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Technology Empowering Women of India

Abstract

This study is an attempt to determine major impact of technology on women's empowerment in present era. To determine the impact of technology, it is important to know the awareness level and the adoption rate of technology among Indian women. This study will also help in finding out various problems/challenges faced by women and new insights gained by women while using technology. This will also support Indian government in making favourable policies and innovative schemes for women to provide more technology driven power. The structured questionnaire is designed and circulated to 120 women of semi urban areas of Udaipur district, Rajasthan, based on convenience sampling. 83% of the total questionnaire distributed are found complete for research purpose. Data analysis reveals that after technology in any form it is mostly used by educated women who are between the age of 25–50, and are house makers. The majority of women have purchased new devices such as smartphones, desktop computer/laptop and tablets for different reasons for doing work from home, entertainment, travel, learning, trading, etc. It is visible from the study that the majority of women have no or insufficient knowledge about ethical guidelines/code of ethics regarding cyber security. Unfortunately, women restrict themselves to use technology because of severe technical issues, lack of privacy, gender discrimination and digital divide. Other reasons such as domestic issues, overburden of responsibility, low literacy rates, non-participation in decision making, etc., are few other reasons behind a lower adoption of technology by women. These factors are responsible for smaller interaction of women with the technology and thereby creating stumbling block in empowering women digitally. Strong support of family members, government, policy maker and educational institutions can encourage women empowerment.

There is an urge to devise and implement various awareness e-training and support programs for women all over the nation. Strengthening norms for cyber security will add more power and innovation to technology use. Economic and psychological impact of Demonetisation and pandemic COVID-19 have brought tremendous changes to the lives of common man. The new prefix "e" to each and every word has new meaning "empowering entire earth electronically". Hence, empowering women has become the top priority of each and every nation.

K e y w o r d s: Digital Divide, Women Empowerment, technology change, Digital Inclusion of Women, Training, cyber security and ethics, Nari Shakti

Introduction

Education is the best medium to give wings to our dreams. It let us live intelligently and far better than others. In the 21st century, web technology is the major means of information and entertainment for each and every one across the globe. Today, every task right from the basic physical needs to luxury needs, is dependent on this technology. The main sources of information and entertainment such as television, newspaper and telephones have been replaced by web technology. An ample number of software and applications are available to provide myriad services at your doorstep. All this is possible with Information and Communication Technologies (ICTs). It is referred to as the varied collection of technological gear and resources which are used to communicate. They are also used to generate, distribute, collect and administer information (Sarkar, 2012). Today technology has compelled all of us to add "digital" as a prefix to the word literacy, that is, digital literacy. A digital literate man is the one who not only knows to read and write, but also an expert user of computer.

Digital literacy is the ability, skills and behaviour used to operate digital devices such as smartphones, tablets, laptops and desktop PCs, etc. Digital literacy and computer literacy are interrelated concepts. In Indian context, National Digital Literacy Mission (NDLM), quotes digital literacy as 'the ability of individuals and communities to understand and use digital technologies for meaningful actions within life situations'. Eshet (2004) has proposed a new conceptual framework for the concept of digital literacy, incorporating five types of literacy: (a) photo-visual literacy; (b) reproduction literacy; (c) information literacy; (d) branching literacy; and (e) socio-emotional literacy. Eshet also defines digital literacy to "involve more than the mere ability to use software or operate a digital device; and a large variety of complex cognitive, motor, sociological, and emotional skills, which users need in order to function effectively in digital environments".

The adoption of technology is raising in Tripura, but women face disparities in access to and utilization of technology. Factors such as a lack of awareness, limited resources, and cultural norms can prevent women from fully embracing digital tools and ICT. Bridging this gap is essential to ensuring women have equal opportunities to leverage technology for their education, employment, and empowerment (Debbarma & Chinnadurai, 2023).The power and transformational potential of Internet access and use is not equally distributed.

To build a digital inclusive society in India women empowerment and digital divide is crucial. In order to bring societal transformation digital empowerment of women and girls of all age and categories is essential. The advancement of ICT has brought changes in the societies across the globe, but unfortunately not in India due to cultural and demographic factors. A woman is the soul of the family as well as nation. Her dreams, thoughts, opinions are as important as that of men. But the unequal access of Internet use among men and women across the globe restrict women to spread their wings.

In a developing country like India, technology usage is continuously widening the gap not only between men and women, but also between urban and rural, educated and illiterate, rich and poor people. Rural and tribal people are amongst the most disadvantaged segments of society and are often exploited due to their illiteracy and concomitant lack of awareness. They are deprived of development processes that were initiated and intended for their advancement, prosperity and security (Nedungadi et. al., 2018). So in order to eliminate or minimize the gap and to become self-reliant, it is essential for each and every citizen to become a netizen -digitally literate. Digital India Program has played a vital role in bridging the gender gap and empowering women in rural areas. Additionally, the study uncovers a trend towards mobile-based services over computer-based services, signaling a shift in technology utilization patterns. This emphasizes the need to prioritize mobile technology and improve connectivity in rural areas to ensure wider access to digital platforms (Sindakis & Showkat, 2024).

