa Indonesian generally works well with demerit classification, without any apparent systematic issues. As with many of the lower resource languages, the score may not be quite as reliable as it is for English, but for most use cases it should serve well as one of many factors used to assess respondent quality. Whilst the demerit score was not based solely on the amount written, those who were classified as high articulatory were noted to write significantly more than those who were classed as lower articulatory. This means it was essential to achieve the balance between cells for this test in order to avoid one-cell bias simply by having more consumers who were happy to write more. This could be projected to future tests, potentially by requiring a minimum number of high articulatory consumers in each test to ensure enough value was achieved from any open-ended questions.

Word count	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 3 Local man avatar	Cell 4 Local woman avatar	Cell 5 Woman hijab wearing avatar	Cell 6 Foreign woman avatar
High articulatory	9.0 A	12.9 A	8.7 A	12.6 A	10.6 A	10.9 A
Low articulatory	5.5	6.2	5.4	5.4	5.4	5.5

Table 1: Articulatory of participants. A = significantly higher to low articulatory at 95% 1-tailed LOC a = significantly higher to low articulatory at 90% 1-tailed LOC.

Analysis and discussion

Do the AI avatars bias participants?

This study aimed to examine whether the use of synthetic video AI avatars had any impact on the participants' evaluation of the concepts that were tested. To measure this, we used a key metric: the average claimed appeal for each concept. The claimed appeal was calculated as the percentage of participants who rated the concept as very appealing or extremely appealing on a 10-point scale. We compared the claimed appeal across the different experimental cells, focusing on the cells that showed merit for enhancing spontaneous responses (cell 2 and cell 4). The results showed that there was no significant difference in the average claimed appeal for the concepts between cell 2 and cell 4, and between these cells and the control group (cell 1). This means that the use of avatars did not affect the participants' overall liking or preference for the concepts. Table 2 summarises the average claimed appeal for each concept by cell.

Overall liking (T3B)	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 4 Local woman avatar
Concept 1	87%	82%	91%
Concept 2	90%	91%	88%
Concept 3	89%	85%	88%
Concept 4	76%	71%	75%

Table 2: Overall liking scores. A = significantly different to cell 1 at 95% 1-tailed LOC a = significantly different to cell 1 at 90% 1-tailed LOC.

This finding should offer some reassurance that while these experiment factors have benefits for spontaneous feedback, they may not bias or significantly impact other key metrics for concept tests. The use of avatars and personable written introductions did not influence the participants' perception of the concepts in a positive or negative way, but rather enhanced their engagement and willingness to share their opinions. This suggests that both synthetic video AI avatars and personable on-screen language can be a valuable tool for quantitative consumer research, as they can improve the quality of data without compromising the validity of results.

Do the AI avatars make surveys more engaging?

This study also measured the self-reported engagement and interest of the participants in the survey, based on adapted Engagement Questionnaire developed by Hannum and Simons in 2020, to characterise consumer engagement during sensory and consumer testing. The Engagement Questionnaire consists of two categories: personal relevance and interest. Personal relevance measures the extent to which the participants find the survey meaningful and feel dedicated to finish it. Interest measures the extent to which the participants find the survey captivating and are motivated to expend extra effort during it. The participants were asked to rate their agreement with four statements related to these categories on a five-point scale, from strongly disagree to strongly agree. The results showed that there was no significant difference in the engagement metrics between the different experimental cells.

	Strongly agree (%)	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 3 Local man avatar	Cell 4 Local woman avatar	Cell 5 Woman hijab wearing avatar	Cell 6 Foreign woman avatar
Personal relevance	I found the survey meaningful	81%	82%	81%	78%	79%	73%
	I feel dedicated to finish the survey	79%	84%	79%	71%	79%	76%
Interest	I found survey captivating	84%	86%	83%	78%	84%	78%
	I was motivated to expend extra effort during the survey	74%	75%	80%	71%	74%	72%

Table 3: Engagement metrics. A = significantly different to Cell 1 at 95% 1-tailed LOC a = significantly different to cell 1 at 90% 1-tailed LOC.

Cell 2 (personable written introduction) has directionally the highest scores for personal relevance and interest categories in the survey engagement experience, but the difference is not statistically significant to the control cell (cell 1). The avatar cells (cell 3 to cell 6) did not show any problems with relevance or interest, although even in the control cell scores are high. This means that the use of synthetic video AI avatars did not affect the participants' engagement and interest in the survey, but rather maintained them at a high level. Even the man avatar (cell 3), which the authors hypothesised would generate lower levels of engagement, generated scores on par with the rest of the cells. This suggests that synthetic video AI avatars can be a neutral or positive factor for quantitative consumer research, as they can keep the participants engaged and interested without compromising their satisfaction or enjoyment.

