
Cristina Figueroa Domecq, PhD
University of Surrey, UK

Allan Williams, PhD
University of Surrey, UK

Anna de Jong, PhD
University of Surrey, UK

Alessandra Alonso
Women in Travel CIC, UK

Technology is a woman's best friend: Entrepreneurship and Management in Tourism

Technology and ICT's are key for entrepreneurs and managers in the tourism and hospitality industry. But technology is not gender neutral and the research literature confirms women's limited participation in high-tech organizations and positions. The aim of this research note is to show the initial results of an exploratory analysis that evaluates the relation between women's perception of the ease-of use and usefulness of technology, and the future technological development and progress of their businesses, either as entrepreneurs or corporate entrepreneurs. The paper considers whether technology is women's best friend, or another source of barriers.

Key words: gender, women, tourism, technology, Technology Acceptance Model

Cristina Figueroa Domecq
School of Hospitality and Tourism Management
University of Surrey
Stag Hill, Guildford GU2 7XH, England
United Kingdom
Email: c.figueroadomecq@surrey.ac.uk

Allan M. Williams
School of Hospitality and Tourism Management
University of Surrey
Stag Hill, Guildford GU2 7XH, England
United Kingdom
Email: allan.williams@surrey.ac.uk

Anna de Jong
School of Hospitality and Tourism Management
University of Surrey
Stag Hill, Guildford GU2 7XH, England
United Kingdom
Email: a.dejong@surrey.ac.uk

Alessandra Alonso
Women in Travel CIC
London, United Kingdom
Email: alessandra@womenintravelcic.com

Cristina Figueroa-Domecq. Marie Curie Research Fellow at the University of Surrey. Her research focuses on gender studies in tourism, especially entrepreneurship and management.

Allan M. Williams. Professor of Tourism and Mobility Studies at the University of Surrey. His research focusses on the relationship between mobility and economic relationships, especially entrepreneurship, innovation, productivity and migration.

Anna de Jong. Lecturer at the University of Surrey. Her research examines social and cultural diversity with tourism development contexts; with specific focus on gender and sexuality.

Alessandra Alonso. Founder and CEO of Women in Travel CIC.

INTRODUCTION

Innovation, technology and Information and Communication Technologies (ICT) are some of the aspects which most determine entrepreneurial activities (e.g. Tshabalala & Ezeuduji, 2016) and a firm's competitive position (e.g. Martinez Dy, Marlow & Martin, 2017; Accenture, 2014; Pulido et al. 2011). ICTs have generated a new paradigm-shift reviewing the hospitality and tourism industry structure and increasing its range of opportunities (e.g. Fazzolari & Petrocchi, 2018; Neidhardt & Werthner, 2018; Tussyadiah, 2016; Tussyadiah & Miller, 2019).

But as ICTs matures, forms of digital exclusion proliferate: digital disparities in access are joined by digital engagement gaps, chasms between content consumers and producers, and disparate forms of participation in the high-tech economy (Robinson et al. 2015). Technology is not neutral from a gender perspective, as computer and programming associate with masculine characteristics and women establish different relationships than men with technology (e.g. Kelan, 2007; Hill, Corbett & St Rose, 2010; Figueroa-Domecq et al. 2019). Popular stereotypes associate science and math fields with "male" and humanities and arts fields with female characteristics, defining women and girls' interest in Science, Technology, Engineering and Maths (STEM) careers and their own confidence in their capabilities (e.g. Caderet et al. 2017; Omar et al. 2018).

Gender differences in technology are observed from two different perspectives: The level and type of technology used by women (Martinez Dy, Marlow & Martin, 2017; Koppi et al. 2010; Soleymani et al. 2012) and the position of women as producers, employees and managers in high-tech positions (Robinson et al 2015; Kimosop, Korir & White, 2016; Koppi et al. 2010, Wickramasinghe, 2009).

