

'Apptivism': Women's activism through digital applications to solve invisibilized needs

'Apptivismo': Activismo femenino a través de aplicaciones digitales para resolver necesidades invisibilizadas

Claudia Yáñez-Valdés*

Facultad de Ciencias Económicas y Administrativas, Universidad Católica de la Santísima Concepción, Concepción, Chile.
clyanez@ucsc.cl • <https://orcid.org/0000-0001-5437-6714>

Amanda Arias-Ramírez

Facultad de Ciencias Económicas y Administrativas, Universidad Católica de la Santísima Concepción, Concepción, Chile.
aarias@doctorado.ucsc.cl • <https://orcid.org/0009-0001-9641-6865>

María José Ibáñez

CENTRUM Católica Graduate Business School, Lima, Perú and Pontificia Universidad Católica del Perú, Lima, Perú.
mjibanez@pucp.edu.pe • <https://orcid.org/0000-0002-5221-1569>

- Article received:
15 November, 2024
- Article accepted:
25 June, 2025
- Published online in articles
in advance:
4 August, 2025

* Corresponding Author

Claudia Yáñez-Valdés

DOI:

<https://doi.org/10.18845/te.v19i3.8138>

Abstract: The rise of mobile applications developed by women and for women has significantly expanded, addressing diverse topics such as empowerment, health, and social inclusion. These applications have evolved into a distinct form of digital social entrepreneurship, providing innovative solutions to gender-specific issues. However, there remains limited consensus on whether these initiatives effectively contribute to making women's needs more visible and addressing gender disparities in digital spaces. This study examines the role of women-oriented applications as a form of digital activism, assessing their capacity to raise awareness, empower users, and drive social change. Using a thematic analysis of 30 mobile applications created by women, we identified key areas where these technologies contribute to gender equity. Our findings demonstrate that women-led applications not only tackle gender-specific challenges but also act as catalysts for digital activism, fostering community-building, empowerment, and the creation of safe digital spaces. Furthermore, these initiatives align with and significantly advance the United Nations Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 3 (Good Health and Well-being), and SDG 12 (Responsible Consumption and Production). Through sentiment and thematic analysis of user feedback, our results indicate that these applications effectively amplify the visibility of women's unmet needs, provide essential resources, and reduce gender gaps in digital participation. Moreover, the study highlights the creation of support networks among users, where women engage in collective problem-solving and shared experiences. The findings underscore the importance of apptivism, the intersection of app development and activism, as a powerful tool to promote gender equity in digital ecosystems. By demonstrating how digital solutions can serve as mechanisms for social change, this study contributes to the understanding of the impact of women-led technological initiatives.

Keywords: Apptivism, digital social entrepreneurship, gender equity, SDG, women's digital rights.

Resumen: El auge de las aplicaciones móviles desarrolladas por mujeres y para mujeres se ha expandido significativamente, abordando diversos temas como el

empoderamiento, la salud y la inclusión social. Estas aplicaciones se han convertido en una forma distintiva de emprendimiento social digital, ofreciendo soluciones innovadoras a problemáticas específicas de género. Sin embargo, aún existe un consenso limitado sobre si estas iniciativas contribuyen eficazmente a visibilizar las necesidades de las mujeres y a abordar las disparidades de género en los espacios digitales. Este estudio examina el rol de las aplicaciones dirigidas a mujeres como una forma de activismo digital, evaluando su capacidad para generar conciencia, empoderar a las usuarias e impulsar el cambio social. Mediante un análisis temático de 30 aplicaciones móviles creadas por mujeres, identificamos áreas clave donde estas tecnologías contribuyen a la equidad de género. Nuestros hallazgos demuestran que las aplicaciones dirigidas por mujeres no solo abordan los desafíos específicos de género, sino que también actúan como catalizadores del activismo digital, fomentando la construcción de comunidades, el empoderamiento y la creación de espacios digitales seguros. Además, estas iniciativas se alinean con los Objetivos de Desarrollo Sostenible (ODS) de las Naciones Unidas y los promueven significativamente, en particular el ODS 5 (Igualdad de género), el ODS 10 (Reducción de las desigualdades), el ODS 3 (Buena salud y bienestar) y el ODS 12 (Producción y consumo responsables). A través del análisis de sentimientos y temáticos de los comentarios de los usuarios, nuestros resultados indican que estas aplicaciones amplifican eficazmente la visibilidad de las necesidades insatisfechas de las mujeres, proporcionan recursos esenciales y reducen las brechas de género en la participación digital. Además, el estudio destaca la creación de redes de apoyo entre los usuarios, donde las mujeres participan en la resolución colectiva de problemas y comparten experiencias. Los hallazgos subrayan la importancia del *apptivismo*, la intersección del desarrollo de aplicaciones y el activismo, como una poderosa herramienta para promover la equidad de género en los ecosistemas digitales. Al demostrar cómo las soluciones digitales pueden servir como mecanismos para el cambio social, este estudio contribuye a la comprensión del impacto de las iniciativas tecnológicas lideradas por mujeres.

Palabras clave: *Apptivismo*, emprendimiento social digital, equidad de género, ODS, derechos digitales de las mujeres.

1. Introduction

The expansion of digital technologies has transformed entrepreneurship, offering new opportunities for innovation, accessibility, and social impact (Ciarli *et al.*, 2021; Acs *et al.*, 2022; Yáñez-Valdés & Guerrero, 2024). Within this evolving landscape, women-led mobile applications have emerged as powerful tools to address gender-specific challenges, including safety, health, economic inclusion, and social empowerment. These applications exemplify the intersection between digital entrepreneurship and activism, providing both practical solutions and a means of amplifying women's voices in digital spaces (Pergelova *et al.*, 2019; Wheadon & Duval-Couetil, 2019). However, despite their increasing prevalence, research on the extent to which these applications contribute to gender equity and function as platforms for digital activism remains limited (Agarwal *et al.*, 2020; Damiani & Rodríguez-Modroño, 2024). This study seeks to explore the role of women-oriented applications as mechanisms for social change, examining their effectiveness in raising awareness, fostering empowerment, and reducing gender disparities in digital environments.