How do participants feel about the AI avatars?

We also collected post-survey feedback from the participants who experienced the synthetic video AI avatars as survey moderators. The results showed that all cells with an avatar had very high agreement (over 70% top box) with finding the moderator experience engaging, enjoyable and repeatable. Table 4 summarises the percentage of participants who strongly agreed with each statement by cell.

% Strongly agree	Cell 3 Local man	Cell 4 Local woman (D)	Cell 5 Woman wearing	Cell 6 Foreign woman
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	(C)		hijab (E)	(F)
The video survey moderator experience was engaging	76%	68%	69%	71%
The video moderator made my survey experience more enjoyable	74%	69%	74%	71%
I enjoyed the video survey moderator experience	75%	71%	68%	70%
I would take part in research using a video survey moderator again	81%	75%	76%	72%

Table 4: AI video avatar experience feedback. Capital letter = significantly higher at 95% 1-tailed LOC. Small letter = significantly higher at 90% 1-tailed LOC.

There were no significant differences found between these four cells in video moderator experience, indicating that none of the avatars used were overly off-putting to consumers. This suggests that synthetic video AI avatars can be a feasible and attractive option for quantitative consumer research, as they can enhance the survey experience and encourage future participation. To measure the participants' perception of the synthetic video AI avatars, we used an adapted Godspeed questionnaire as a measure of potential uncanny valley indices of the synthetic video AI avatars. The results showed that the four cells with avatars had similar and high mean scores on most of the scales, indicating that the participants perceived the avatars as human-like, conscious, lifelike, elegant, likeable, friendly, kind and pleasant. Table 5 summarises the mean scores for each scale by cell. Slight fluctuations between the scores could be explained by differences in individual appearance of the avatars.

Mean score	Cell 3 Local man (C)	Cell 4 Local woman (D)	Cell 5 Woman wearing hijab (E)	Cell 6 Foreign woman (F)
Fake - Natural	4.0	3.9	3.9	3.8
Machine-like - Human-like	3.9 d	3.7	4.0 d	3.9
Unconscious - Conscious	4.3	4.2	4.4	4.3
Artificial - Lifelike	4.1	4.0	4.2 d	4.1

Speaking rigidly - Speaking elegantly	3.9	3.7	4.1 d	3.9
Dislike - Like	4.4	4.3	4.4	4.5
Unfriendly - Friendly	4.5	4.4	4.6	4.5
Unkind - Kind	4.5	4.3	4.4	4.4
Unpleasant - Pleasant	4.4	4.4	4.4	4.5
Awful - Nice	4.4	4.3	4.4	4.4 d

Table 5: Uncanny valley indices. Capital letter = significantly higher at 95% 1-tailed LOC. Small letter = significantly higher at 90% 1-tailed LOC.

This finding indicates that the participants did not have a negative perception of the synthetic video AI avatars, but rather a positive or neutral one. This implies that the avatars did not trigger the uncanny valley effect, but rather increased the perception of human likeness and attractiveness of the avatars. Spontaneous feedback on the avatars showed the main positives were that the survey was easier to understand with a clear explanation and instruction.

- “The experience is more lifelike, like there is interaction even if it's just with AI. Moderator personalisation is also very good. Thank you for appearing in this survey”.
- “The survey became more lively and caught my attention. And the voice of the moderator made me really enjoy during the survey”.
- “I really like it, like there is a good welcome and appreciation for the effort of doing the survey”.

However, the points that could be improved were generally around the lip movement, facial expressions and voice to be even more casual and relaxed.

- “The way of speaking should not be too stiff, just relax”.
- “What needs to be changed, is maybe the moderator can smile when giving an explanation”.
- “It sounds like Google assistant and stiff”.

Do the AI avatars boost open-ended survey answers?

One of the main objectives of this study was to evaluate the effect of using synthetic video AI avatars on the quality of open-ended answers provided by the participants. To measure this, we used two indicators: the average word count and co-occurrences of themes mentioned by participants. One of the key measures of articulacy was taken as the average number of words written per person, per concept in a question asking consumers to give their reaction to the concept.

