Preface to the 6th International Workshop on Personalizing Persuasive Technologies (PPT 2022)

Ifeoma Adaji[1], Kiemute Oyibo[2], Rita Orji[3], Jaap Ham[4], Oladapo Oyebode[3]

[1]University of British Columbia, Canada; [2]University of Waterloo, Canada;
[3]Dalhousie University, [4]Eindhoven University of Technology, Netherlands
[1]`ifeoma.adaji@ubc.ca;` [2]`kiemute.oyibo@uwaterloo.ca;`
[3]`rita.orji@dal.ca;` [4]`j.r.c.ham@tue.nl;` [3]`oladapo.oyebode@dal.ca`

1 Introduction

Research in persuasive technology (PT) and behaviour change systems has seen significant growth over the last couple of years. One area of PT that still poses challenges to researchers is the area of personalizing persuasive technologies. Research suggests that persuasive technologies are more likely to result in the desired behaviour or attitude change when they are personalized to an individual or groups of similar individuals [12]. Attempts have been made in different domains to personalize persuasive technologies using various user traits. For example, individual characteristics such as personality type [6, 15, 24], age [19], gender [20], gamer type [21, 23], culture [5], and individual's susceptibility to persuasive attempts [13, 14] have been used for tailoring persuasive strategies. Research has also explored how various psychological processes can be used to explain the persuasive effect of tailoring [7, 8, 10]. Furthermore, in e-commerce, consumers' shopping motivation [3, 4] and online shopping behaviour [1, 2] have been used in personalizing PT.

Despite these advances, there are still many unexplored issues regarding the design, implementation, and evaluation of personalized persuasive systems and the efficacy of personalized persuasive systems in different domains. In addition, the best approach to tailoring PT is still unclear. Furthermore, there are calls for a more dynamic and data-driven approach to personalization where current machine learning and artificial intelligence algorithms can be applied to the data generated by persuasive technology applications. This workshop aims to bring experts in the domain of personalized persuasive technologies that can engage in open discussions around these topics.

2 Previous PPT Workshops

Five editions of this workshop have been held successfully in the past in conjunction with the Persuasive Technology Conferences from 2016 to 2020. All the workshops resulted in several peer-reviewed papers on a variety of topics in PPT including methods, theories, systems, and domains [16–18, 22]. Hundreds of participants from more than 20 different countries participated in the previous workshops. The workshops offered a platform for networking and exchanging of ideas for scholars and practitioners from both academia and industry. The workshops also resulted in archived proceedings published with CEUR publishing and a special issue in 2019. This year's full-day workshop will build on the success of the previous editions and advance the research are a

further by addressing outstanding challenges and opportunities identified during the previous workshops while identifying new ones.

3   Workshop Organizers

The workshop was organized by the following program co-chairs:

- Ifeoma Adaji, University of British Columbia, Canada

- Kiemute Oyibo, University of Waterloo, Canada

- Rita Orji, Dalhousie University, Canada

- Jaap Ham, Eindhoven University of Technology, Netherlands

- Oladapo Oyebode, Dalhousie University, Canada

4   Accepted Papers

Due to current COVID-19 restrictions and the hybrid nature of the conference, this year's workshop will hold virtually. We anticipate that over 20 participants will attend this year's virtual workshop from various countries around the world. Four papers were accepted to be presented at this year's workshop from a range of research areas on designing effective and personalizing persuasive technologies. Each paper received two reviews in double-blind review process.

In the first paper titled "*Contact Tracing Apps: A Comparative Analysis of Canada's COVID Alert and India's Aarogya Setu based on Persuasive System Design Model*" [25], the authors compared the COVID-19 contact tracing app of Canada to that of India using the Persuasive System Design (PSD) model to identify any similarities and differences between both apps. The authors concluded that the Indian app implemented more persuasive features than the Canadian app.

In the second paper titled "*What if Gamified Software is Fully Proactive?" Towards Autonomy-Related Design Principles*" [9], the authors proposed four formal principles for the design of autonomous gamified systems, which are based on argumentation-based games commonly used in describing the interaction between an agent and a user.

In the third paper titled "*A Longitudinal Study Examining the Sustainability of the Behavioural Intention to Stop Smartphone Zombie Behaviour*" [26], the authors examined the sustainability of the intention and willingness to stop zombie behaviours in a longitudinal survey among three groups of participants. The three groups were presented different numbers of text-based persuasive images corresponding to their group number to change smartphone zombie behaviour. The results showed a significant effect of group (i.e., message combination) on behavioural intention. The authors concluded that for people to stop using their smartphones while walking and maintain it, they need to be informed of the danger of smartphone zombie-like behaviour.

Finally, in the fourth paper titled "*A Neuropsychological Perspective on Praise and Rewards in Persuasive Technology*" [11], the authors present results from a literature review that explores how perspectives from neuropsychology could contribute to the area of persuasive technology, particularly the use of praise and rewards.

References

[1]   Adaji, I., Nafisul, K. and Vassileva, J. 2021. Level of Involvement and the Influence of Persuasive Strategies in E-commerce: A Game-Based Approach. *UMAP 2021 - Adjunct Publication of the 29th ACM Conference on User Modeling, Adaptation and Personalization*. (Jun. 2021), 325–332. DOI:https://doi.org/10.1145/3450614.3464626.

[2]   Adaji, I., Oyibo, K. and Vassileva, J. 2018. Consumers' Need for Uniqueness and the Influence of Persuasive Strategies in E-commerce. *International Conference on Persuasive Technology* (Waterloo, 2018), 279–284.

[3]   Adaji, I., Oyibo, K. and Vassileva, J. 2020. E-Commerce Shopping Motivation and the Influence of Persuasive Strategies. *Frontiers in Artificial Intelligence*. 3, (2020), 67.

