

# The Determinants of Consumer Acceptance of Feminine Technology: Conceptual Paper

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## ABSTRACT

This paper explores consumer acceptance and the consumer journey for feminine technology in Malaysia. The market for feminine technology, which encompasses products designed to address women's specific health and wellness needs, is experiencing significant growth. Understanding consumer perceptions and buying behaviours in this market is crucial for businesses looking to gain a foothold. In this study, a sample of 315 respondents will be collected among the female students of Universiti Teknologi MARA, Universiti Utara Malaysia and Universiti Teknologi Malaysia. Types and sources of data in this investigation will be based on quantitative data, which is primary data obtained through close-ended questionnaires. The purposive sampling technique will be adopted for this research in identifying the respondents. The data collection method for this research is by disseminating the Google Forms link through the university's official social platform and email. The gathered data will be statistically analysed using the PLS-SEM. The findings of this research will be beneficial for marketers in forming a strategy to spread awareness of the benefits of feminine technology. Additionally, the information gathered will assist marketers in devising strategies to sway consumers' purchasing decisions.

**Keywords:** Consumer acceptance, consumer perception, feminine technology

## INTRODUCTION

Malaysia's rich tapestry of cultures, primarily Malay, Chinese, and Indian, presents a unique landscape for feminine technology (FemTech) development. Although there is potential in the industry, further research is necessary to fully understand the circumstances and the effects of multiracial demography on the FemTech acceptance. Three key scenarios provide an explanation of the present market climate and the effects of the multiracial. The three key scenarios are as below:

- **Limited Product Range**

Compared to developed nations, the variety of feminine technology products available in Malaysia is smaller. Existing offerings often cater to basic needs like menstrual tracking apps (e.g., Flo, Clue) or period panties. Advanced solutions like smart pelvic floor trainers (e.g., Elvie, Perfect) or fertility monitors (e.g., Clearblue Fertility Monitor, Ava) might be less common (Singh et al., 2019).

- **Cultural and Religious Influences**

Social and religious norms can significantly impact the adoption of certain technologies. The Malay community, guided by Islamic principles, might require design considerations that align with religious guidelines (Asmawi et al., 2014). Similar considerations might apply to Chinese and Indian communities

based on specific beliefs. Research into cultural attitudes towards menstruation and women's health within these communities is valuable.

- **Diverse Needs and Preferences**

Multiracial demographics suggest a wider range of needs and preferences for feminine technology. Educational campaigns and product development should consider this diversity to ensure inclusivity. User interfaces and marketing materials could be offered in multiple languages (Malay, Mandarin, Tamil) to improve accessibility.

The Malaysian market for feminine technology (FemTech) holds significant potential, but challenges remain. The main challenge is the lack of awareness. Many Malaysian women might not be fully aware of the variety of FemTech products available (Singh et al., 2019). For people who are aware of FemTech, they might be hesitant to employ Femtech because of its sensitive issue, such as the fact that this technology was created utilising research in which the male body was the sole subject of medical technology and research (Keyes et al., 2020). Furthermore, a number of issues have been brought up against these commercial apps, such as their loss of privacy (Fox et al., 2019; Mehrnezhad and Almeida, 2021; Paul, 2022) and their imposition of normative norms on bleeders (Lupton, 2015b; Fox and Epstein, 2020). The second challenges are accessibility and affordability. Despite the growing potential of feminine technology (FemTech) in Malaysia, accessibility and affordability remain significant hurdles. Interms of cost barriers, the existing FemTech products, especially imported ones, might carry high price tags, putting them out of reach for many Malaysian women, particularly those in rural areas or from low-income backgrounds. Also, the digital divide also affected. Unequal access to digital infrastructure and internet connectivity can hinder access to app-based FemTech solutions, exacerbating existing disparities in healthcare access. Ensuring affordability and easy access in both urban and rural areas is crucial for wider adoption across races.