Globalization, workforce diversity and technological advances (Omar et al. 2018) in tourism industry (Bharwani & Talib 2017; Baum 2013) require for a new management scenario where gender diversity is crucial for success and creativity. Women are extremely relevant as decision makers in families and as individuals (Barlés-Arizón et al. 2012; Rojas-de-Gracia et al. 2018; Figueroa-Domecq et al. 2010) as well as employees, entrepreneurs and managers (e.g. Santero-Sanchez et al. 2015; Costa et al. 2017). Women are not safe from dealing with the disclosure of new technology and ICTs, and technology is a key opportunity for women to be developed in the future in various fields, especially entrepreneurship (Omar, Salman & Rahim, 2017).

However, how socially marginalized or disadvantaged people, among them women, have experienced this shift around ICTs, remains under-explored and the relationship between digital inequalities and other forms of inequality has yet to be fully appreciated (Martinez Dy, Marlow & Martin, 2017:281; Robinson et al 2015). Limited research, specifically upon women digital entrepreneurs, has been based on assumptions of a 'neutral' Web, thus, the way the phenomenon is gendered, racialized or affected by class position remains under-explored (Martinez Dy, Marlow & Martin, 2017:287). At a tourism and hospitality research level, regardless the importance of this topic, there is extremely limited research in this area (Figueroa-Domecq et al. 2019; Figueroa-Domecq et al. 2010).

Consequently, the aim of this research note is to show the preliminary results of an exploratory analysis that evaluate the gender technological gap (GTG) among female managers and entrepreneurs in the tourism and hospitality industry.

The Research Objectives (RO) that arise from this general objective are:

RO1. To evaluate women's perceived level of confidence and know-how around the usage of technology in their workspace, and the gap with the importance of these technologies for their businesses.

RO2. To understand their perception towards technology ease of ease and usefulness, and their intention to use in the future.

RO3. To understand the main barriers to overcome the current GTG and alienation with future expected scenarios.

THEORETICAL FRAMEWORK

Understanding and creating the conditions under which ICTs and information systems will be embraced by the human organization remains a high-priority research issue (Venkatesh & Davis, 2000).

According to Dwivedi et al (2019), research in this area has resulted in a diverse set of models around the theory that explains individuals' intention to use technology and innovate, which have their origins in information systems, psychology, and sociology (e.g., Davis, 1989; Venkatesh and Davis 2000; Venkatesh et al. 2003). Women are more likely to underestimate their technological capabilities and skills, if compared to men, so a gendered technological gap arises (Hargittai & Shaw, 2015). Recent evidence suggests that digital inequalities intersect with gender through the gendering of skills and content production patterns and through a gendered labour market in technology (Robinson et al. 2015). Even though women adopt and use ICTs at the same rates as men (Fountain, 2000), men still far outnumber women among ICTs developers and designers (Robinson et al. 2015).

When evaluating digital inclusion, or the GTG, Walton et al (2013) places four main dimensions: awareness, capacity, availability and accessibility. The first two dimensions, awareness and capacity evaluate capabilities perception and digital literacy capacity. The other two dimensions consider availability, seen from price and infrastructure dimension, and accessibility, as how far digital accessibility all individuals have (Omar, Salman & Rahim, 2017).

Two other important variables become relevant, based on the Technology Acceptance Model (TAM) (Davis, 1989). This model suggests that perceived usefulness and perceived ease of use are beliefs about a new technology that influence an individual's attitude toward and use of that technology (Davis, 1989).

So, the identification of capabilities, perceived ease of use, usefulness and barriers for technological implementation can throw light in the evaluation of the GTG in tourism.

METHODOLOGY

This exploratory analysis wants to leverage the lack of research in this area and try to understand the impact of the gender technology gap in the tourism industry. For this reason, a survey has been identified as the best research method, to reach the highest number of women, from a global perspective.

Target: female entrepreneurs and corporate managers working in the tourism and hospitality industry, and which are active members of a network related to women and tourism.