Another challenge is lack of complete knowledge; skills, training and awareness, due to which women are becoming victims of unethical cyber behaviour. This calls for a need to teach and promote cyber ethics at every level of computer usage, i.e. from a novice user to a skilled user. Cyber ethics refers to the code of responsible behaviour on the Internet (Purohit, Bharti& Joshji, 2015). Similarly, cyber security is another important issue for women. The important thing in digital literacy is about how to maintain privacy in the online world (Marini, Hanum, Sulistiyo, 2019). It is important to understand different types of cybercrime such as online theft through credit cards, fake sites, frauds via links on email, etc. Secure browsing is also a part of digital literacy. Hence, it is important to make women aware of using strong passwords, not clicking on embedded links, not sharing OTPs and passwords, of safe access of social networking sites, reliability of websites, etc.

In India, stereotype thoughts are also common among educated families too. Similarly orthodox culture and traditions more commonly exist in our Indian families. Unfortunately, women are torched under the name of culture. Autonomy is considered as modernization in the respect of women. Whenever mentality will not change the country's men and women, women cannot be upgraded in the country (Devi, 2023). Women in Udaipur have made laudable progress in various fields, yet societal norms and cultural practices often confine them to traditional roles within the family and community. Technology plays an important role in breaking the shackles for their holistic development by creation of equitable and progressive environment. This study is an attempt to show how technology is empowering women and to what extent.

Research Focus

Women empowerment plays a crucial role in the overall development of any society besides positively impacting the daily lives of women. The winds of radical change in the fields of employment and information technology have brought a wide range of opportunities for women in India and across the globe (Dhanamalar et. al., 2020). Indian women are making their significant place into various fields such as business, health, IT, agriculture, and so on. But still, many housewives/mothers/girls having extraordinary talents are not able to become entrepreneurs or not able to generate extra income for their family due to the lack of information and platform. In India, there still exists a gender digital divide, too.. Thus, the main idea behind digital literacy is to empower women so that they can effectively use digital media to make their dreams come true. It will give new opportunities, self-confidence, independence, status and support to each other. Though, there has been a significant increase in the number of Internet users over the years but still there exists a wide gap between the Internet usage among men and women. Digital literacy need for urban female students (Purohit, Bharti & Josji, 2015) consists of:

- Knowledge of cyber security and safe browsing especially in case of social networking and online transactions,
- Knowledge of various digital courses related to subject area of study,
- Knowledge of advanced software (SPSS, AMOS, etc.),
- Knowledge about social and professional networking,
- Online job and career enhancement opportunities.

Being digitally literate, women can make better decisions, saves time, get more options, financial planning, enhance learning, expose talent, access information about health, safety, sanitation, etc.

Methodology of Research

General Background of Research

This study is very relevant in the current context and will be helpful in determining the awareness and adoption of technology by women of semi urban regions of Udaipur district. It will also help in exploring the new avenues and challenges faced by women while interacting with digital platforms. A descriptive method of research is followed here to study the objectives of the study.

Research Questions and Hypothesis

The tremendous advancements in technology across the world have turned out to be the core issue of various researches all over the world. Sudden emergence of the COVID-19 pandemic and demonetisation have created a wide range of technology around us. Each and every activity is led by technology. The research was guided by the following research objectives:

To study the demographic profile of women using technology,

To study the level of digital inclusion among women of India,

To study the impact of using technology (screen time) on level of knowledge,

To determine the relationship between knowledge level and decision making power among women with respect to cyber security and ethics regarding use of technology.

To study the various problems faced and new insights gained by the women while using technology.

Hypothesis Development

In order to conduct a controlled experiment and empirical study the following null hypothesis has been developed:

H1: There is no relationship between screen time and knowledge level among women.

H2: There is no relationship between decision making and knowledge level among women.

Sample of Research

The survey was conducted for 3 months in year 2023 in order to collect the primary data using the structured questionnaire seeking different types of information on technology adoption and awareness among women. It was designed and distributed after going through extensive literature review which really helped in developing better understanding that women can be empowered by leveraging technology and for gaining maximum benefits. The sample consists of 120 females from diverse backgrounds of Udaipur City selected on the basis of convenience sampling. The questionnaire was distributed to 120 women but the response rate

was 83% (100 questionnaires returned and found complete for the study). The data collected through questionnaire are coded, tabulated and analysed thoroughly to draw the conclusions and recommendations. Various books, newspapers, journals, government reports and websites have been referred to to enrich this study.

Limitation of Study

Each and every woman is unique. It is not fair to apply the same approach to different women. Their unique mindset, opinions, beliefs, aspiration, etc., differentiate one from another. The present study has the following limitations:

1. The responses for the study have been solicited from women residing in Udaipur District, Rajasthan state only.
2. The present study is based upon primary data. So, the study may suffer from the elements of bias.
3. Women of Rajasthan are still found shy in nature which is clearly a barrier in extracting information from them. In spite of that a lot of information has been collected.