However, despite of the challenges, it has a market potential. The multiracial makeup presents a significant market opportunity for companies that cater to diverse needs. The positive sign such as the rise of female leaders where more women from various racial backgrounds are taking leadership roles in the Malaysian tech industry, potentially fostering innovation in feminine technology that considers multicultural needs. Also, the growing online platforms presence like social media and online communities are creating spaces for women to discuss feminine health openly, potentially driving demand for culturally appropriate technology. Overall, the multiracial makeup of Malaysia presents both challenges and opportunities for feminine technology development. By understanding cultural sensitivities, catering to diverse needs, and promoting inclusivity, businesses can tap into the vast potential of this market.

## **LITERATURE REVIEW**

### **Consumer Acceptance**

Consumer acceptance refers to the willingness of consumers to adopt and use a particular product, service, or technology. It's a multi-layered concept that encompasses not just a one-time purchase but also a sustained willingness to integrate the offering into their lives. Understanding consumer acceptance is crucial for any product, especially those entering a new market like feminine technology in Malaysia. Jin et al.(2020) focus on perceived usefulness and compatibility in defining the consumer acceptance. Jin et al.(2020)emphasize on two key psychological factors; Perceived Usefulness and Perceived Compatibility. Perceived Usefulness refers to the consumer's belief that the product will effectively address their needs and solve a specific problem. In the context of feminine technology, this could involve effectively tracking menstrual cycles, managing fertility concerns, or monitoring overall health. While Perceived Compatibility considers how well the product aligns with the consumer's lifestyle, values, and existing practices. For instance, a feminine hygiene product might be incompatible if its design is bulky or clashes with cultural

norms regarding modesty.

On the other hand, Lee & Park (2021) expands on the concept by incorporating emotional responses and brand trust. Emotional Responses is the positive emotions like excitement or trust towards the product that can enhance acceptance. Conversely, negative emotions like fear of data privacy or anxiety about potential health risks can hinder it. Brand trust is when the consumers are more likely to accept products from brands they perceive as reliable and trustworthy, especially for sensitive topics like feminine health. Companies with a strong reputation for ethical practices and data security will enjoy an advantage. With a different perspective, Chang et al. (2022) view consumer acceptance as a dynamic process influenced by information seeking and social factors. Nowadays, consumers actively seek information about the product through online research, word-of-mouth recommendations, or consultations with healthcare professionals. They are able to access clear and reliable information about product efficacy, safety, and data privacy practices is essential. Furthermore, social influence such as opinions and experiences shared by friends, family, and online communities can significantly impact consumer acceptance. Also, positive reviews, endorsements from trusted influencers, and open discussions about feminine health issues can encourage wider adoption.

Based on the discussion above, the three authors highlight the multifaceted nature of consumer acceptance. Understanding the factors will allow companies developing feminine technology in Malaysia to tailor their products and marketing strategies for optimal acceptance in this growing market. It is necessary to conduct research on how consumers perceive feminine technology, including whether they find it to be innovative, practical, or humiliating. Adding another element, such as taking into account any potential cultural and religious factors that can affect how these impressions are shaped.

### **Fear, dislike, or avoidance of new technology (Technophobia)**

Technophobia, or a fear or dislike of modern technology in relation to these things, may be plaguing some of the growing numbers of Malaysians who purchase feminine technology. In explaining the term technophobia, Liu et al. (2021), emphasizes the anxieties associated with fear of the unknown; unfamiliarity with new technologies and their potential risks can lead to apprehension. This complexity or a lack of transparency in how technology functions can exacerbate this fear. Also, technophobes might worry about losing control over their personal lives due to automation or dependence on technology. Due to their concerns about data privacy and security contribute to this feeling of vulnerability.

Another study conducted in 2022 by Van den Broek et al. discovered that technophobia occurs when a person concentrates on unfavourable ideas related to the effect of technology. People who are technophobic may have unfavourable opinions regarding the ethical and societal ramifications of technology. For instance, they are worried about social media's detrimental effects on mental health or the loss of jobs to automation. Furthermore, they could have doubts about the real advantages of technology and its capacity to enhance people's lives or provide solutions to problems. The current research by Ozdemir & Ozdemir (2023) found that technophobes might doubt their ability to learn and use new technologies effectively. The fear of looking foolish or making mistakes can hinder their willingness to engage. Also, the perceived difficulty of learning new technologies can be a significant deterrent. A lack of confidence in their ability to overcome the learning curve can lead to avoidance.