Sampling method: to overcome the inherent access to female entrepreneurs and corporate managers at a tourism level, the initial contacts will be made through Women in Travel CIC newsletter. This organization has direct contact with more than 1,000 women all around the world.

Sample: it is expected to obtain 100-150 responses. Currently, the analysis will be based on the responses of 42 female participants, which will be the basis for the pre-test.

Survey structure: The theoretical framework shows that the main measures used in the survey are sets of items to measure the following traits: Technological know-how and confidence; Business characteristics and technological level; technology perceived usefulness and ease of use; barriers to tech-adoption and future implementation of technology. Finally, as control data specific personal characteristics about the participants have been included.

The survey starts questioning participants about their **technological level capabilities** (DeSarbo et al 2005): How would you describe your following Information Technology (IT) capabilities? (Likert scale 1-5; Completely disagree, Disagree, Neither agree nor disagree, Agree, Completely agree): IT systems for New Product Development projects; IT systems for operational integration; IT systems for tech knowledge creation; IT systems for marketing knowledge creation; IT systems for internal communication. The scale demonstrated good reliability, with coefficient Alpha Cronbach equalling 0.859.

Also, several technologies have been identified due to their relevance for the tourism and hospitality industry and participants have been requested to evaluate their capacity in that matter (Likert scale 1-5): Online intermediaries; Search engines; Websites management; Apps management; Online communities; Wikis, Forum, Blogs and product reviews; Media sharing site; Crowdsourcing; Virtual world, mixed reality and augmented reality; Smartphone/Mobile devices; Global positioning system navigations devices; Wearable devices; Property Management Systems / Point of Sales Systems; Customer Relationship Management; Energy management Systems; Big Data and analytics (Alpha Cronbach 0.928).

Perceived usefulness is evaluated through Performance expectancy (Venkatesh et al. (2003; Moghavvemi et al 2016): Describe your level of agreement with the following statements (Likert scale 1-5): I find the technology to be useful in my business; Using technology enable me to accomplish tasks more quickly; Using technology increases my productivity; Using technology, increases my chances of getting more benefit in my business; Using technology gives me competitiveness power in my business (Alpha Cronbach 0.818).

Perceived Ease of Use is evaluated through the perceived feasibility (Krueger, 1993; Moghavvemi et al 2016): Describe your level of agreement with the following statements (Likert scale 1-5): I am able to use the technology even if there is no one around to show me; I would feel comfortable using technology in my business; I have the skills and capabilities

required to use technology; I am confident I can put in the effort needed to use new technology in my business; It would be very practical for me to use new technology in my business; It would be very feasible for me to use technology in my business (Alpha Cronbach 0.915).

External barriers are also evaluated, through women's perception of each of them (Musa, 2006; Venkatesh et al. 2003; Moghavvemi et al 2016): Describe your level of agreement with the following statements (Likert scale 1-5): I have resources (monetary) necessary to acquire new technology in my business; I have the necessary knowledge to implement new technology in my business; There is external/internal support group available for assistance with new technology implementation; New technologies are compatible with other technology implemented in our business; There are special allocations (i.e. loan, intensive) for using new technologies for entrepreneurs or business, from government. Its Alpha Cronbach is limited with 0.680.

To evaluate their **future actions** regarding the implementation of technology in their business, the following questions (Venkatesh et al. 2008; Moghavvemi et al 2016) were included: Describe your level of agreement with the following statements (Likert scale 1-5): I predict I would use technology innovation, if it is available in the future; My personal philosophy is to do whatever it takes using technology innovation in the future; I have very seriously thought of using technology innovation in my business if it available, in next 2 months; I plan to use current technology innovation in my work in the next year; I intent to use similar technology innovation in the future (Alpha Cronbach 0.943).