Data Analysis and Interpretation

1. Respondent's personal profile

Demographic information is the very first part of the questionnaire. Table 1 provides a complete information of 100 respondents based on their literacy level, age and present working status.

Table 1
Respondent's personal profile

Demographics	Measures	Percentage
Literacy level	School Pass	14
	Undergraduate	46
	Postgraduate and above	40
Age	Below 25	20
	25–50	54
	Above 50	26
Occupation	Private Job	38
	Great House makers	42
	Business women	5
	Public Sector Job	15

S o u r c e: own work.

It is seen that out of total 100 female respondents, 40% females are post graduates and above, and majority of females (54%) belongs to the age group of 25–50 years. Most of the females are great house makers (42%) or in a private job (38%). The complete demographic profile of respondents is found diversified and sufficient for mapping the background of the women participating in this study.

2. Operating skill and expertise among respondents

Certain skill sets are required for using new technological advancements. Table 2 depicts the expertise level in operating Internet either from a computer system or smartphones. Many females (28%) use Internet for accessing search engine (Google) only on Computer/ Laptop. On the other hand, the majority of females have an expert hand on Smartphones (38%). It is also found that 8% of females are not able to operate computer, but can use smartphones/tablets for their day to day need. Overall, 100% females use Internet services either on desktop/Laptop or Smartphones/tablets.

Table 2
Level of operating skills and expertise for using Internet

S. No.	Level of expertise	Expert Skills	Medium Skills	Fewer Skills	Can use Google only	Never Used
1	Computer/Laptops Operating skills	21	18	25	28	8
2.	Smartphones/tablets	38	27	26	9	0

S o u r c e: own work.

Table 3
Operating skills are acquired by

S. No.	Operating Skills Acquired Through	Percentage
1	Professional Computer course/training	42
2	Self-learning/with some ones help	58

S o u r c e: own work.

For leveraging technology adoption, it is essential to learn skills to operate computer systems and for using Internet safely. Table 3 shows that only 42% respondents have learned computer through some professional centres and 79% respondents use Internet facilities by self-practice or with the help of colleagues, family or friends.

3. Gadgets used for accessing Internet

Table 4
Gadgets used by respondents

S. No.	Gadgets	Percentage
1	Smartphones	100
2	Desktop	52
3	Laptop	41
4	Tablet	18

S o u r c e: own work.

All female respondents use smart phones for accessing Internet, and use of tablets is found very low (18%), While 52% Respondents are using desktop and 41% are using laptop (41%) for accessing Internet for their work or entertainment.

4. Purchase of any new digital device in last 5 year

It is found that 96 % respondents have purchased either new smart phones, desktops laptops, or tablets in recent years. This data show that female are now getting more aware of technology and using the technology for their different needs such as entertainment, online classes, banking, shopping, work from home, etc. Simultaneously, women also started exploring the use of technology as a new avenue to relive their interest such as online teaching, blogging, creating content, cooking classes and lot more. Aggressive use of technology in each sector is compelling everyone to buy and use these digital devices.

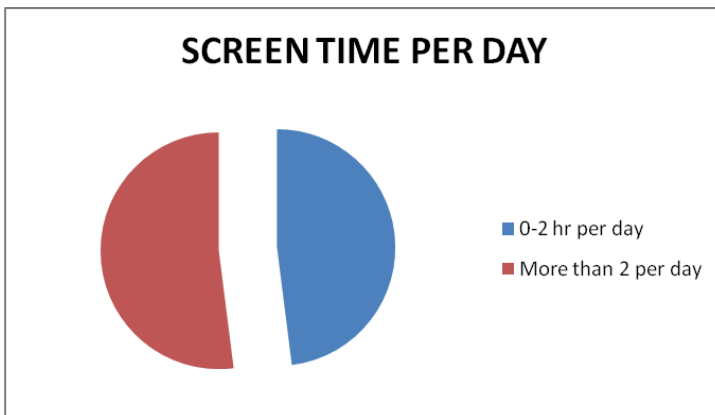### 5. Screen time of the respondents daily

Figure 1. Chart showing everyday screen time of the respondents

S o u r c e: own work.

It is clear from the graph that 48% of female respondents use Internet for less than 2 hours a day. Drastic shift is noticed after demonetisation and the Covid-19. People switch from offline to online mode which may be due to hygiene, comfort and cashless transactions. Now, everyone shows interest in online classes, work from home, e-banking transactions, entertainment (OTT) and online shopping (Amazon, Flipkart, Myntra, Meesho, etc.,), etc. This is a strong indication of adoption of technology by women.