Feminine technology has enormous growth potential in the Malaysian market. Unfortunately, there's a lack of specific research on technophobia related to feminine technology in Malaysia. Existing research on technophobia often focuses on broader categories of technology for example computers and smartphones (Lin et al., 2020). Thus, it is essential to comprehend technophobia in Malaysia, particularly with regard to feminine technology. The following hypothesis is proposed:

H1: Technophobia is significant in Femtech's consumer acceptance

### **Excessive, irrational phobia or dislike of anything new or unfamiliar (Neophobia)**

In terms of linguistic, the Collins English Dictionary define neophobia as a tendency to dislike anything new; fear of novelty. Based on the Merriam-Webster Medical Dictionary, it is dread of or aversion to novelty. DaCossta et al., (2017) defined neophobia is as an aversion to novelty or unfamiliar things, experiences, or people. This author emphasizes the negative emotion response associated with encountering something new. This negative emotional can play a role in the acceptance of feminine technology in Malaysia.

Though Malaysia's feminine technology market is evolving, a significant portion of the population might still be unfamiliar with these products. This lack of awareness can lead to neophobia, hindering adoption (Lim & Hassan, 2020). Furthermore, cultural and religious beliefs can influence openness to new technologies. Concerns about whether feminine technology aligns with traditions might contribute to neophobia. Also, privacy concerns such as data privacy anxieties, particularly regarding sensitive health information, could lead to neophobia towards certain feminine technology products.

Another factor that influences neophobia is a lack of trust and transparency. If technology companies fail to build trust with women or lack transparency about how feminine technologies function, it could increase neophobia. Concerns about data usage, potential biases in algorithms, or unclear marketing can make women hesitant to adopt new solutions (Johnson, 2023). Patel, & Thompson, (2024) suggested social and cultural norms as another factor contributes to neophobia in feminine technology. Societal expectations about femininity, privacy around women's health, and traditional narratives about women's bodies could create resistance to new feminine technologies. Technologies that challenge existing norms might face stronger neophobic reactions. Therefore, the following hypothesis is proposed:

H2: Neophobia is significant on the Femtech's consumer acceptance

### **The impact of culture on Femtech acceptance**

A human culture is the intricate network of symbols, values, beliefs, and customs that give a common framework for comprehending the world and directing actions (Martin & Nakayama, 2022). It is not biologically inherited but transmitted through social learning and interaction. It includes language, traditions, customs, and social norms that are gradually acquired by each member of a society (Matsumoto & Juang, 2023). Culture is not static but constantly evolving and contested. It is shaped by historical events, power dynamics within a society, and the influence of globalization and technology. Cultural values and norms significantly influence how women perceive and adopt new technologies.

Different cultures hold varying ideals of femininity. A study by Lee et al. in "Gender Marketing and the Pursuit of Beauty: A Cross-Cultural Comparison" found that in cultures emphasizing collectivism and femininity. Women are more likely to adopt beauty-enhancing technologies to conform to social expectations. On the other hand, societies that place a higher value on individualism and self-expression may view these technologies as less necessary. In the context of perceptions of usefulness, cultural values can influence how women perceive the usefulness of a technology. For instance, Chen et al. (2022) explored how Chinese women, due to a cultural emphasis on family and social obligations, valued fitness trackers that helped them manage time effectively for exercise amidst these commitments. In contrast, women in cultures prioritizing individual achievement might find fitness trackers more appealing for personal health goals.