Word count	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 3 Local man avatar	Cell 4 Local woman avatar	Cell 5 Woman hijab wearing avatar	Cell 6 Foreign woman avatar
Average 4 concepts	6.4	7.9 A	6.2	7.2 a	6.7	6.9

Table 6: Average word counts. A = significantly different to cell 1 at 95% 1-tailed LOC. A = significantly different to cell 1 at 90% 1-tailed LOC.

Of all the cells, on average only two cells showed a clear increase in the number of words used by respondents. The average word count (7.9) of cell 2 (personable written introduction) is significantly higher at 95% one-tailed LOC than the control cell (standard online survey; 6.4), and the highest of all cells—23% increase from control cell. Cell 4 (local woman avatar) also has a significant increase in word count from the control cell (7.2 versus 6.4)—13% increase from the control cell. All other avatar cells achieve a parity word count with the control cell, signifying no improvement is seen on this measure.

Interestingly, previous MMR experiments in an English-speaking market show a greater impact of the avatar boosting the average word count on the open-ended survey responses provided by participants by 44%. This difference could be down to the cultural context and nuances in respondent behaviours across different markets. Several factors may help explain the observed variation.

- Cultural communication styles: The tendency of some Asian cultures, like Indonesia, to gravitate towards high-context communication is well-documented, suggesting that participants from this region might prefer more implicit and contextually rich forms of communication. The nature and structure of communication in such contexts might not necessarily favour elongated or elaborate responses, especially in written formats (Nishimura, Nevgi & Tella, 2008).
- Avatar's relevance to the subject: In Indonesia, food preparation is largely associated with women (Retnaningsih, 2021). This is in line with the "match-up hypothesis", which posits that a message's effectiveness is enhanced when there's alignment between the endorser's profile and the product or topic at hand (Till & Busler, 2000). It's noteworthy that among all avatars, the man avatar elicited the fewest words in responses. This could suggest a perceived misalignment given the woman-centric nature of food preparation in Indonesia. This inference is further bolstered by feedback from some participants who expressed a preference for a woman avatar in this context.
- Comfort with technology: Different markets have varying levels of familiarity and comfort with technological interventions. The extended technology acceptance model (TAM2) indicates that factors like perceived usefulness and subjective norm can play roles in technology adoption (Venkatesh & Davis, 2000). Thus, the perceived usefulness of AI avatars could vary among different cultural contexts.
- Avatar appearance and cultural sensitivity: One of the cornerstones of effective engagement lies in cultural resonance and sensitivity, especially when interfacing with distinct demographics. A notable 57% of study participants were identified as daily hijab wearers, highlighting the cultural and religious significance of the hijab in this demographic. Recognising this, the study incorporated avatars that mirrored such cultural traits. The inclusion of the avatar in cell 5, which portrayed a woman hijab wearer, underscores this effort. However, it's important to note that while this avatar donned a hijab, its appearance wasn't a perfect representation of what might be typically recognised as a south-east Asian appearance. This choice was more of a constraint rather than a preference, dictated by the limited availability of avatars with hijabs. The deviation from an ideal match could have nuanced impacts on participant reception and engagement, underscoring the importance of ensuring

technological tools align as closely as possible with the target audience's cultural expectations and realities.

- Language nuances: Efficiency in communication can differ across languages, with some languages conveying the same information in fewer words (Evans & Levinson, 2009). bahasa Indonesia has fewer words than most languages, and might convey the same information in fewer words than English.

How long does the AI avatar impact last?

One of the research questions we wanted to answer was whether the impact of the avatar and human description on survey engagement and data quality would wear off as the respondents viewed more concepts. To test this, we randomised the order of the four concepts tested and measured the word count of the open-ended responses for each concept position. The word count is an indicator of how much detail and elaboration the respondents provided in their feedback.

Word count	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 4 Local woman avatar
1st concept seen	7.2	10.1 A	8.2
2nd concept seen	6.2	7.3 A	7.2
3rd concept seen	6.2	7.1	7.0
4th concept seen	6.0	7.0	6.5

Table 7: Impact of AI avatar in concept test setting. A = significantly different to cell 1 at 95% 1-tailed LOC. A = significantly different to cell 1 at 90% 1-tailed LOC.

Co-occurring themes	Cell 1 Control - standard online survey	Cell 2 Personable written introduction	Cell 3 Local man avatar	Cell 4 Local woman avatar	Cell 5 Woman hijab wearing avatar	Cell 6 Foreign woman avatar
	10	13	10	8	5	14

Table 8: Co-occurring themes.