The literature has widely documented the gender gap in technology and digital entrepreneurship, emphasizing the structural, financial, and sociocultural barriers that hinder women's participation in these fields (Brush *et al.*, 2019; Suseno & Abbott, 2021). Women entrepreneurs often face restricted access to funding, underrepresentation in leadership roles, and the

persistence of gendered stereotypes that frame innovation and technological expertise as male-dominated domains (Bayon et al., 2016; Miric et al., 2023; Pawluczuk et al., 2021). At the same time, digital activism has emerged as a transformative force, enabling women to challenge patriarchal norms, mobilize communities, and advocate for policy change. Campaigns such as #MeToo, #EverydaySexism, and #Hollaback! have demonstrated how digital platforms can amplify women's voices and expose systemic inequalities (Suominen, 2018; Batool et al., 2022; Loney-Howes et al., 2022). These movements highlight the potential of digital tools to foster social change, raising the question of whether women-led applications operate as extensions of digital activism, influencing gender narratives and promoting equity in digital ecosystems.

To examine this issue, the study employs a mixed-method approach, integrating thematic analysis and sentiment analysis of 30 mobile applications developed by women. The dataset includes applications focused on women's security, economic inclusion, health, education, and sustainable consumption. Thematic analysis was conducted to identify core functionalities and assess their alignment with key gender-related challenges (Rosca et al., 2020). In parallel, sentiment analysis was applied to user reviews to evaluate how these applications are perceived by their target audience, offering insights into their practical impact and reception (Martínez Dy et al., 2017; Martínez Dy, 2019). Furthermore, this study examines how these applications contribute to the United Nations Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 3 (Good Health and Well-being), and SDG 12 (Responsible Consumption and Production).

By linking digital entrepreneurship with activism, this study aims to demonstrate that women-led applications not only address immediate gender-specific needs but also act as digital advocacy platforms that foster engagement, community-building, and empowerment. The findings contribute to the broader understanding of appivism, illustrating how digital tools can bridge social activism and technological innovation to promote gender equity (Topidi & Metcalfe, 2024; Yang & Zhang, 2023).

The remainder of this paper is structured as follows: Section 2 provides a comprehensive literature review, examining the gender gap in technology and digital entrepreneurship, as well as the role of digital activism in addressing gender disparities. Section 3 outlines the methodology, detailing the data collection process. Section 4 presents the results, highlighting key trends in app functionalities, user perceptions, and their contributions to the Sustainable Development Goals (SDGs). Section 5 discusses the implications of the findings, emphasizing the impact of women-led applications on digital activism, gender empowerment, and social inclusion. Finally, Section 6 concludes the study by summarizing key insights.

2. Theoretical framework

The intersection of digital entrepreneurship, gender equity, and digital activism provides the foundation for understanding the role of women-led mobile applications as a mechanism for social change. This study explores three key themes: the gender gap in technology and entrepreneurship, digital social entrepreneurship as a vehicle for empowerment, and the role of digital activism in fostering gender equity. These themes are directly linked to the research question, which seeks to determine whether women-led applications function not only as practical tools but also as platforms for advocacy and activism. By analyzing how these applications address structural barriers, amplify women's voices, and contribute to the Sustainable Development Goals (SDGs), this study situates women's digital entrepreneurship within broader discussions on innovation, inclusion, and social transformation in digital ecosystems.

2.1 Gender gap in technology and digital entrepreneurship

The gender gap in the technology and digital entrepreneurship sectors has been extensively documented as a persistent and multifaceted issue, shaped by structural, sociocultural, and economic barriers (Damiani & Rodríguez-Modroño, 2024;

Martínez Dy *et al.*, 2017; McAdam *et al.*, 2019). Despite the expanding opportunities in the digital economy, women's representation in technology entrepreneurship remains significantly lower than that of their male counterparts (Miric *et al.*, 2023). This underrepresentation stems from deeply ingrained gender perceptions regarding women's roles in the professional sphere, as well as the limited visibility of female role models in leadership positions within the technology sector (Pawluczuk *et al.*, 2021). The scarcity of women in leadership reinforces the notion that innovation and leadership are inherently male attributes, which negatively impacts women's self-efficacy and confidence in their ability to establish and lead technology ventures (Bhandari, 2019; Pawluczuk *et al.*, 2021).

Sociocultural barriers play a critical role in shaping women's career trajectories, particularly in industries historically dominated by men, such as technology and entrepreneurship (Brush *et al.*, 2019; Suseno & Abbott, 2021). Gender stereotypes that associate attributes such as innovation and leadership with male figures discourage women from pursuing entrepreneurial careers in technology, thereby reinforcing the gender disparity in entrepreneurial activity (Welter, 2020; Wheadon & Duval-Couetil, 2019). Moreover, societal expectations regarding women's roles in the family and society influence their willingness and ability to invest time and resources in entrepreneurial ventures. These expectations are particularly prevalent in cultures with traditional family structures, where women are often expected to prioritize care giving responsibilities over professional aspirations (Agarwal *et al.*, 2020).

Access to capital remains one of the most significant barriers for women entrepreneurs in the technology sector. Female-led ventures are less likely to secure external funding compared to male-led enterprises (Audretsch *et al.*, 2022; Xu *et al.*, 2024). This discrepancy is partly due to the perception that female-founded ventures focus on business models considered less scalable or less attractive to investors (Jennings & Brush, 2013). Additionally, gender stereotypes influence investor decision-making processes, reinforcing the funding gap between male and female entrepreneurs (Harrison *et al.*, 2020; Xu *et al.*, 2024).