6. Use of Internet

Today, in this smart era, women are getting smart and independent by adopting technology at fast pace in their day-to-day life. Internet has become part and parcel of their life starting from cooking, house making, learning, shopping, entertainment, travel or any other thing. Table 5 shows that today, women use Internet for different purposes such as learning through online classes for them as well as for kids, work from home, travel, reading, trading, cooking, general purpose, OTT platforms, banking app, shopping applications, etc.

Table 5
Use of Internet for different purpose

S. No	Use of Internet	Percentage
1	Pursuing online classes (for themselves and for their kids' education)	26
2	Work from home	18
3	General Information through search engine	79
4	Email	42
5	Social Networking (FB, WhatsApp, etc.)	84
6	Entertainment (Games, Movies, etc.)	68
7	Internet Banking /Bill Payment	38
8	Trading	24
9	Reading News and Books	38
10	Academic purpose (Attending online Conference /Seminars, etc.)	16
11	Online Shopping	74
12	Travel	16

S o u r c e: own work.

It is found that highest numbers of women use technology for accessing social media platforms (84%) or searching information about general questions or queries through search engines (79%). Online shopping and entertainment is also common among women whereas travel bookings, trading and working from home are still less popular among women. Usually females hesitate to use Internet banking due to security reason or lack of education (Bhatnagar, 2014).
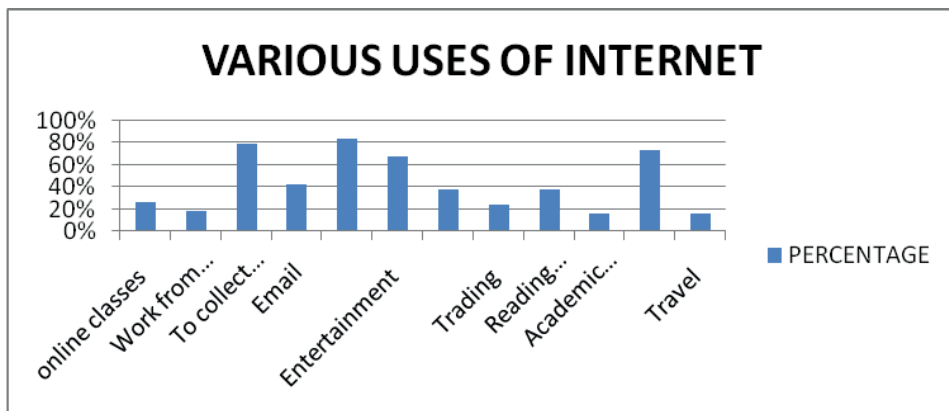
Figure 2. Chart showing various uses of Internet by women

S o u r c e: own work.

7. Major search engines used for information search

Most of the respondents use Google (85%) for browsing information on the web. Yahoo, Bing and other search engines are not popular among females. Few use multiple search engines depending upon the speed and network. Very few women use Bing and other search engines such as DuckDuckGo, Wiki.com, etc.

Table 6
Search engine for browsing information

Search Engine	Frequency
Only Google	85%
Only Yahoo	21%
Only Bing	6%
Other	3%
Multiple	20%

S o u r c e: own work.

8. Knowledge level about cyber security, frauds and ethics

Today our life is revolving around technology. To avail absolute advantage of web technologies it is very important to have sufficient knowledge of cyber security. Most females have very little knowledge about various cyber frauds and only 13% women are confident about their knowledge on cyber security and ethics. 40% women still do not have knowledge about cyber security, cyber laws, ethics, frauds and regulation.

Table 7
Level of knowledge about cyber security, fraud and ethics

Level of Knowledge	Percentage
Sufficient /Complete	13
Very Little knowledge	47
No knowledge	40

S o u r c e: own work.

Cybercrime is a major challenge not only in India, but across the world. Lack of basic knowledge about cyber security, software piracy, hacking, fake content, cyber bullying, digital scams, etc., is responsible for an increasing number of cyber frauds yearly.

In order to understand the relationship between the level of knowledge and screen time we will apply Chi-Square test. The hypothesis framed is the following:

H_1: There is no relationship between screen time and knowledge level among women

Table 8
Knowledge level and screen time

Level of Knowledge	Less Than 2 Hr	More Than 2 Hr	Chi-Square	Df	Result
Sufficient	8	5	1.166	2	Not significant
Little	21	26			
No	19	21			
Total	48	52			

S o u r c e: own work.

Data encapsulated in Table 8 shows the impact of screen time on the level of knowledge of the women. The results of Chi-Square test (values = 1.166, df = 2, p <.05) shows that there is no significant difference in the level of knowledge among women based on their screen time. The difference is not statistically important.

Table 9
Cyber Security

Knowledge of Cyber Security	Sometimes or Once	Never
Have you ever shared your password or OTP to anyone?	46	54
Have you ever clicked on links embedded in emails	58	42
Have you gone through any online fraud?	32	58

S o u r c e: own work.