The relevance of technology for their business was also a relevant section. This section included two sets of questions, or constructs: About the relevance of technology in general (DeSarbo et al 2005): Describe your level of agreement with the following statements (Likert scale 1-5): Technology sits at the heart of my business; Technology is the core business of

my company; Access to technology has set my decision to work in this business (Alpha Cronbach 0.897). The second questions requested for them to evaluate the specific technologies, previously evaluated and how important they were for their business (Alpha Cronbach 0.774).

Finally, **Control Characteristics** were requested from the participant: Gender; Highest level of education; Age; Country of residence and birth; Employment status; Type of business.

Statistical analysis: Fieldwork started in September 2019, so results won't be ready until December 2019. This Research Note present the pre-test results. The collected data will be analysed using statistical software, through different statistical analysis and techniques, that will depend on the size and the distribution of the final sample.

PRE-TEST RESULTS

The participants in this pre-test are young (44.2% have between 35-44 years old, 25.6% between 25-34 and 18.67% between 45-54), white (82.4%), are married or living with a partner (58.1%) and have no children (67.4%). These women are highly educated, since most of them (58.1%) have a postgraduate degree and have relevant professional experience (52.4% have more than 15 years of experience). The type of business where they work are quite diversified, from a size perspective and its technological level tends to be medium (38.1%) – high (33.3%). Also 33.3% are self-employed. Interesting to note that the majority consider that the technological potential of this companies in 5 years is high (42.88.6%) or that their main activity will be technological development (30.9%).

When women evaluate their tech capabilities, they tend to consider them average (Figure 1), , since a very low percentage of women consider their capabilities excellent (between 2.4% and 21.4% depending on the IT referred to).

Figure 2. Perceived capabilities related to ICTs

Source: authors

The GTG arises when the perceived usefulness of technology is compared to the previously evaluated capabilities (Figure 2). The relevance of technology for the development of their business is extremely high: between 57.1% and 73.8% of women consider technology extremely useful for their businesses.

Figure 2. Perceived usefulness of technology for their business

Source: authors

This gap is confirmed when evaluating the knowledge level of specific ITs and technologies and the importance for the development of their business of these technologies. As Figure 3

shows, most of the technologies show a negative gap, except those related to communication and social networks, when evaluating the associated high level of knowledge and the high level of importance. The main identified barriers are the compatibility of existing technology with potential technology (considered relevant of extremely relevant by 59.9% of the participants), internal or external support for the implementation of new technology (57.2%) and the lack of knowledge (52.4%).

Figure 3. Gap high level of knowledge and the high level of importance

Source: authors

The future importance of technology (Figure 3) shows how significant it is for women in management positions. These results give more importance to the existing gap around the relevance of technology for organizations and how women feel about their technological capabilities.

Figure 3. Future and technology

Source: authors

Nevertheless, there are still positive results as Ease of Use among women is quite high.

Figure 4 shows how the majority of women feel positive about their capacity to learn about new technologies.

CONCLUSIONS

Pre-test results confirm that scales demonstrate good reliability, with high coefficient Alpha Cronbach. Furthermore, preliminary results show how the technology gap exists when evaluating women's perception towards their technological capabilities and the importance given to these technologies for the development of their business (usefulness). Nevertheless, they also feel confident about their learning capacity (ease of use).

The Final results evaluation should consider three important facts. The usage of a feminist perspective will provide meaningful and comparable results, that can provide meaningful and comparable results. Secondly, as noted by Stevenson (1990) women entrepreneurs and managers are not a homogenous group and efforts should be made to develop typologies that

consider their diversity. Finally, if the sample's size and characteristics allows it, it's important to examine the different patterns that arise between women and technology in different countries, to understand how cultural factors affect technological adoption, use, and impact.

Figure 4. Ease of use

Source: authors

REFERENCES

- Accenture (2014) The promise of digital entrepreneurs: Creating 10 million youth jobs in the G20 countries. Available at: <http://www.accenture.com/SiteCollectionDocuments/PDF/Accenture-Promise-Digital-Entrepreneurs-Creating-10-Million-Youth-Jobs-G20-Countries.Pdf>.
- Ahl, H., & Marlow, S. (2012). Exploring the dynamics of gender, feminism and entrepreneurship: advancing debate to escape a dead end? *Organization*, 19(5), 543-562.