Beyond financial biases, women also experience disadvantages in terms of relational capital, or access to strategic networks and mentors in the technology sector. These networks are crucial for obtaining funding, mentorship, and business growth opportunities (Alakaleek *et al.*, 2024). The absence of strong support networks restricts access to essential resources, contributing to lower success rates among female technology entrepreneurs compared to their male peers (McAdam *et al.*, 2019). Furthermore, the limited visibility of women in leadership roles within the tech industry discourages younger generations of women from pursuing technology entrepreneurship, thereby perpetuating the gender gap (Miric *et al.*, 2023; Suseno & Abbott, 2021).

Although the digital environment presents opportunities to mitigate some of these structural barriers—such as enabling remote and collaborative work models—there remains a pressing need for cultural and organizational shifts in the perception of women's roles in technology and entrepreneurship (Bullough *et al.*, 2022). Addressing these disparities requires targeted strategies to improve access to funding, strengthen support networks, and enhance the visibility of women leaders in the tech sector.

Proposition 1: Applications developed by women function as digital activism tools, increasing the visibility of gender-specific issues and promoting social change.

2.2 Digital social entrepreneurship and activism in digital platforms

The most recent literature on digital social entrepreneurship from the perspective of women has revealed a shift in the motivations and goals of these initiatives (Pergelova *et al.*, 2019). Unlike traditional entrepreneurship, women-led initiatives tend to focus on gender-specific problems (Wheadon & Duval-Couetil, 2019). This trend reflects the need for

digital tools that not only solve practical problems, but also contribute to the visibility of social issues, especially those that disproportionately affect women (Agarwal et al., 2020; Damiani & Rodríguez-Modroño, 2024). This differentiated approach is fundamental in the current analysis, as it broadens the conversation on gender equity and sustainability in digital environments. Digital activism has enabled women to organize and voice their demands through social campaigns such as #MeToo, #EverydaySexism and Hollaback! These campaigns have challenged patriarchal norms and made machismo and gender-based violence visible in traditional and digital spaces, using platforms such as Twitter, Facebook and blogs to reach a global audience (Batool et al., 2022; Loney-Howes et al., 2022). Studies on this type of activism highlight how social networks enable the articulation of feminist campaigns that confront sexism and promote women's empowerment on a mass scale (Batool et al., 2022). In some contexts, digital activism is especially relevant, as it provides women in countries with legal or social restrictions on their public participation an avenue to promote social change without direct confrontation. This is evident in regions such as the Middle East, where female activism in social networks is often a silent and persistent strategy of occupying traditionally male spaces of influence (Alkhaled, 2021). Women entrepreneurs have leveraged digital technologies not only to promote their businesses, but also to innovate in the creation of projects with social impact (Rosca et al., 2020). Through digitization, women entrepreneurs have developed solutions in areas such as education, health and community development, demonstrating how technology can empower them and expand their reach.

Digital entrepreneurs face additional challenges when their initiatives span multiple marginalized identities, such as gender, class, and race (Topidi & Metcalfe, 2024). Although the digital environment is often perceived as a neutral platform, it actually reproduces many of the inequalities of the offline world (Yang & Zhang, 2023). Women digital entrepreneurs in the UK, have reported how their social positions affect their experiences of online entrepreneurship, reflecting the need for an intersectional approach to understanding the challenges and opportunities in digital entrepreneurship (Martínez Dy et al., 2017; Martínez Dy, 2019; McAdam et al., 2020).

Proposition 2: Digital activism enables women to challenge systemic inequalities by leveraging social networks and digital platforms to amplify their voices, mobilize communities, and advocate for policy changes.

2.3 Contribution of applications to the Sustainable Development Goals (SDGs)

Apps developed and led by women have played a key role in promoting the Sustainable Development Goals (SDGs) set out in the 2030 Agenda (Jeevanasai et al., 2023). This impact is particularly visible in reducing inequalities, promoting health and well-being, gender equality and responsible consumption (Leal Filho et al., 2019, 2023). SDG-oriented technology projects, ranging from health applications to education and economic empowerment platforms, are promoting significant social change, contributing to more equitable and sustainable development. SDG 5 focuses on gender equality and the empowerment of women and girls, promoting access to opportunities and the elimination of harmful practices such as violence and discrimination (Roy & Xiaoling, 2022). Digital empowerment has facilitated the development of skills in women to face gender-specific challenges in various regions, thus promoting an inclusive work environment that respects women's rights. These technology initiatives help achieve an environment where women can exercise leadership and actively participate in the digital economy and political decision-making.

Health-oriented applications have proven to be effective tools for improving access to essential health services, particularly for women in vulnerable communities (Ford et al., 2021). These types of platforms facilitate access to critical health and wellness information, particularly in rural or underserved areas, and promote the adoption of preventive health practices (Figueroa et al., 2021). Technological applications in general are playing a fundamental role in reducing inequalities by providing accessible tools for the economic and social inclusion of women in marginalized contexts (Deganis

et al., 2021; Tsatsou, 2022). These efforts are complemented by social and economic inclusion policies, boosting women's resilience and empowerment in traditionally male-dominated sectors.

Proposition 3: Applications developed by women function as digital activism tools, increasing the visibility of gender-specific issues and promoting social change.

3. Methodological design

3.1 Method

This study used a qualitative approach through sentiment and thematic analysis of user comments and descriptions of mobile applications developed by women, oriented to the resolution of gender-specific issues. First, sentiment analysis, often referred to as opinion mining, is a method for detecting whether an author's or user's viewpoint on a topic is positive or negative. Sentiment analysis is defined as the process of obtaining meaningful and semantic information from text using natural processing techniques and determining the writer's attitude, which can be positive, negative, or neutral (Nandwani & Verma, 2021).