Table 9 depicts that many women (46%) have shared their OTP and passwords with any third party. It is surprising to know that 58% of women have clicked on embedded links in emails for the sake of some gift or money. 32% of women have faced online frauds such as receiving wrong product, money transfer from bank account, hacking of social media account, no response from supplier, etc.

9. Women decision making power

Table 10
Decision making

Decision Making Power	Yes	No
Do you make your own decision regarding online transaction, shopping or travel, etc.,	44	56
Do you consult your husband, parents or brother before making any online transactions?	56	44

S o u r c e: own work.

Rajasthan is a patriarchy state where most of the decisions are taken by a father or a brother. Table 10 is provides the evidence in support of patriarchy. 56% of females still consult their husband, parents or brother before making any online transactions. This may be due to lack of involvement of women in decision making, permission issues, little knowledge and lack of confidence among women.

H$_2$: There is no relationship between decision making and knowledge level among women

Table 11
Knowledge level and screen time

Level of Knowledge	Self- Decision	Decision After Consultation	Chi-Square	Df	Result
Sufficient	10	3	14.8343	2	significant
Less	25	22			
No	9	31			
Total	44	56			

S o u r c e: own work.

Data encapsulated in Table 11 shows the impact of the level of knowledge on decision making power of women. The results of Chi-Square test (values = 14.8343, df = 2, p <.05) shows that there is a significant difference in the decision making of women based on their level of knowledge. The significant difference is obvious

because rational decisions are always based on knowledge. In this case, women also take decisions on the basis of their level of knowledge.

10. Technical issues faced while using browsing Internet

Table 12
Technical issues while using Internet

Problems Faced	Number	Percentage
Transaction failed due to network breakdown	78	48
Difficulty to judge relevant and reliable information	46	46
Access permission Issues/ Cookies	80	80
Overloaded Information	39	39
Lack of skill sets	34	34

S o u r c e: own work.

Lot of people face various difficulties while browsing, such as slow speed, network breakdown, permission issues, language barrier, overloaded information, etc. Table 12 depicts various technical issues while using Internet. Nearly 80% of respondents face problems of cookies/access permission issues and 78% say that most of the time transaction get failed due to network error/issues. Other problems faced by women are difficult to judge the relevant and reliable information overloaded information on web page and lack of their own skill set to use technology.

11. Challenges faced while using technology/Internet

Table 13
Challenges faced while using technology / Internet

Challenges Faced While Using Technology	Percentage
Language problem	48
Responsibility and domestic issues	61
Economic conditions	48
Lack of confidence	33
Lack of clarity and awareness	23
Lack of guidance and support	44
Complex nature of technology	51
Lack of security and cyber laws	29
Lack of privacy	34

S o u r c e: own work.

Major challenges faced by women are the burden of responsibility and domestic issues (61%), a complex nature of technology (51%), economic conditions (48%), lack of cyber security, rules and regulations. Other barrier hindering female interaction with technology are lack of support system and guidance, lack of clarity and awareness of certain technological concepts, lack of confidence, lack of privacy, etc. These challenges create obstacles in the path of empowering women digitally.

Results of Research and Discussions

A woman is the foundation of any country. Without her transformation it is impossible to dream about transformation of any country like India. The results of this study are as follows:

1. Out of 100 respondents 46% of women have a UG degree, 54% are between the age of 25-50, and 42% are great house makers while the rest are in job or business. The complete demographic profile of respondents is sufficient to understand the background of the respondents. All respondents use Internet services either on desktop/Laptop or Smartphone/tablets. This shows that technology has now become the building block of our life. For leveraging technology adoption, it is essential to have some skills to operate computer systems, laptops and smart phones safely. A considerable number of respondents have done professional computer courses/training while the majority use computer/smart phones by self- learning. This can be the reason behind the lack of expert skills and knowledge regarding cyber security, frauds and ethics, etc.

2. Smart phones are omnipresent today. 100% of respondents use smart phones for accessing Internet and use of tablets is found very rare. Hence, the increasing dependence of women on smart phones may be due to various reasons such as high portability, touch screen feature and user friendly and interactive interface.

3. It is found that 96% of respondents have purchased either new smart phones, desktops, laptops, tablets in past five years. This may be due to the need of time to avail online classes, banking, shopping, work from home, etc., which compels them to buy and use the digital devices. Simultaneously, women have started exploring technology as a new avenue to relive their interest such as online teaching, blogging, creating content, cooking classes and lot more.

4. It is found that the normal screen time is now between 2 to 4 hours. This may be due to abundance of various applications for earning, social media networking, learning, banking, entertainment, travel and shopping, etc. Previously, Internet was mostly used for social networking and entertainment. Now the use of Internet is far more than online classes, work, banking, travel, reading books, attending seminars and conferences worldwide and trading, etc., which is a good indicator of adoption of technology by women thereby empowering themselves.

5. Most of the respondents use common search engines such as Google and Yahoo for browsing information on the web. This shows that respondents are not aware of other options available for information search.