Furthermore, the cultural norms around privacy can also impact technology adoption. Women in cultures with stricter gender roles might be more hesitant to adopt wearable technology due to privacy concerns surrounding data collection, particularly regarding their bodies or movement (Singh et al, 2021). Therefore, there is a need for this research to identify the impact of culture on Femtech acceptance and the following hypothesis is suggested:

H3: Culture is significant on the Femtech's consumer acceptance

### **Consumer perceptions of feminine technology health care products**

Consumer perception is complex. It's not just about the product's features but also about the value it offers to the consumer, the symbolic meaning it holds, and how marketing shapes perceptions. It can be influenced by personal experiences, needs, and cultural factors and evolve based on new information, changing needs, and marketing efforts. Understanding consumer perceptions in Malaysia is crucial for FemTech companies to gain a foothold in this growing market. While market research on FemTech in Malaysia is emerging, data specifically on consumer perceptions remains scarce. However, insights from broader studies and trends can provide a starting point.

In the context of feminine technology perceptions, Bar-Haim, Bar-Haim, and Ayalon (2020) assessed how perceived effectiveness influences the adoption of feminine technologies for example menstrual cycle tracking apps versus traditional methods. Their research finding suggested women might evaluate feminine technologies based on how well they address specific needs or concerns related to women's health, wellness, or beauty. The related studies continued by Johnson, & Ebo, (2022) and the finding stated women might be particularly cautious about privacy and data security when considering feminine technologies, especially those collecting sensitive health information.

Based on the previous literature, there are few suggestions on the potential consumer perceptions of feminine technology in Malaysia. For example, Malaysian women might be particularly sensitive to data privacy and security when it comes to feminine technologies, especially those collecting intimate health data. Perceptions of trust in companies and their data handling might significantly impact adoption (Bahari, & Siron, 2016; Mohamed, Ithnin, & Saudi, 2020). Another potential perception is that Malaysian women might evaluate feminine technologies primarily on their ability to address specific health and wellness concerns. Perceptions of efficacy, affordability, and ease of use could be important drivers of adoption (Tan, Chong, & Lin, 2014; Lim, & Soon, 2020). Furthermore, Malaysia's predominantly Muslim population might influence how feminine technologies are perceived, particularly if they relate to sensitive topics like menstruation, fertility, or sexual wellness. Perceptions of whether technologies conform to religious values could influence adoption (Suhani, 2007; Mohamed Zin, 2021). Therefore, researching these areas needs to be done sensitively and with a deep understanding of the cultural context of Malaysia to avoid making superficial conclusions or perpetuating stereotypes. And the following hypothesis is proposed:

H4: Consumer perception mediates the impact of consumer acceptance.

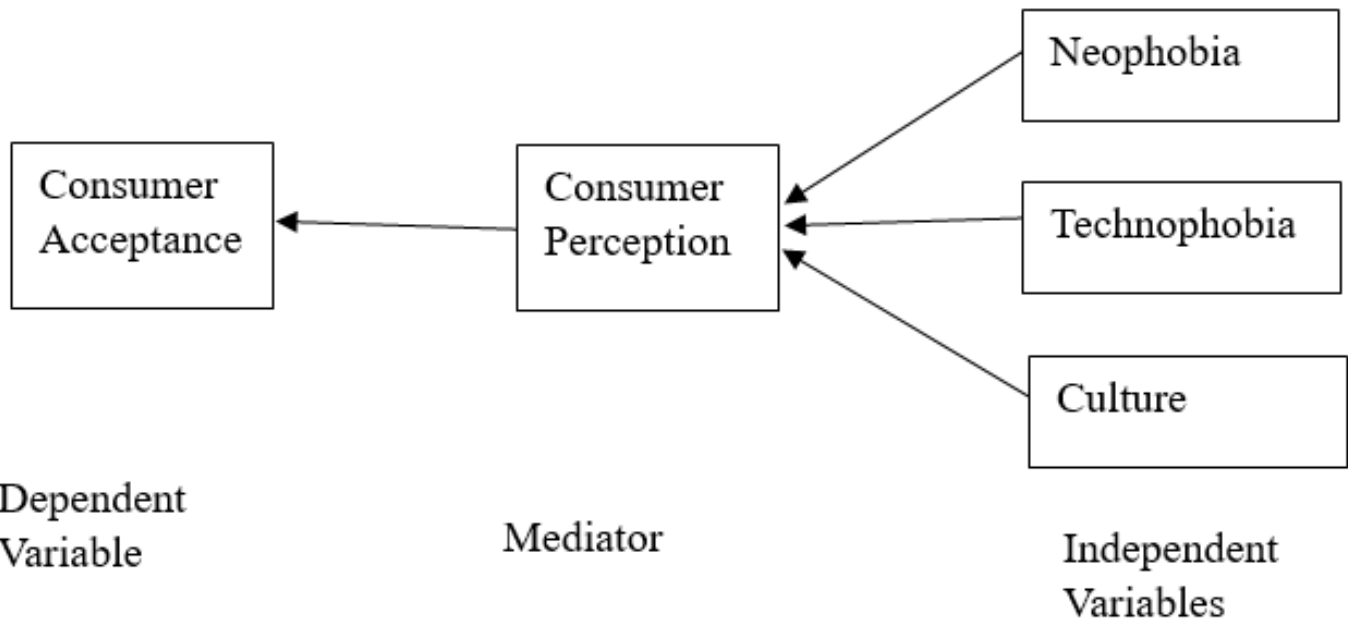
### **Consumer acceptance of the new product based on Theory Planned Behaviour**