Second, thematic analysis is an increasingly popular method for analyzing qualitative data that captures patterns in the raw data and structures the data into meaningful themes (Campbell *et al.*, 2021). It is a technique known for its flexibility and can be employed for both inductive and deductive research designs (Braun & Clarke, 2019).

The purpose of these two analyses was to assess users' perceptions of these apps and determine their alignment with the Sustainable Development Goals (SDGs), especially in relation to issues of gender equality, well-being, and sustainability.

3.2 Sample

Data were collected from 30 apps designed and led by women, focused on issues related to personal safety, emotional and physical well-being, economic inclusion, and responsible consumption. For each app, 10 user comments were selected and analyzed, prioritizing those with the highest number of reactions and marked as useful, in order to obtain a representation of the user experience. In addition, descriptions of each app provided on the download platforms (App Store and Google Play) were collected to complement the thematic analysis.

The selection of applications for this study followed a set of predefined inclusion criteria to ensure relevance and alignment with the research objectives (see [appendix 1](#)). First, applications had to be founded or co-founded by women and explicitly designed to address gender-specific issues such as safety, well-being, economic inclusion, or social empowerment. Second, the applications needed to be available on widely used platforms (Google Play Store or Apple App Store) to ensure accessibility and impact. Third, only applications with a minimum of 5,000 downloads and at least 100 user reviews were considered, ensuring a significant user base and sufficient data for analysis. Additionally, the apps had to provide a clear social impact component, such as fostering community engagement, supporting advocacy efforts, or contributing to the United Nations Sustainable Development Goals (SDGs). Exclusion criteria included applications that were inactive, had not been updated in the last 12 months, or lacked sufficient publicly available user data for thematic and sentiment analysis.

3.3 Data collection and analysis procedure

3.3.1 Sentiment analysis

To evaluate the general perception of the users, a sentiment analysis was performed on the comments, classifying them into positive, negative and neutral sentiment categories. This analysis made it possible to identify patterns of satisfaction, criticisms and specific aspects highlighted by the users in their experiences. The comments were categorized according to their emotional charge using an automated MaxQDA sentiment analysis tool, which facilitated an accurate and unbiased classification.

3.3.2 Thematic analysis

Thematic analysis was conducted to identify the main thematic areas addressed by the apps and their contributions to the SDGs. Using MaxQDA as supporting software, app comments and descriptions were coded and categorized into recurring themes, such as personal safety, emotional well-being, economic inclusion, and sustainability. These themes were then aligned with the SDGs to assess their potential contribution to sustainable development. The results were organized into categories according to SDG 3 (Health and well-being), SDG 5 (Gender equality), SDG 10 (Reducing inequalities) and SDG 12 (Responsible production and consumption). To complement the qualitative analysis, descriptive statistical methods were applied to the classification of sentiments and the frequency of themes associated with the SDGs. Likewise, the frequency with which the apps addressed each SDG was evaluated, making it possible to identify which goals were most frequently aligned with the themes of the apps.

3.4 Validation and reliability

To ensure the reliability of the analysis, a double-coding review process was employed in the thematic analysis, where two independent researchers categorized the data and compared the results. Discrepancies were discussed and resolved by consensus. In addition, the use of automated analysis tools, such as sentiment analysis software and MAXQDA, allowed consistency to be maintained.

4. Analysis and Results

This study aimed to determine whether women-led applications serve as platforms for digital activism, empowerment, and gender equity, addressing practical needs while contributing to broader social transformation. The analysis of 30 applications revealed three key findings: (1) these applications actively enhance visibility and awareness of gender-specific challenges, (2) they provide technological tools that empower women by fostering security, economic inclusion, and well-being, and (3) they significantly align with and contribute to key Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 3 (Good Health and Well-being), and SDG 12 (Responsible Consumption and Production).

We conducted a sentiment analysis of user comments on the applications studied, with the objective of evaluating the general perception and experiences associated with these technological tools aimed at solving gender-specific problems. [Table 1](#) summarizes the quantitative results of this evaluation, categorizing the comments into positive, negative and neutral feelings. The results show a prevalence of positive comments (65%) versus negative (10%) and neutral (25%), suggesting a favorable reception towards applications developed by women.

Table 1. Sentiment analysis results

Type of Sentiment	Highlights	Percentage of total
Positive	Ease of use, accessibility, relevance to users' daily lives	High frequency 65%
Negative	Inclusiveness issues, perceived responsiveness to suggestions.	Lower frequency 10%
Neutral	Descriptions of specific functionalities. No clear opinion	Medium frequency 25%

4.1 Positive sentiment analysis

Comments highlighting the simplicity and accessibility of the application, which is key to user retention. Users appreciate apps that offer a complete set of useful tools, especially in the professional and creative context. Some comments show a high level of enthusiasm, especially in fitness and social networking apps, where the emotional connection can be greater. Creative Tools and Health & Fitness oriented apps meet specific needs, which generates a highly positive experience. The positive perception also reflects a strong appreciation for practical features and ease of use, essential elements for user retention in apps in these categories.

4.2 Negative sentiment analysis

The only negative sentiment in the data set highlights a dissatisfaction related to perceived inclusiveness or responsiveness to user suggestions. Although the number of negative comments is low, this aspect of responsiveness could be an area to investigate to better understand user perception in similar contexts.

4.3 Neutral sentiment analysis

Many of the neutral comments seem to focus on descriptive aspects of the applications without a strong opinion. Neutral comments in categories such as Services and Social Networking may reflect an experience that meets basic expectations but does not stand out significantly. Apps in the Services and Social Networking categories have a significant number of neutral comments, which could indicate that they fulfill basic functions without wowing users. This type of sentiment suggests areas of opportunity were improving the experience or adding differentiating features could turn the neutral perception into a positive one.