- Barlés-Arizón, M. J., Fraj-Andrés, E., & Martínez-Salinas, E. (2013). Family vacation decision making: The role of woman. *Journal of Travel & Tourism Marketing*, 30(8), 873-890.
- Baum, T. (2013). International Perspectives on Women that work in Hotels, Catering and Tourism. Working Paper, International Labour Office (ILO) <http://www.ilo.org/gender/Informationresources/WCMS209867/lang--en/index.htm> Acceso: 01/07/2014
- Bharwani, S., & Talib, P. (2017). Competencies of hotel general managers: a conceptual framework. *International Journal of Contemporary Hospitality Management*, 29(1), 393-418.
- Cadaret, M. C., Hartung, P. J., Subich, L. M., & Weigold, I. K. (2017). Stereotype threat as a barrier to women entering engineering careers. *Journal of Vocational Behavior*, 99, 40-51.
- Costa, C., Bakas, F. E., Breda, Z., Durao, M., Carvalho, I., & Caçador, S. (2017). Gender, flexibility and the 'ideal tourism worker'. *Annals of Tourism Research*, 64, 64-75.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.
- DeSarbo, W. S., Anthony Di Benedetto, C., Song, M., & Sinha, I. (2005). Revisiting the Miles and Snow strategic framework: uncovering interrelationships between strategic types, capabilities, environmental uncertainty, and firm performance. *Strategic management journal*, 26(1), 47-74.
- Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers*, 21(3), 719-734.
- Fazzolari, M., & Petrocchi, M. (2018). A study on online travel reviews through intelligent data analysis. *Information Technology & Tourism*, 20(1-4), 37-58.
- Pulido, J. I., Cala, A. S., & Figueroa-Domecq, C. (2011). Critical external factors behind hotels' investments in innovation and technology in emerging urban destinations. *Tourism Economics*, 17(2), 339-357.
- Figueroa-Domecq C., Palomo J., Flecha-Barrio M.D., Segovia-Pérez M. (2019) Double Gender Gap in Tourism High-Technology Organisations: Results and Corporate Actions. In: Pesonen J., Neidhardt J. (eds) *Information and Communication Technologies in Tourism 2019*. Springer, Cham.
- Figueroa-Domecq, C., Segovia-Pérez, M. & Talon-Ballester, P. (2010). La perspectiva de género y el uso de Internet en la comercialización turística. In *Turitec 2010: VIII Congreso Nacional Turismo y Tecnologías de la Información y las Comunicaciones* (pp. 93-108). Universidad de Málaga (UMA).
- Fountain, J. E. (2000). Constructing the information society: Women, information technology, and design. *Technology in Society*, 22(1), 45-62.
- Hargittai, E., & Shaw, A. (2015). Mind the skills gap: the role of Internet know-how and gender in differentiated contributions to Wikipedia. *Information, communication & society*, 18(4), 424-442.
- Hill, C., Corbett, C., & St Rose, A. (2010). Why so few? Women in science, technology, engineering, and mathematics. American Association of University Women. 1111 Sixteenth Street NW, Washington, DC 20036.
- Kelan, E. K. (2007). Tools and toys: communicating gendered positions towards technology. *Information, Community and Society*, 10(3), 358-383.
- Kimosop, J., Korir, M., & White, M. (2016). The moderating effect of demographic characteristics on the relationship between strategic capabilities and firm performance in women-owned entrepreneurial ventures in Nairobi, Kenya. *Canadian Journal of*

- Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 33(3), 242-256.
- Koppi T, Sheard J, Naghdy F, Edwards S L, & Brookes W (2010) Towards a gender inclusive information and communications technology curriculum: a perspective from graduates in the workforce. *Computer Science Education* 20(4): 265-282, doi: Doi: 10.1080/08993408.2010.527686
- Krueger, N. 1993. The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability. *Entrepreneurship Theory and Practice Journal*. 18(1): 5-21
- Martinez Dy, A. Marlow, S., & Martin, L. (2017). A Web of opportunity or the same old story? Women digital entrepreneurs and intersectionality theory. *Human Relations*, 70(3), 286-311.
- Moghavvemi, S., Mohd Salleh, N. A., & Standing, C. (2016). Entrepreneurs adoption of information system innovation: The impact of individual perception and exogenous factors on entrepreneurs behavior. *Internet Research*, 26(5), 1181-1208.
- Musa, P. F. (2006). Making a case for modifying the technology acceptance model to account for limited accessibility in developing countries. *Information technology for development*, 12(3), 213-224)
- Neidhardt, J., & Werthner, H. (2018). IT and tourism: still a hot topic, but do not forget IT. *Information Technology & Tourism*, 20(1-4), 1-7.
- Omar, F. I., Othman, N. A., Salleh, M. A. M., & Abdullah, N. H. (2018). Affective Need of ICT in Improving Business Performance among Malay Women Entrepreneur. *International Journal of Academic Research in Business and Social Sciences*, 8(6), 975-987.
- Omar, F. I., Salman, A., & Rahim, S. A. (2017). The Relationship between Digital Inclusion and Support system towards the Empowerment of Women online Entrepreneurs.
- Robinson, L., Cotten, S. R., Ono, H., Quan-Haase, A., Mesch, G., Chen, W., Schulz, J., Hale, T. M., & Stern, M. J. (2015). Digital inequalities and why they matter. *Information, communication & society*, 18(5), 569-582.
- Rojas-de-Gracia, M. M., Alarcón-Urbistondo, P., & González Robles, E. M. (2018). Couple dynamics in family holidays decision-making process. *International Journal of Contemporary Hospitality Management*, 30(1), 601-617.
- Santero-Sánchez, R., Segovia-Pérez, M., Castro-Nuñez, B., Figueroa-Domecq, C., & Talón-Ballester, P. (2015). Gender differences in the hospitality industry: A job quality index. *Tourism Management*, 51, 234-246.
- Stevenson, L. (1990). Some methodological problems associated with researching women entrepreneurs. *Journal of business ethics*, 9(4-5), 439-446.
- Soleymani, S., Mosavi, S. Y., & Parirokh, M. (2011). The Relationship between Usage Rate of Information and Communication Technology and Demographic Features of Faculty Members of Ferdowsi University of Mashhad. *Journal of Information processing and Management*, 26(2), 335-354.
- Tshabalala, S. P., & Ezeuduji, I. O. (2016). Women Tourism Entrepreneurs in KwaZulu-Natal, South Africa: Any way forward?. *Acta Universitatis Danubius. (Economica)*, 12(5).
- Tussyadiah, I. P. (2016). The influence of innovativeness on on-site smartphone use among American travelers: Implications for context-based push marketing. *Journal of Travel & Tourism Marketing*, 33(6), 806-823.
- Tussyadiah, I., & Miller, G. (2019). Nudged by a robot: Responses to agency and feedback. *Annals of Tourism Research*, 78, 102752.

- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.
- Walton, P., Kop, T., Spriggs, D., & Fitzgerald, B. (2013). A digital inclusion: Empowering all Australians. *Journal of Telecommunications and the Digital Economy*, 1(1), 9.
- Wickramasinghe, V. (2009). Predictors of job satisfaction among IT graduates in offshore outsourced IT firms. *Personnel Review*, 38(4), 413-431.

Copyright of E-review of Tourism Research is the property of Department of Recreation, Park & Tourism Sciences, Texas A&M University and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.

Copyright of E-review of Tourism Research is the property of Department of Recreation, Park & Tourism Sciences, Texas A&M University and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.