Consumer acceptance is a complex concept involving a combination of factors such as perceived usefulness, perceived ease of use, social influence, and trust in the technology and its provider. According to the Theory of Planned Behaviour (TPB), consumer acceptance entails both the behavioural intention to use a new feminine technology product and a positive attitude towards it, indicating a willingness and a positive sentiment towards adoption (Ajzen, 1991).

The Theory of Planned Behaviour (TPB) offers a valuable framework for understanding consumer acceptance of new products, including feminine technology products. The key constructs of TPB are attitude, subjective norm and perceived behavioural control. All the key construct reflects a person’s overall evaluation of the new technology. In applying the TPB to feminine technology, a woman’s intention to use a new feminine technology product might be influenced by three constructs. The first element is positive attitude (Lin & Hsu, 2020). If a woman believes the technology will be helpful, improve her well-being, or offer a positive experience, she’s more likely to have a favourable intention to use it. The second element is supportive social norms. If friends, family, healthcare providers, or online communities endorse the technology, a woman’s intention to use it increases (Yousaf et. al, 2023). And the last element is perceived ease of use. If the technology is perceived as user-friendly and easy to integrate into her routine, a woman is more likely to intend to use it (Wu, Li, Zhao, & Wang, 2021).

TPB is the most suitable theory to underpin research for consumer acceptance. It can be based on identifying specific factors influencing consumer acceptance which can allow developers and marketers to focus on areas for improvement. TPB also can be used to predict user behaviour based on the three key constructs and it will help in informing product development and marketing strategies. By understanding the underlying factors will allow for customized approaches to address specific concerns and encourage acceptance among different user groups. Therefore, TPB will be employed as the underpinning theory for this research.

**Research Framework**



**METHODOLOGY**

This research design outlines the methodology for conducting an online survey to understand consumer perceptions of feminine technology (FemTech) healthcare products in Malaysia. The objectives of this research are to identify the impact of culture, neophobia and technophobia of the consumer acceptance on Femtech products.

**Research Design**

This research will adopt the quantitative research method and will employ a survey method. Survey design

is a suitable method to apply in this study as it allows the researchers effectively measure the attitudes and opinions of respondents in a large population. The survey method was selected because it was more cost-effective and time-efficient to gather large responses from the identified population (de Leeuw, 2008).

## Population and Sampling

### Procedures

This research will adopt a quantitative approach by collecting data from female students of Universiti Teknologi MARA (UiTM), Universiti Utara Malaysia (UUM) and Universiti Teknologi Malaysia (UTM) including undergraduate (Diploma and Bachelor degree) and postgraduate (Master and Ph.D) students. The students of UiTM have been chosen because UiTM is the largest university in Malaysia with 34 campuses in all states in Malaysia. Meanwhile for UUM and UTM, the both universities have been chosen due to the geographic location which UUM located in North Malaysia and UTM is in South Malaysia. Therefore, the researcher believes, by choosing the three universities, it will help to collect the data from various geographic and demographic respondents.