The word count of cell 2 is significantly higher than the control cell in only concepts seen in first and second order, and no significant discriminations are found when it comes to the third concept onwards. This suggests that the closer to the experimental feature, the more impact it is likely to have in the survey. There is, however, still a directional increase throughout all four concept positions.

Do the avatars help elicit better quality data?

In this section, we focus on the results of a thematic analysis of the open-ended answers, using a natural language processing (NLP) platform with some human refinement. The thematic analysis aimed to identify and quantify the main topics that emerged from the participants' feedback, and to compare them across the

different experimental cells. This allowed us to assess whether the use of avatars influenced not only the quantity, but also the quality of the responses. After the open data has been post-coded in our NLP platform, we have accessed and compared the number of co-occurring themes. Co-occurrence enables us to discover and group concepts that are strongly related within the data-set; it is accessing the number of times the topics appear together. We hypothesised that the more co-occurring topics there are, the richer and more insightful the open-ended answer is. However, this hypothesis could be somewhat limited because we've established that bahasa Indonesia is more concise compared to many languages, often conveying the same information with greater linguistic economy than English.

Further comparative analysis of the co-occurring themes revealed that all experiment groups, except the control, frequently linked their responses to the theme of “uniqueness/innovative idea”. This pattern suggests that the AI avatars with the distinct language they employed (mirrored in the personable written introduction) may encourage deeper reflections among respondents. Specifically, participants appeared more attuned to the innovative aspects of the concepts presented, indicating a heightened awareness of their novelty and distinctiveness. The combination of AI avatars and well-crafted survey design seemed to encourage richer feedback, giving us a fuller picture of how participants viewed the newness of the ideas presented.

Do AI avatars in surveys increase dropout rates?

When evaluating survey methodologies, maintaining a low dropout rate is paramount to obtaining reliable data. The use of AI avatars does lead to a change in survey experience for respondents; this has one notable negative impact, which is that it drives up the dropout rate (see Figure 4).

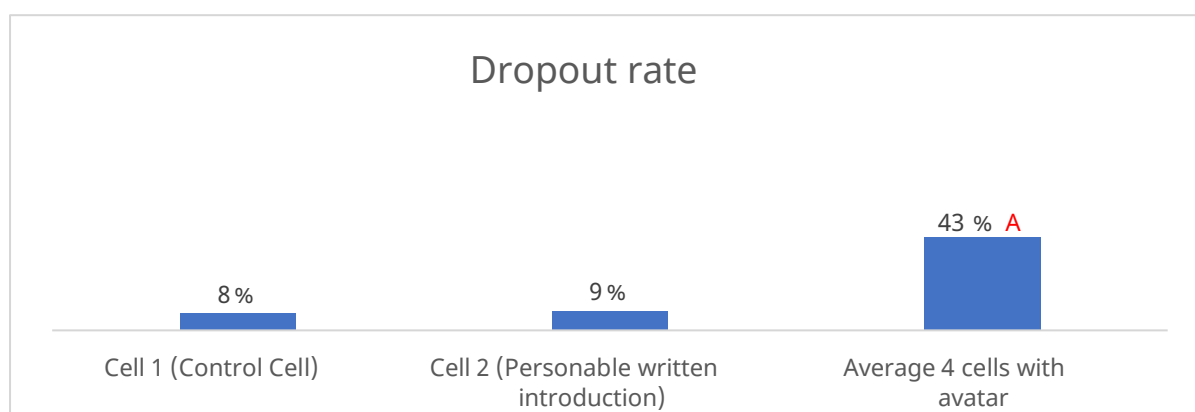


Figure 4: Dropout rate. A = significantly different to cell 1 at 95% 1-tailed LOC. A = significantly different to cell 1 at 90% 1-tailed LOC.

- Control group and written introduction: Traditional survey methodologies, like our control cell and the personable written introduction, maintained a dropout rate of 8% and 9% respectively.
- AI avatar introductions: Surprisingly, the inclusion of AI avatars resulted in a significant spike in the dropout rate, with an average of 43%—around double of what was observed in western markets.
- The use of the avatar therefore may pose some risk to completion speed and feasibility, especially for any low penetration target consumers.