4.4 Analysis by content type

When segmenting the comments by the type of content of the application, in Creative Tools and Health and Fitness, positive comments predominate, which could be due to the fact that these applications meet specific and clear needs, generating a stronger connection with the users. Comments in the social networking and service categories are mostly neutral, which may reflect less memorable experiences. This suggests that improvement in key aspects, such as interactivity and personalization, could help improve user perception. Satisfaction appears to be closely linked to ease of use, full functionality and practical usefulness, particularly in creative tools and fitness applications. Meanwhile, neutrality prevails in service and social networking applications, where experiences are perceived as satisfying but without a strong emotional connection (see [table 2](#)). The analysis suggests that user comments reflect an experience of gratitude and comparison,

suggesting that these apps are well positioned in aspects valued by the female audience, such as ease of use and satisfaction with specific functionalities. The presence of comparison and gratitude terms indicates a perception of improvement relative to other options in the market.

The apps analyzed seem to be well aligned with the expectations of the female audience, especially in terms of safety, emotional support, professional and family usefulness. This inclination could explain the prevalence of appreciative comments and favorable comparison with other apps, suggesting that they meet the specific demands and concerns of this audience.

Table 2. Sentiment analysis by type of content

Type of Content	Sentiment	Highlights	Percentage of Total
Social Networking	Positive	Emotional connection, social support, ease of use	60%
	Negative	Inclusiveness and safety in interactions	15%
	Neutral	General descriptions without opinion on functionality	25%
Education	Positive	Educational usefulness, professional value, accessibility	70%
	Negative	Few customization options	5%
	Neutral	Comments on specific features	25%
Services	Positive	Ease and confidence in accessing services	50%
	Negative	Perception of insufficient responsiveness or unreliability in some cases	10%
	Neutral	Information on platform functionality	40%
Health and Fitness	Positive	Wellness benefits, accessibility, ease of use	75%
	Negative	Lack of additional support or specific functions	5%
	Neutral	Descriptions of exercises and functionalities	20%

4.5 Thematic analysis

For the thematic analysis, we classified the applications by type and by the problem they solve (see [Table 3](#)). We also classified the comments according to the main relevant topics (see [Appendix 2](#)).

These applications play essential roles in various aspects of daily life, with a focus on women’s empowerment, mental health and inclusion. Regarding empowerment, many of these platforms are aimed at improving women’s safety, autonomy, and well-being, whether through support networks, financial tools, or control over risky situations.

On the other hand, there is a clear trend towards mental wellbeing, stress management and the promotion of healthy practices, something that responds to the growing concerns about emotional health in modern society. Some of the applications are aimed at social innovation and sustainability. They address global issues such as food and product waste, promoting responsible consumption and community sharing. Also, several of these apps offer visibility and resources to marginalized groups, such as the African-American community or people with chronic conditions, promoting the inclusion of non-visibility groups.

Table 3. Thematic analysis

Type of App	Description	Themes
Dating application	Creates a safe and equitable environment where women can take the first step, promoting control of the experience.	Safety and Empowerment
App that guarantees female drivers	Provides women with a safe option for transportation.	
App for women who have suffered harassment	Provides immediate help and a reliable support network.	
Online anti-harassment tool	Allows to manage and filter experiences in social networks, focusing on safety.	
Media app for the African American community	Promotes representation and empowerment of a historically marginalized group.	Inclusion and Accessibility
App for people with autism	Facilitates communication and emotional management, supporting both families and professionals.	
Investment platform for women	Designed specifically to help women manage their finances and invest equitably.	
Online communities for people with chronic illnesses	Connect those with similar conditions to offer mutual support.	
Wellness and mental health apps	Several apps are focused on stress reduction, sleep improvement and emotional care, including the use of AI to support mental health.	Wellness and Personal Care
Fitness and physical activity app	Offers access to various nearby activities, promoting physical wellness.	
Safety assessment of cosmetic products	Provides information on the safety of products used in users' daily routines.	Sustainability and Circular Economy
App that fights waste	Allows sharing and receiving objects for free or selling second-hand items, promoting reuse and sustainability.	
Educational content business	Encourages girls' interest in science and engineering, offering toys and educational experiences that promote development in STEM areas (science, technology, engineering and mathematics).	Supporting Education and Child Development

Therefore, apps created by women address relevant and specific issues that mainly affect women, such as personal safety, emotional well-being, labor inclusion and responsible consumption. These apps not only offer practical solutions but also amplify the visibility of these issues in society. Women-led apps reflect a distinctive orientation towards gendered problem solving, which contributes to a digital activism approach. This approach highlights the role of technological tools as platforms for female empowerment and gender equity. Apps raise awareness on specific issues, such as gender-based violence and economic inclusion, however, more research is still needed to understand how these efforts could translate into legislative and structural changes. With respect to the analysis based on the UN Sustainable Development Goals, the apps are organized into different categories, offering digital solutions to specific problems and promoting significant social change in key areas. First, the Security and Empowerment category relates to SDG 5: Gender Equality and SDG 16: Peace, Justice and Strong Institutions. The apps in this category are designed to enhance women's safety and empowerment by providing digital spaces that allow them to move around and make decisions with greater autonomy and protection. For example, one app facilitates access to safe transportation by connecting women users with female drivers, promoting an environment of trust and reducing the risk of incidents. Another app offers support and safety resources for women in situations of violence, providing them with tools and knowledge to act in an informed manner in the face of risks.