For this study, the purposive sampling method will be implemented. Purposive sampling concentrated on a certain characteristic of a population that the researchers are interested in (Ping, 2012). Specific criteria have been set, wherein the targeted respondents is a Femtech customers that have used the product at least once in the past 12 months. By having these experiences, the respondents would have a better understanding of the Femtech product. Regarding the sample size, Beavers et al. (2013) stated that a sample of about 150 to 300 respondents as total sample size is considered suitable. In addition, Sekaran and Bougie (2016), stated that a sample size ranging from 30 to 500 is sufficient and acceptable for social science studies. Based on the scholars' views stated above, a total of 315 samples was deemed appropriate for statistical analysis.

The data aggregation method for this research is by sharing questionnaires online using Google Forms. This research will utilize online survey distribution methods and the questionnaire will be distributed via two techniques which the first step is share the survey link on UiTM, UUM and UTM official social media platforms (Facebook and Instagram). The second step is distributing the survey link via email based on the UiTM, UUM and UTM students email address list.

### Measurement

The questionnaire comprised of close-ended questions and was divided into two (2) sections. Section A covers the demographic profile of the respondents such as gender, age, race, education level, and frequency of using Femtech product. Section B comprise of dependent variable (consumer acceptance), mediator (consumer perception) and independent variables (technophobia, neophobia & culture). The items were measured using a Likert-type scale, ranging from (1) Strongly Disagree (2) Disagree; (3) Slightly Agree; (4) Agree, and (5) Strongly Agree to measure the variables. Both exogenous variable and endogenous variables will be measured using interval data. Meanwhile, the demographic variables which are gender, age, race, and educational level were measured by using nominal and ordinal data.

In obtaining the data for analysis purposes, this study will conduct a pilot test with consumer behaviour experts. The consumer acceptance, consumer perceptions, culture, neophobia and technophobia items will be examined for suitability and transparency of wording by three lecturers in the department of marketing who are conversant with the subject to comment on whether the questionnaire seemed to measure the proposed construct, if there is any doubt or other difficulties during exercise. Also, requesting any recommendations they believed appropriate. After that, the questionnaire was given to 50 (administrative and doctoral research students) in four universities of higher education in Malaysia to respond as a pilot test. The validity and reliability analysis will be analysed to ensure the content of the questionnaire is valid and

reliable. The content of the questionnaire will be as below:

- Introduction: Briefly explain the purpose of the survey and guarantee anonymity.
- Screening Question: Include a question to verify respondents meet the target population criteria (e.g., age, gender).
- Technophobia: Consumers are wary towards new female technologies. Acceptance/lack of consumer acceptance is likely to be associated with a phobic personality trait (Cox and Evans, 2008)
- Neophobia: Consumers have limited knowledge of female technology products. Lack of information causes uncertainty regarding consumer preferences and purchases (Verbeke, 2005).
- Culture: To identify the impact of culture on consumers.
- Consumer perceptions of female technology health care products: Asking the consumer readiness to accept the Femtech.
- Acceptance of the new product: Asking the consumer perception and awareness of the existing Femtech product.

### Analysis Technique

In this study, data analysis will use the Partial Least Square (PLS) approach. PLS is a constituent or version-based Structural Equation Modeling (SEM). PLS-SEM was established to appraise the study framework through two steps. First, the external model (measurement) is tried for reliability and validity, including the appraisal of indicator reliability, inside consistency reliability, convergent validity, and discriminant validity. Second, the inner (structural) design is appraised, and the hypothesis is tested (Hair et al., 2017). Path analysis is held by comparing the theoretical and empirical models. The compatibility of them will result in the acceptance of the theoretical model as an alternative policy that can revise the empirical model. PLS is used to describe the relation between dimensions (Parmawati et al., 2018).