6. Most of the females have very little knowledge about various cyber frauds and only 13% of women are confident about their knowledge on cyber security and ethics. They are not at all aware of not sharing OTP and passwords with any third party, not clicking on embedded links in emails, hacking of social media account, etc.

7. 56% of females still consult their husband, parents or brother before making any online transactions. This may be again due to lack of involvement of women in decision making, permission issues, little knowledge and confidence among women. Greater numbers of women face difficulties while browsing such as slow speed, network breakdown, permission issues, language barrier, overloaded information, etc. Data show that 80 % of respondents face the problem of cookies/access permission issues and 78% say that transaction got failed due to network issues. Major challenges faced by women while using technology are lot of responsibility and domestic issues (61%), complex nature of technology (51%), lack of cyber security, rules and regulations. Other barrier hindering female interest in using technology are lack of support system and guidance, lack of clarity and awareness about certain technological concepts, lack of confidence, etc.

Conclusions

After the COVID-19 pandemic demonetisation, the use of ubiquitous digital devices such as smart phones, desktop computers/laptops by young girls and women has increased tremendously because of the digitalization and e-commerce, which is a good indicator of the digital inclusion of women. The study shows that the time spent by women on digital devices for accessing various social media platforms, banking, travel, education, trading, etc., does not have a significant impact on enhancement of knowledge level, but the level of knowledge has a significant effect on decision making power of women. Unfortunately, gender discrimination, technical issues, domestic issues, overburden of responsibility, low literacy rates, non-participation in decision making, etc., are prevalent in Indian society. These are the challenges which create barriers for women in establishing a better interaction with technology and thereby creating a stumbling block in empowering women digitally. But, the strong support of family members, government, SDGs, policy makers, funders and educational institutions can encourage women to empower themselves. Next major step towards more empowerment can be the need to devise

and implement various awareness e-training schedules, participation and support programs. There is an urge to also frame code of ethics and norms for enhancing and strengthening cyber security.

Recommendations

Today, when cyber frauds are prevalent in our life, motivating people to adopt digital technology is not sufficient. In fact, it is also important to provide digital education to everybody to protect their hard earned money and content. Hence, there is an impulsive need of forming comprehensive policy and regulations in India regarding cyber security. Empowering women digitally and overcoming digital divide is a need of an hour. The government and policy makers should take into consideration the matter of improvement in digital learning among women and empowering them by devising strong cyber security laws, and designing digital awareness programs for women.

References

Bhatnagar, H. & Rao, N. S. (2014). Internet banking with special reference to females. Saaransh RKG Journal of Management, 4 (1), 0975–4601.

Bhattacharya, I. & Sharma, K. (2007). India in the knowledge economy–an electronic paradigm. International journal of educational management, 21(6), 543–568.

Debbarma, A. & Chinnadurai, A. S. (2023). Empowering Women through Digital Literacy and Access to ICT in Tripura. Research Journal of Advanced Engineering and Science, 9(1), 5–9, 2455–9024.

Devi, V. (2023). Prospects of Digital Literacy of Women: Special Reference to Chitrakoot District, Uttar Pradesh, India. *International Journal of Social Sciences Arts & Humanities*, 66-71, (ISSN 2321-4147. https://doi.org/ 10.13140/RG.2.2.30770.38080.

Dhanamalar, M., Preethi, S., & Yuvashree, S. (2020). Impact of digitization on women's empowerment: A study of rural and urban regions in India. Journal of International Women's Studies, 21(5), 107–112. Available at: https://vc.bridgew.edu/jiws/vol21/iss5/11.

Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. Journal of educational multimedia and hypermedia, 13(1), 93–106, 1055–8896.

Marini, S., Hanum, F., & Sulistiyo, A. (2020, February). Digital literacy: Empowering Indonesian women in overcoming digital divide. In 2nd International Conference on Social Science and Character Educations (ICoSSCE 2019) (pp. 137–141). Atlantis Press. https://doi.org/10.2991/assehr.k.200130.029.

Nedungadi, P. P., Menon, R., Gutjahr, G., Erickson, L., & Raman, R. (2018). Towards an inclusive digital literacy framework for digital India. *Education + Training*, *60*(6), 516–528.

Purohit, H., Bharti, N., & Josji, A. (2015). Partnering for promotion of Digital Literacy among women in Rajasthan through Bhartiya Model of Digital Literacy. Available at SSRN2665736.

Sarkar, S. (2012). The role of information and communication technology (ICT) in higher education for the 21st century. Science, 1(1), 30–41. ISSN 2277-9566.

Sindakis, S. & Showkat, G. (2024). The digital revolution in India: bridging the gap in rural technology adoption. Journal of Innovation and Entrepreneurship, 13(1), 29. https://doi.org/10.1186/s13731-024-00380-w.

Sugiyarti, E., Jasmi, K.A., Basiron, B., Huda, M., Shankar, K., & Maseleno, A. (2018). Decision support system of scholarship grantee selection using data mining. International Journal of Pure and Applied Mathematics, 119(15), 2239–2249.