The Inclusion and Accessibility category is directly linked to SDG 10: Reducing Inequalities, as these applications seek to break down barriers and promote equity in access to resources and opportunities. Through their functionalities, they facilitate the inclusion and active participation of people with specific needs or language barriers. Another app connects people who are blind or have low vision with volunteers through video calls, allowing them to receive visual assistance in everyday tasks. These applications contribute to reducing inequalities by making services accessible that might otherwise be out of reach for certain groups. In the Sustainability and Circular Economy category, the apps are aligned with SDG 12: Responsible Consumption and Production and SDG 13: Climate Action. These tools encourage responsible consumption and circular economy practices, contributing to environmental sustainability by reducing waste and reusing resources. In this regard, an app that allows users to share food and other products that would otherwise be discarded, promoting a culture of waste reduction and recycling, stands out. Similarly, another app allows users to purchase surplus food at reduced prices, which not only benefits consumers, but also helps reduce food waste and supports businesses in managing their inventories. Both apps contribute to a more sustainable economy aligned with climate change mitigation goals. Finally, the Supporting Education and Child Development category responds to SDG 4: Quality Education by providing tools and resources that improve access to inclusive, quality education. For example, a language learning app facilitates the acquisition of new language skills in an accessible and structured way, benefiting both adults and youth. Another app focuses on early childhood development, offering educational content designed to foster learning in the first years of life. These apps not only improve access to education but also promote the personal and professional development of their users, contributing to educational progress in different contexts. Thus, apps developed by women not only address practical needs, but also generate significant social impact by aligning with the SDGs, promoting a more inclusive, safe, sustainable and equitable digital environment.

Table 4. SDG Categories

Category	Main SDGs
Safety and Empowerment	SDG 5: Gender Equality, SDG 16: Peace, Justice and Strong Institutions
Inclusion and Accessibility	SDG 10: Reducing Inequalities, SDG 12: Responsible Consumption and Production, SDG 13: Climate Action
Sustainability and Circular Economy	SDG 12: Responsible Production and Consumption, SDG 13: Climate Action
Supporting Education and Child Development	SDG 4: Quality Education

4.6. Analysis of propositions

This section presents the analysis of the three theoretical propositions. The findings confirm the role of these initiatives as tools for digital activism, empowerment, and social transformation.

Proposition 1: Applications developed by women function as digital activism tools, increasing the visibility of gender-specific issues and promoting social change.

Thematic analysis revealed that these applications address structural and often invisible challenges, such as gender-based violence, unequal access to healthcare, and the underrepresentation of women in digital spaces. Users highlighted these apps as mechanisms to raise awareness of neglected needs. Sentiment analysis showed that 65% of user comments were positive, emphasizing practical usefulness, perceived safety, and transformative emotional impact. These findings support the view that women-led digital tools not only provide functional solutions but also amplify social demands within the digital sphere.

Proposition 2: Digital activism enables women to challenge systemic inequalities by leveraging social networks and digital platforms to amplify their voices, mobilize communities, and advocate for policy change.

The applications examined fostered safe virtual spaces where women could share experiences, build support networks, and engage in collective action. In restrictive social contexts, these platforms become alternative channels for civic engagement, reducing the risks associated with public exposure. Features such as peer interaction, emotional support, and collaborative mechanisms were identified by users as key to strengthening collective agency and fostering community belonging.

Proposition 3: Applications developed by women function as digital activism tools, increasing the visibility of gender-specific issues and promoting social change.

The analysis showed that many of these applications integrate explicit social missions alongside service provision. Initiatives focused on financial inclusion, education, mental health, and sustainability were prominent. Users reported improvements in financial autonomy and emotional well-being, confirming that these applications operate as mission-driven enterprises with a broader social purpose beyond individual benefit.

5. Discussion

5.1 Contributions

The findings of this study underscore the role of women-led applications as tools of digital activism, bridging the gap between technological innovation and social advocacy. These applications are not only designed to provide practical solutions for gender-specific challenges—such as safety, well-being, and economic inclusion—but also serve as platforms for amplifying women’s voices, fostering empowerment, and building supportive communities (Batool et al., 2022; Loney-Howes et al., 2022; Rosca et al., 2020). The thematic analysis revealed that these applications contribute significantly to gender equity and social inclusion, particularly by promoting community engagement, safe digital spaces, and access to critical resources (Topidi & Metcalfe, 2024; Yang & Zhang, 2023). Furthermore, sentiment analysis of user feedback highlights overwhelmingly positive perceptions, reinforcing the idea that these applications enhance digital participation and encourage women to take an active role in shaping their socio-economic environments (Martínez Dy et al., 2017; Martínez Dy, 2019; McAdam et al., 2020).

Another key contribution of this study is its alignment with the Sustainable Development Goals (SDGs). The results indicate that women-led applications actively support SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 3 (Good Health and Well-being), and SDG 12 (Responsible Consumption and Production) (Agarwal et al., 2020; Damiani & Rodríguez-Modroño, 2024). By addressing gender disparities in access to resources, safety, and economic opportunities, these applications contribute to systemic social change beyond individual user experiences. Their scalability potential suggests that with sustained user engagement and appropriate policy support, digital solutions could be further leveraged to drive wider societal impact and institutional change (Alkhaled, 2021).

5.2. Practical and policy implications

While these applications demonstrate high potential for social impact, their long-term sustainability remains a challenge. The effectiveness of digital activism through mobile applications depends not only on initial user adoption but also on continued engagement, financial viability, and institutional support. Sustaining the impact of these initiatives requires strategies that ensure long-term user retention, continuous technological updates, and data security measures to maintain trust and usability (Bauer, 2018; Lafuente et al., 2020). Moreover, the ability of these applications to create meaningful and lasting change is influenced by external factors such as digital literacy, internet accessibility, and socio-political environments that either support or limit their reach (Bullough et al., 2022).

From a policy perspective, the scalability and financial sustainability of women-led applications face critical challenges. Access to funding remains a significant barrier, as many female-founded digital ventures struggle to secure investment compared to male-led counterparts (Audretsch et al., 2022; Xu et al., 2024). Public policies that promote gender-inclusive investment strategies and funding initiatives targeted at social impact-driven tech ventures could provide much-needed support to these applications, allowing them to grow and reach underserved communities. Additionally, governmental and institutional partnerships could enhance the credibility and integration of these applications into broader public service initiatives, such as education programs, health services, or gender-based violence prevention strategies (Jennings & Brush, 2013; Harrison et al., 2020; Lafuente et al., 2023; Xu et al., 2024).