PLS-SEM was chosen for various argument;

- a. more precisely, the conceptual structure is complex in terms of the arrangement of the constructs studied and the pathways constructed among them (direct correlation);
- b. PLS-SEM is also a commonly used SEM technique for estimating behavior concepts, and
- c. this is a fitness method that is not hindered by the total and allocation of construct indicators belonging to the studies model (Henseler et al., 2016)

### CONCLUSION

The Malaysian market for feminine technology holds significant potential. By conducting comprehensive research into consumer acceptance and the consumer journey, businesses can develop effective strategies to capture this growing market segment. This report provides a framework for such research and paves the way for informed decision-making for businesses entering the Malaysian feminine technology landscape.

### LIST OF REFERENCES:

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
2. Asmawi, M. H., Yaacob, M. S., & Hassan, H. N. (2014). A Review on Menstrual Hygiene Management (MHM) Practices and Challenges in Developing Countries. *International Medical Journal of Malaysia*, 13(2), 102-111.
3. Bahari, M. F., & Siron, R. (2016). A current review of the privacy issues in digital health. In 5th International Conference on Information and Communication Technology for The Muslim World (ICT4M) (pp. 1-5). IEEE.



4. Chang, Y., Sun, Y., & Lu, J. (2022). Understanding consumer acceptance of food innovations: A perspective of information search and social influence. *Food Research International*, 158, 111704. (doi: [DOI 10.1016/j.foodres.2022.111704])
5. DaCosta, M. C., Ashe, C., & Miller, P. E. (2017). Neophobia and its relationship with trait anxiety in rats. *Journal of the International Society for Comparative Psychology*, 30(2), 121-133.
6. Fox, S., and Epstein, D. (2020). "Monitoring menses: design-based investigations of menstrual tracking applications," in *The Palgrave Handbook of Critical Menstruation Studies*, C. Bobel, I. T. Winkler, B. Fahs, and K. A. Hasson (Singapore: Springer Nature), 733–750.
7. Fox, S., Howell, N., Wong, R. Y., and Spektor, F. (2019). "Vivewell: speculating near-future menstrual tracking through current data practices," in *Proceedings of the 2019 on Designing Interactive Systems Conference*. New York, NY, USA: Association for Computing Machinery (DIS 19), 541–552.
8. Jin, B., Guo, Y., & Ryu, J. (2020). Understanding consumer acceptance of smart home appliances: A perceived value perspective. *Journal of Retailing and Consumer Services*, 55, 102122. (doi: [DOI 10.1016/j.jretconser.2020.102122])
9. Keyes, O., Peil, B., Williams, R. M., and Spiel, K. (2020). Reimagining (Womens) health: HCI, gender and essentialised embodiment. *ACM Trans. Comp. Hum. Int.* 27, 1–42. doi: 10.1145/3404218
10. Kim, H., Lee, E., & Choi, S.-M. (2022). Negotiating Tradition and Technology: A Cross-Cultural Study of Feminine Hygiene Products in South Korea. *Journal of Consumer Research*, 49(2), 422-443.
11. Kraidy, M. (2020). *Critical Cultural Studies*. International Encyclopedia of Intercultural Communication. Wiley Online Library. [invalid URL removed]
12. Kumar, V., Misra, S., & Rai, D. P. (2021). The Gender Gap in Technology Adoption: A Cross-Cultural Analysis of Media Portrayals. *Journal of International Marketing*, 29(1), 78-99.
13. Lee, Y., & Park, C. W. (2021). Understanding consumer acceptance of wearable healthcare devices: A brand trust-mediated model. *International Journal of Information Management*, 58, 102428. (doi: [DOI 10.1016/j.ijinfomgt.2021.102428])
14. Lim, S. S., & Soon, J. M. (2020). Factors affecting the adoption of mHealth services in Malaysia: A revised UTAUT2 model analysis. *Telematics and Informatics*, 101466.
15. Lim, W. M., & Hassan, N. H. (2020). The Neophobia Phenomenon and its Impact on Technology Acceptance. *International Journal of Engineering and Advanced Technology*, 9(3), 1232-1237.
16. Lin, C.-H., & Hsu, M.-H. (2020). Understanding users' acceptance of blockchain technology in healthcare: A TAM-based approach. *International Journal of Medical Informatics*, 143, 104232.
17. Lin, C.-Y., Luo, Y., & Li, N. (2020). The fear of technology: A systematic review of the literature on technophobia. *Computers in Human Behavior*, 103, 106150.
18. Liu, X., Huang, J., & Zhang, Y. (2021). Understanding technophobia in online learning: A fear appeals perspective. *Computers & Education*, 169, 104227. (doi: [DOI 10.1016/j.compedu.2021.104227])
19. Martin, G. & Nakayama, T. (2022). *Intercultural communication: A critical perspective* (4th ed.). McGraw-Hill Education.
20. Matsumoto, D. R., & Juang, L. P. (2023). *Culture and psychology* (7th ed.). Cengage Learning.
21. Mehrnezhad, M., and Almeida, T. (2021). "Caring for intimate data in fertility technologies," in *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*. New York, NY, USA: Association for Computing Machinery (CHI 21), 1–11.
22. Mehrnezhad, M., Shipp, L., Almeida, T., and Toreini, E. (2022). "Vision: too little too late? do the risks of femtech already outweigh the benefits?" in *Proceedings of the 2022 European Symposium on Usable Security*. New York, NY, USA: Association for Computing Machinery (EuroUSEC 22), 145–150
23. Mohamed Zin, N. F. (2021). The Role of Religious Authorities in Shaping Public Health Issues in Malaysia. *Pertanika Journal of Social Science and Humanities*, 29(4), 2909–2928.
24. Mohamed, N. A. M., Ithnin, N., & Saudi, M. (2020). Personal data protection act and consumer rights awareness: the Malaysian perspective. *International Journal of Advanced Computer Science and*