Factors contributing to increased dropout rates with AI avatars

- **Mobile participation:** A significant 84% of participants accessed the survey via mobile devices. Video content can be data intensive. Previous research, such as by Suh et al. (2011), indicates that participants might be reluctant to consume videos due to concerns about depleting their mobile data.
- **Unexpected video content:** The sudden appearance of a video within a survey might not align with participant expectations, leading some respondents to opt out.
- **Technical challenges:** Issues such as buffering or extended load times for video content can deter participants from continuing.
- **Duration of Video:** Some participants who completed the survey found the avatar-based introductions too lengthy (video length was one minute and 18 seconds), which might have resulted in a reduced willingness to continue.

While the innovative approach of AI avatar introductions promises enhanced interaction, our findings suggest a careful balance is needed. It's vital to ensure the methodology matches the expectations and preferences of the target demographic. Considerations should be made about the context of participation (at home, on-the-go, etc.), the length and quality of video content and the potential technical limitations participants might face.

Conclusion and reflections

Impact of AI avatars in the Indonesian context

The deployment of AI avatars in survey methodologies for the Indonesian market showcased mixed outcomes. Indisputably, the incorporation of these avatars brought about a surge in word count and enriched the thematic depth of open-ended responses. Such granularity is indispensable in procuring intricate insights. Yet, this advantage is counterbalanced by an accentuated dropout rate, which could jeopardise the comprehensive representation of the data.

Our study showed that cell 2 (personable written introduction) and cell 4 (local woman avatar) had a positive effect on participants' immediate responses. It seems that surveys tailored to participants' backgrounds can encourage more spontaneous feedback. However, this effect reduces as participants move further into the survey, away from their first encounter with the avatar or personalised message. In a head-to-head comparison, an empathetically crafted written introduction mirrored, if not exceeded, the impact of an AI moderator. Intriguingly, while the avatar-enhanced cells registered high survey satisfaction levels, the variance from the control cell remained negligible. The personable written introduction (cell 2) took the lead in enhancing the survey engagement, denoting participants found the survey more purposeful, and were thus more committed to its completion. The women-centric demographic of our target sample may elucidate why the woman AI moderator stood out. Hypothetically, alignment with the respondents' demographic might be pivotal in cultivating consumer engagement.

Reflections on the uncanny valley theory

Participant feedback alluded to the avatars being somewhat off-kilter from genuine human likeness. This is reminiscent of Masahiro Mori's "uncanny valley" theory, suggesting that as robots or avatars appear more human, the emotional response of a human observer to the robot becomes increasingly positive and empathic,

until a point is reached where the response suddenly shifts to strong revulsion. As AI technology advances, refining these avatars to traverse the uncanny valley can potentially heighten user engagement.

Recommendations for diverse cultural contexts

- Localisation and personalisation: Customising avatars to echo local cultural traits and gender alignments may enhance their effectiveness.
- Cultural sensitivity: Ensuring technological tools match local cultural and demographic nuances is crucial. For instance, considering the significance of the hijab in Indonesia, an avatar donning it would likely garner better reception.
- Technical refinement: As technology evolves, making avatars more lifelike might ameliorate their acceptance, potentially mitigating the uncanny valley effect.
- Ponder the trade-offs: The heightened dropout rates with avatar inclusion is concerning. Deploying such technology necessitates careful consideration of its potential repercussions on survey feasibility and field duration. As this study has shown, simple tweaks of the language researchers use for on-screen instructions may yield impressive results for the quality of data and participant experience.

In conclusion, the Indonesian market—with its rich tapestry of cultural nuances—re-affirms the age-old saying: one size doesn't fit all. AI avatars, as intriguing as they might be, require meticulous customisation to truly resonate with participants and yield the desired outcomes.

Top three tips for survey engagement

1. Personalisation over avatars: Using AI-generated video avatars may not always be the best approach. As this study suggests, making small changes to the language of on-screen instructions can positively impact data quality and participant experience.
2. Cultural customisation of avatars: If avatars are part of your survey strategy, ensure they're culturally appropriate. The avatar's appearance should connect with your audience. When crafting the avatar's script in various languages, it's essential to do more than just translate; localise the language so it feels genuine and fits the culture. Where possible, get feedback from individuals of that particular culture.
3. Optimise technology for context: Think about the possible contexts in which respondents might participate. For example, if mobile response is expected, ensure the avatar displays correctly on mobile devices without consuming excessive data. Consider providing clear information about data usage to reassure participants.