Bridging the gender divide. (n.d.). ITU. Retrieved June 3, 2024, from:

https://www.itu.int/en/mediacentre/backgrounders/Pages/bridging-the-gender-divide.aspx#:~:text=Of%20the%20estimated%202.7%20billion,compared%20with%2057%25%20of%20women.

https://digitalindia.gov.in/content/vision-and-vision-areas.

http://www.ictacademy.in/pages/Digital-Empowerment.aspx.

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Technologia wzmacniająca pozycję kobiet w Indiach

S t r e s z c z e n i e

Cel: Celem badania jest próba określenia głównego wpływu technologii na wzmocnienie pozycji kobiet w obecnych czasach. Aby określić wpływ technologii, ważne jest poznanie poziomu świadomości i stopnia przyjęcia technologii wśród indyjskich kobiet. Badanie to pomoże także w poznaniu różnych problemów//wyzwań stojących przed kobietami oraz nowych spostrzeżeń, jakie zdobywają podczas korzystania z technologii. Będzie to również wspierać rząd Indii w opracowywaniu korzystnej polityki i innowacyjnych programów dla kobiet, aby zapewnić kobietom większą władzę opartą na technologii. Projekt – ustrukturyzowany kwestionariusz został zaprojektowany i rozesłany do 120 kobiet z półmiejskich obszarów dystryktu Udaipur w Radżastanie w oparciu o próbkowanie dla wygody. Wyniki – 83% (100) to odsetek odpowiedzi, które uznano za kompletne do celów badawczych. Analiza danych pokazuje, że z technologii w jakiejkolwiek formie korzystają najczęściej wykształcone kobiety w wieku 25–50 lat, zajmujące się domem. Najwięcej kobiet zakupiło nowe urządzenia, takie jak smartfony, komputer stacjonarny/laptop i tablety z różnych powodów, głównie w celu pracy w domu, rozrywki, podróżowania, nauki, handlu itp. Z badania wynika, że najwięcej kobiet nie ma żadnej wiedzy lub ma niewystarczającą wiedzę na ten temat wytyczne etyczne/kodeks etyczny dotyczący cyberbezpieczeństwa. Niestety kobiety ograniczają się do korzystania z technologii ze względu na poważne problemy techniczne, brak prywatności, dyskryminację ze względu na płeć i przepaść cyfrową. Inne przyczyny, takie jak problemy domowe, nadmierne obciążenie obowiązkami, niski poziom umiejętności czytania i pisania, brak udziału w podejmowaniu decyzji itp., to kilka innych powodów mniejszego wykorzystania technologii przez kobiety. Czynniki te odpowiadają za mniejszą interakcję kobiet z technologią, co stanowi przeszkodę we wzmacnianiu pozycji kobiet w środowisku cyfrowym. Wartość – Silne wsparcie ze strony członków rodziny, rządu, decydentów i instytucji edukacyjnych może wzmocnić pozycję kobiet. Istnieje potrzeba opracowania i wdrożenia różnych programów e-szkoleń uświadamiających i wsparcia dla kobiet na całym świecie. Wzmocnienie norm dotyczących bezpieczeństwa cybernetycznego zwiększy możliwości i innowacyjność wykorzystania technologii. Demonetyzacja i pandemia COVID-19 przełamał różne kajdany ciemności

i wniósł nowe światło do naszego życia. Nowy przedrostek „e" w każdym słowie ma nowe znaczenie „elektronicznie wzmacniając całą ziemię". Dlatego wzmacnianie pozycji kobiet stało się najwyższym priorytetem każdego narodu.

S ł o w a   k l u c z o w e: przepaść cyfrowa, wzmocnienie pozycji kobiet, zmiana technologii, cyfrowe włączenie kobiet, szkolenia, bezpieczeństwo cybernetyczne i etyka, Nari Shakti