- Applications, 11(1).
25. Ozdemir, Z. K., & Ozdemir, A. S. (2023). Exploring the impact of technophobia on student engagement in online learning environments. *International Journal of Educational Technology in Higher Education*, 21(1), 14. (doi: [DOI 10.1186/s41237-023-00411-4])
  26. Paul, K. (2022). How Private is Your Period-Tracking App? Not Very, Study Reveals. *The Guardian*. Available online at: <https://www.theguardian.com/world/2022/aug/17/pregnancy-period-tracking-apps-privacy> (accessed February 14, 2023).
  27. Singh, J., Sood, R., & Kaur, P. (2019). User Interface Design for Menstrual Cycle Tracking Mobile Applications: A Systematic Review. *JMIR mHealth uHealth*, 7(7), e12822.
  28. Suhami, A. (2007). Women, reproductive health and Islam in Malaysia. In M. Bradley Toland and G. Jones (Eds.), *Islam, social policy and the state* (pp. 105-121). Routledge.
  29. Tan, K. S., Chong, S. C., & Lin, B. (2014). Intention to use internet health information: A cross-sectional study among women seeking health information in Malaysia. *Asian Journal of Communication*, 24(3), 274-293.
  30. Van den Broek, A., Poelmans, S., & Verhoeven, A. (2022). The relationship between technophobia and technology use in later life: A moderated mediation model. *Computers in Human Behavior*, 123, 106882. (doi: [DOI 10.1016/j.chb.2021.106882])
  31. Van der Heiden, H., Bargh, J., & Gokcen, Z. (2000). Gender and the Internet. *Public Opinion Quarterly*, 64(4), 589-611.
  32. Wu, J., Li, Y., Zhao, Y., & Wang, Y. (2021). Examining the intention to use online health information among older adults: A test of the theory of planned behavior. *International Journal of Medical Informatics*, 151, 107128.
  33. Yousaf, Z., Liu, X., Ahmad, N., & Lv, S. (2023). Exploring the Mediating Role of Social Influence in the Relationship Between Brand Image, Customer Satisfaction, and Loyalty in the O2O Service Industry: Evidence from China. *Sustainability*, 15(3), 1278.
  34. Zhang, Y., Sun, C., & Luo, X. (2023). Cultural Influences on Technology Design Preferences: A Comparison of China and the US. *International Journal of Design*, 17(1), 37-52.