[4]   Adaji, I., Oyibo, K. and Vassileva, J. 2019. Shopping motivation and the influence of perceived product quality and relative price in e-commerce. *ACM UMAP 2019 Adjunct - Adjunct Publication of the 27th Conference on User Modeling, Adaptation and Personalization* (2019).

[5]   Adaji, I. and Vassileva, J. The Impact of Culture on The Factors That Influence Healthy Shopping Habits in E-commerce. *Adjunct proceedings of the 13th International Conference on Persuasive Technology, April 2018*.

[6]   Alkış, N. and Taşkaya Temizel, T. 2015. The impact of individual differences on influence strategies. *Personality and Individual Differences*. 87, (Dec. 2015), 147–152. DOI:https://doi.org/10.1016/J.PAID.2015.07.037.

[7]   Dijkstra, A. 2014. The persuasive effects of personalization through: name mentioning in a smoking cessation message. *User modeling and user-adapted interaction*. 24, 5 (2014), 393–411.

[8]   Dijkstra, A. 2008. The Psychology of Tailoring-Ingredients in Computer-Tailored Persuasion. *Social and Personality Psychology Compass*. 2, 2 (Mar. 2008), 765–784. DOI:https://doi.org/10.1111/J.1751-9004.2008.00081.X.

[9]   Guerrero, E., Vartiainen, T. and Kalmi, P. What if gamified software is fully proactive? Towards autonomy-related design principles. *Personalizing Persuasive Technologies Workshop*.

[10]   Hawkins, R., Kreuter, M. and Resnicow, K. 2008. Understanding tailoring in communicating about health. *Health education research*. 23, 3 (2008), 454–466.

[11]   Holst, B.G. and Gram-Hansen, S.B. 2022. A Neuropsychological Perspective on Praise and Rewards in Persuasive Technology. *Personalizing Persuasive Technologies Workshop* (2022).

[12]   Kaptein. Maurits 2011. Adaptive persuasive messages in an e-commerce setting: the use of persuasion profiles. *European Conference on Information Systems* (2011), 183.

[13]   Kaptein, M., Markopoulos, P., de Ruyter, B. and Aarts, E. 2009. Can you be persuaded? individual differences in susceptibility to persuasion. *Human-Computer Interaction–INTERACT 2009*. Springer. 115–118.

[14]   Kaptein, M., Ruyter, B. De and Markopoulos, P. 2012. Adaptive persuasive

systems: a study of tailored persuasive text messages to reduce snacking. *ACM Transactions on*. (2012).

[15]   Okpo, J., Masthoff, J., Dennis, M. and Beacham, N. 2017. Investigating the impact of personality and cognitive efficiency on the selection of exercises for learners. *UMAP 2017 - Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization* (2017), 140–147.

[16]   Orji, R., Busch, M., Dijkstra, A., Reisinger, M., Stibe, A. and Tscheligi., M. 2016. Personalization in Persuasive Technology. *Adjunct Proceedings of the 11th International Conference on Persuasive Technology* (2016), 96–99.

[17]   Orji, R., Ham, J., Oyibo, K., Nwokeji, J. and Oyebode, O. 2020. Personalizing Persuasive Technologies Workshop 2020. *Personalizing Persuasive Technologies Workshop 2020* (2020).

[18]   Orji, R., Kaptein, M., Ham, J., Oyibo, K. and Nwokeji, J. 2018. Personalizing Persuasive Technologies: A Road Map to the Future. *Persuasive Technology* (Waterloo, Canada, 2018).

[19]   Orji, R., Mandryk, R. and Vassileva, J. 2015. Gender, age, and responsiveness to Cialdini's persuasion strategies. *Proceedings of International Conference on Persuasive Technology* (Chicago, 2015), 147–159.

[20]   Orji, R., Mandryk, R. and Vassileva, J. 2014. Gender and persuasive technology: Examining the persuasiveness of persuasive strategies by gender groups. *International Conference on Persuasive Technology* (2014), 48–52.

[21]   Orji, R., Mandryk, R.L., Vassileva, J. and Gerling, K.M. 2013. Tailoring persuasive health games to gamer type. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '13* (New York, New York, USA, 2013), 2467.

[22]   Orji, R., Reisinger, M., Busch, M. and Dijkstra, A. 2016. Preface to the International Workshop on Personalization in Persuasive Technology: Research Challenges and Opportunities Strategies. *International workshop on personalization in persuasive technology* (2016), 5–9.

[23]   Orji, R., Vassileva, J. and Mandryk, R.L. 2014. Modeling the efficacy of persuasive strategies for different gamer types in serious games for health. *User Modeling and User-Adapted Interaction*. 24, 5 (Dec. 2014), 453–498. DOI:https://doi.org/10.1007/s11257-014-9149-8.

[24]   Oyibo, K., Orji, R. and Vassileva, J. 2017. Investigation of the Influence of Personality Traits on Cialdini's Persuasive Strategies. *Personalizing Persuasive Technologies Workshop*. (2017), 4–04.

[25]   Oyibo, K., Serdah, S., Karkhanis, K. and Morita, P.P. 2022. Contact Tracing Apps: A Comparative Analysis of Canada's COVID Alert and India's Aarogya Setu based on Persuasive System Design Model. *Personalizing Persuasive Technologies Workshop* (2022).

[26]   Sakai, T., Masato, T., Kuriki, Y., Minamikawa, A. and Ono, C. 2022. A Longitudinal Study Examining the Sustainability of the Behavioural Intention to Stop Smartphone Zombie Behaviour. *Personalizing Persuasive Technologies Workshop* (2022).