Harshita Bhatnagar

La tecnología empodera a las mujeres de la India

R e s u m e n

Propósito: este estudio es un intento de determinar el impacto principal de la tecnología en el empoderamiento de las mujeres en la era actual. Para determinar el impacto de la tecnología es importante conocer el nivel de conciencia y la tasa de adopción de tecnología entre las mujeres indias. Este estudio también ayudará a descubrir diversos problemas/desafíos que enfrentan las mujeres y los nuevos conocimientos que obtienen al utilizar la tecnología. Esto también ayudará al gobierno indio a formular políticas favorables y esquemas innovadores para que las mujeres proporcionen más poder impulsado por la tecnología. Diseño: se diseña un cuestionario estructurado y se distribuye entre 120 mujeres de áreas semiurbanas del distrito de Udaipur, Rajasthan, según un muestreo de conveniencia. Hallazgos: 83% (100) es la tasa de respuesta y se consideró completa para fines de investigación. El análisis de datos revela que cualquier tipo de tecnología es utilizada principalmente por mujeres educadas que tienen entre 25 y 50 años y son amas de casa. La mayoría de las mujeres han comprado nuevos dispositivos, como teléfonos inteligentes, computadoras de escritorio/portátiles y tabletas, por diferentes motivos, principalmente para trabajar desde casa, entretenimiento, viajes, aprendizaje, comercio, etc. Del estudio se desprende que la mayoría de las mujeres no tienen conocimientos suficientes sobre lineamientos éticos / código de ética en materia de ciberseguridad. Lamentablemente, las mujeres se limitan a utilizar la tecnología debido a graves problemas técnicos, falta de privacidad, discriminación de género y brecha digital. Otras razones, como cuestiones domésticas, sobrecarga de responsabilidades, bajas tasas de alfabetización, no participación en la toma de decisiones, etc., son algunas otras razones detrás de una menor adopción de tecnología por parte de las mujeres. Estos factores son responsables de una menor interacción de las mujeres con la tecnología y, por lo tanto, crean obstáculos para el empoderamiento digital de las mujeres. Valor: un fuerte apoyo conjunto de los miembros de la familia, el gobierno, los formuladores de políticas y las instituciones educativas puede fomentar el empoderamiento de las mujeres. Existe la necesidad de diseñar e implementar diversos programas de apoyo y capacitación electrónica para la sensibilización de todas las mujeres. Fortalecer las normas de seguridad cibernética agregará más poder e innovación al uso de la tecnología. Desmonetización y pandemia La COVID-19 ha roto varias cadenas de oscuridad y ha traído nuevos rayos de sol a nuestras vidas. El nuevo prefijo "e" para todas y cada una de las palabras tiene un nuevo significado: "potenciar electrónicamente a toda la Tierra". Por lo tanto, empoderar a las mujeres se ha convertido en la máxima prioridad de todas y cada una de las naciones.

P a l a b r a s   c l a v e: Brecha digital, Empoderamiento de las mujeres, cambio tecnológico, Inclusión digital de las mujeres, Capacitación, ciberseguridad y ética, Nari Shakti

Technology Empowering Women of India

Харшита Бхатнагар

Технологии расширяют возможности женщин Индии

А н н о т а ц и я

Цель. Это исследование представляет собой попытку определить основное влияние технологий на расширение прав и возможностей женщин в современную эпоху. Чтобы определить влияние технологий, важно знать уровень осведомленности и скорость внедрения технологий среди индийских женщин. Это исследование также поможет выявить различные проблемы/ проблемы, с которыми сталкиваются женщины, и новые знания, полученные ими при использовании технологий. Это также поможет индийскому правительству разработать благоприятную политику и инновационные схемы для женщин, чтобы обеспечить больше власти, основанной на технологиях. Дизайн. Структурированная анкета разработана и распространена среди 120 женщин полугородских районов округа Удайпур, Раджастхан, на основе удобной выборки. Результаты: 83% (100) представляют собой процент ответов и признаны полными для исследовательских целей. Анализ данных показывает, что технологиями в любой форме в основном пользуются образованные женщины в возрасте от 25 до 50 лет, которые занимаются домашним хозяйством. Максимум женщин приобрели новые устройства, такие как смартфоны, настольные компьютеры/ноутбуки и планшеты, по разным причинам, в основном для работы на дому, развлечений, путешествий, обучения, торговли и т. д. Из исследования видно, что большинство женщин не имеют или имеют недостаточные знания о этические руководящие принципы/кодекс этики в отношении кибербезопасности. К сожалению, женщины ограничивают себя в использовании технологий из-за серьезных технических проблем, отсутствия конфиденциальности, гендерной дискриминации и цифрового разрыва. Другие причины, такие как бытовые проблемы, чрезмерная ответственность, низкий уровень грамотности, неучастие в принятии решений и т. д., являются лишь немногими другими причинами меньшего внедрения технологий женщинами. Эти факторы ответственны за меньшее взаимодействие женщин с технологиями и тем самым создают камень преткновения в расширении прав и возможностей женщин в цифровых технологиях. Ценность. Сильная поддержка членов семьи, правительства, политиков и образовательных учреждений вместе может способствовать расширению прав и возможностей женщин. Существует потребность в разработке и реализации различных программ электронного обучения и поддержки женщин со всего мира. Укрепление норм кибербезопасности добавит больше возможностей и инноваций в использование технологий. Демонетизация и пандемия COVID-19 разорвали различные оковы тьмы и принесли новый свет в нашу жизнь. Новый префикс «e» к каждому слову имеет новое значение «расширение электронных возможностей всей Земли». Таким образом, расширение прав и возможностей женщин стало главным приоритетом каждой страны.

К л ю ч е в ы е   с л о в а: цифровой разрыв, расширение прав и возможностей женщин, технологические изменения, цифровое включение женщин, обучение, кибербезопасность и этика, Нари Шакти