Suggestions for future research

Exploring the connection between an avatar's demographic and cultural attributes and respondent engagement offers a promising direction for future research. It would be insightful to examine whether respondents engage more deeply or provide more spontaneous feedback when interacting with avatars mirroring their own cultural and demographic identities. In the intricate world of survey dynamics, another key question arises: how can we optimise the use of avatars and personalised statements, particularly in extended surveys? Given the potential pitfalls of the uncanny valley effect, it may be worth hypothesising that a delicate balance in avatar

exposure or subtle shifts in their presentation might counteract or mitigate this phenomenon, thereby sustaining respondent interest and improving data quality.

Lastly, with technology's swift advancement, we stand on the cusp of an avatar evolution. The not-so-distant future may see avatars transforming into responsive chatbots, underpinned by advanced language models, enabling two-way conversations. While early signs of this transformation are already evident, perfecting these avatars for qualitative data gathering remains a fascinating challenge. Conceptually, this shift could re-shape the research landscape, making it possible to undertake qualitative studies on a quantitative scale. The classic distinctions between “quantitative” and “qualitative” might merge, leading to a unified approach where research is simply that—research.

References

- Evans, N., and Levinson, S. C. (2009). The myth of language universals: Language diversity and its importance for cognitive science. *Behavioral and Brain Sciences*, 32(5). 429-448.
- Nishimura, S., Nevgi, A., and Tella, S. (2008). Communication style and cultural features in high/low context communication cultures: A case study of Finland, Japan, and India. In K. Kankaanranta & E. Louhiala-Salminen (Eds.), *Proceedings of the AFinLA Yearbook 2008*. 15-27.
- Poynter, R. (2022). Research and Insights in 2023: Ray's Predictions. *New MR*. Available: <https://newmr.org/blog/research-and-insights-in-2023-rays-predictions/>
- Retnaningsih, U. (2021). Women Roles for Healthy Lifestyles through Good Foods. *Proceedings of the 1st International Conference on Gender, Culture and Society. 30-31 August 2021, Padang, Indonesia*. Available: <https://eudl.eu/doi/10.4108/eai.30-8-2021.2316326>
- Suh, K.S., Kim, S., and Suh, E.K. (2011). Dual-Congruity Perspectives for Tailoring Avatar. *MIS Quarterly*, 35(3). 711-729.
- Till, B. D., and Busler, M. (2000). The match-up hypothesis: Physical attractiveness, expertise, and the role of fit on brand attitude, purchase intent, and brand beliefs. *Journal of Advertising*, 29(3). 1-13.
- Venkatesh, V., and Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2). 186-204.

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Appendix

Avatar script

Thank you for your responses so far. I'm <INSTER NAME>. Well, this is my digital avatar. I'm part of the team at MMR Research. I will personally be reading your answers, understanding your views and making recommendations to our clients.

I've got some ideas to share with you today. The first thing to note, is that these are not my ideas. I don't mind whether you love them or hate them. My job is simply to understand how you feel about them and why you're feeling that way.

I'd love to hear how they land with you. What is your first impression after reading these product descriptions? Did anything stand out that really resonated with you or, on the other hand, rubbed you the wrong way? If you were in the driver's seat, what would you consider tweaking in these descriptions?

Some of the detail might not be quite final yet—that's because these are just ideas and not fully thought out.

Your honest feedback plays a key role in helping our clients to develop and improve their products.

I'll share the ideas on the next screen.

Personable written introduction of concepts (cell 2)

Thank you for your responses so far. I'm Susi. I'm part of the team at MMR Research. I will personally be reading your answers, understanding your views and making recommendations to our clients.

I've got some ideas to share with you today. The first thing to note, is that these are not my ideas. I don't mind whether you love them or hate them. My job is simply to understand how you feel about them and why you're feeling that way.

I'd love to hear how they land with you. What is your first impression after reading these product descriptions? Did anything stand out that really resonated with you or, on the other hand, rubbed you the wrong way? If you were in the driver's seat, what would you consider tweaking in these descriptions?

Some of the detail might not be quite final yet—that's because these are just ideas and not fully thought out.

Your honest feedback plays a key role in helping our clients to develop and improve their products.

I'll share the ideas on the next screen.

Control cell text script

Thanks for your answer so far! On the next screen you will be shown a product idea. Please take a good look at the idea and read the description carefully before you move on. We will show you four ideas in total.

What do you like or dislike about the product idea?