Another crucial challenge is the lack of regulatory frameworks and policies that facilitate the integration of digital solutions into long-term social programs (Acs et al., 2022). Governments and organizations should consider developing policies that support the adoption of women-led digital solutions in mainstream public services, ensuring that these tools are not just standalone applications but integrated components of national and local strategies for gender equity and social development. This includes policies that reduce technological access barriers, such as increasing internet affordability, improving digital literacy, and providing tax incentives or grants to sustain non-profit-oriented applications that generate high social impact (McAdam et al., 2019).

5.3. Challenges and future research directions

Despite their transformative potential, women-led applications face structural, financial, and technological challenges that may limit their long-term impact. Ensuring continued user engagement requires not only regular updates and improved functionalities but also a sense of community and trust among users to maintain adoption rates. Furthermore, while these applications excel at raising awareness and providing solutions to gender-specific issues, further research is needed to assess their long-term behavioral and policy impact.

Future studies should explore the effectiveness of these applications in shaping institutional responses and influencing policy changes at local, national, and global levels. Additionally, there is a need to investigate how digital entrepreneurship policies could be restructured to provide more inclusive opportunities for women-led ventures, ensuring that these initiatives have access to sustainable funding models, international collaborations, and regulatory protections.

6. Conclusions

This study demonstrates that the development of applications tailored to women's needs serves as an effective form of digital activism, or "apptivism," leveraging technology to make gender issues more visible and to actively address them in daily life. The findings support the first proposition, showing that women-led applications function as tools for digital activism by raising awareness of gender-specific challenges and fostering social engagement and advocacy. These applications not only

provide practical solutions—such as personal safety, economic inclusion, and emotional well-being—but also contribute to broader cultural transformation by promoting female empowerment and challenging traditional structures within technology and entrepreneurship. Through these platforms, women entrepreneurs are redefining the digital ecosystem, proving that social entrepreneurship can be successfully integrated with principles of equality and social justice.

Furthermore, the study supports the second proposition by demonstrating that women-led applications empower users by offering technological tools that enhance autonomy, safety, and access to economic opportunities. These platforms go beyond their immediate functionalities, serving as catalysts for collective action, community-building, and long-term behavioral change. Additionally, the research supports the third proposition, highlighting that women-led applications contribute significantly to the achievement of key Sustainable Development Goals (SDGs), particularly SDG 5 (Gender Equality), SDG 10 (Reduced Inequalities), SDG 3 (Good Health and Well-being), and SDG 12 (Responsible Consumption and Production).

However, despite their potential, this study also underscores critical challenges regarding the sustainability and scalability of these initiatives—particularly funding limitations, visibility within a highly competitive digital market, and the need for stronger institutional support. The long-term viability of appivism requires a supportive regulatory framework, increased financial investment, and policies that foster gender-inclusive digital entrepreneurship. Without these structural reinforcements, these applications risk remaining isolated solutions rather than becoming integrated, large-scale tools for systemic gender equity.

References

- Acs, Z. J., Lafuente, E., & Szerb, L. (2022). A note on the configuration of the digital ecosystem in Latin America. *TEC Empresarial*, 16(1), 1-15. <https://doi.org/10.18845/te.v16i1.5926>
- Agarwal, S., Lenka, U., Singh, K., Agrawal, V., & Agrawal, A. M. (2020). A qualitative approach towards crucial factors for sustainable development of women social entrepreneurship: Indian cases. *Journal of Cleaner Production*, 274, 123135. <https://doi.org/10.1016/j.jclepro.2020.123135>
- Alakaleek, W., Cooper, S. Y., Orser, B., & Harrison, R. (2024). Navigating gender and culture in constructing network ties: perceptions and behaviors of women founders in Jordanian digital businesses. *International Journal of Entrepreneurial Behavior & Research*, 30(10), 2333-2360. <https://doi.org/10.1108/IJEBR-12-2021-1058>
- Alkhaled, S. (2021). Women's entrepreneurship in Saudi Arabia: Feminist solidarity and political activism in disguise? *Gender, Work & Organization*, 28(3), 950-972. <https://doi.org/10.1111/gwao.12626>
- Audretsch, D. B., Belitski, M., & Brush, C. (2022). Innovation in women-led firms: An empirical analysis. In Link, A.N., Cristiano Antonelli, C. (Eds.), *Innovative Behavior of Minorities, Women, and Immigrants* (pp. 90-110). Routledge, London.
- Batool, S., Qadri, F. A., & Amir, M. A. (2022). Social media and women empowerment: A digital feminist analysis of “Watch Us Rise” by Watson and Hagan. *Journal of Social Sciences Review*, 2(4), 9-18. <https://doi.org/10.54183/jssr.v2i4.40>
- Bauer, J. M. (2018). The Internet and income inequality: Socio-economic challenges in a hyperconnected society. *Telecommunications Policy*, 42(4), 333-343. <https://doi.org/10.1016/j.telpol.2017.05.009>
- Bayon, M. C., Lafuente, E., & Vaillant, Y. (2016). Human capital and the decision to exploit innovative opportunity. *Management Decision*, 54(7), 1615-1632. <https://doi.org/10.1108/MD-04-2015-0130>
- Bhandari, A. (2019). Gender inequality in mobile technology access: The role of economic and social development. *Information, Communication & Society*, 22(5), 678-694. <https://doi.org/10.1080/1369118X.2018.1563206>

- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589-597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Brush, C., Edelman, L. F., Manolova, T., & Welter, F. (2019). A gendered look at entrepreneurship ecosystems. *Small Business Economics*, 53, 393-408. <https://doi.org/10.1007/s11187-018-9992-9>
- Bullough, A., Guelich, U., Manolova, T. S., & Schjoedt, L. (2022). Women's entrepreneurship and culture: Gender role expectations and identities, societal culture, and the entrepreneurial environment. *Small Business Economics*, 58(2), 985-996. <https://doi.org/10.1007/s11187-020-00429-6>
- Campbell, K. A., Orr, E., Durepos, P., Nguyen, L., Li, L., Whitmore, C., Gehrke, P., Graham, L., & Jack, S. M. (2021). Reflexive thematic analysis for applied qualitative health research. *The Qualitative Report*, 26(6), 2011-2028. <https://doi.org/10.46743/2160-3715/2021.5010>
- Ciarli, T., Kenney, M., Massini, S., & Piscitello, L. (2021). Digital technologies, innovation, and skills: Emerging trajectories and challenges. *Research Policy*, 50(7), 104289. <https://doi.org/10.1016/j.respol.2021.104289>
- Damiani, F., & Rodríguez-Modroño, P. (2024). Measuring the digital inclusion of women: A poset-based approach to the women in digital scoreboard. *Quality & Quantity*, 58(1), 705-722. <https://doi.org/10.1007/s11135-023-01666-z>
- Deganis, I., Haghian, P. Z., Tagashira, M., & Alberti, A. (2021). *Leveraging digital technologies for social inclusion*. United Nations Department of Economic and Social Affairs.
- Figueroa, C. A., Luo, T., Aguilera, A., & Lyles, C. R. (2021). The need for feminist intersectionality in digital health. *The Lancet Digital Health*, 3(8), e526-e533. [https://doi.org/10.1016/S2589-7500\(21\)00118-7](https://doi.org/10.1016/S2589-7500(21)00118-7)
- Ford, A., De Togni, G., & Miller, L. (2021). Hormonal health: Period tracking apps, wellness, and self-management in the era of surveillance capitalism. *Engaging Science, Technology, and Society*, 7(1), 48. <https://doi.org/10.17351/ests2021.655>
- Harrison, R. T., Botelho, T., & Mason, C. M. (2020). Women on the edge of a breakthrough? A stereotype threat theory of women's angel investing. *International Small Business Journal*, 38(8), 768-797. <https://doi.org/10.1177/0266242620927312>
- Jeevanasai, S. A., Saole, P., Rath, A. G., Singh, S., Rai, S., & Kumar, M. (2023). Shades & shines of gender equality with respect to sustainable development goals (SDGs): The environmental performance perspectives. *Total Environment Research Themes*, 8, 100082. <https://doi.org/10.1016/j.totert.2023.100082>
- Jennings, J. E., & Brush, C. G. (2013). Research on women entrepreneurs: challenges to (and from) the broader entrepreneurship literature? *Academy of Management Annals*, 7(1), 663-715. <https://doi.org/10.1080/19416520.2013.782190>
- Lafuente, E., Szerb, L., & Rideg, A. (2020). A system dynamics approach for assessing SMEs' competitiveness. *Journal of Small Business and Enterprise Development*, 27(4), 555-578. <https://doi.org/10.1108/JSBED-06-2019-0204>
- Lafuente, E., Vaillant, Y., & Rabetino, R. (2023). Digital disruption of optimal co-innovation configurations. *Technovation*, 125, 102772. <https://doi.org/10.1016/j.technovation.2023.102772>
- Leal Filho, W., Kovaleva, M., Tsani, S., Țîrcă, D.-M., Shiel, C., Dinis, M. A. P., Nicolau, M., Sima, M., Fritzen, B., & Lange Salvia, A. (2023). Promoting gender equality across the sustainable development goals. *Environment, Development and Sustainability*, 25(12), 14177-14198. <https://doi.org/10.1007/s10668-022-02656-1>
- Leal Filho, W., Shiel, C., Paço, A., Mifsud, M., Ávila, L. V., Brandli, L. L., Molthan-Hill, P., Pace, P., Azeiteiro, U. M., Vargas, V. R., & Caeiro, S. (2019). Sustainable development goals and sustainability teaching at universities: Falling behind or getting ahead of the pack? *Journal of Cleaner Production*, 232, 285-294. <https://doi.org/10.1016/j.jclepro.2019.05.309>
- Loney-Howes, R., Mendes, K., Fernández Romero, D., Fileborn, B., & Núñez Puente, S. (2022). Digital footprints of# MeToo. *Feminist Media Studies*, 22(6), 1345-1362. <https://doi.org/10.1080/14680777.2021.1886142>

- Martínez Dy, A. (2019). Levelling the playing field? Towards a critical-social perspective on digital entrepreneurship. *Futures*, 102438. <https://doi.org/10.1016/j.futures.2019.102438>
- Martínez Dy, A. M., 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. <https://doi.org/10.1177/0018726716650730>
- McAdam, M., Crowley, C., & Harrison, R. T. (2019). “To boldly go where no [man] has gone before”-Institutional voids and the development of women’s digital entrepreneurship. *Technological Forecasting and Social Change*, 146, 912-922. <https://doi.org/10.1016/j.techfore.2018.07.051>
- McAdam, M., Crowley, C., & Harrison, R. T. (2020). Digital girl: Cyberfeminism and the emancipatory potential of digital entrepreneurship in emerging economies. *Small Business Economics*, 55(2), 349-362. <https://doi.org/10.1007/s11187-019-00301-2>
- Miric, M., Yin, P.-L., & Fehder, D. C. (2023). Population-level evidence of the gender gap in technology entrepreneurship. *Strategy Science*, 8(1), 62-84. <https://doi.org/10.1287/stsc.2022.0170>
- Nandwani, P., & Verma, R. (2021). A review on sentiment analysis and emotion detection from text. *Social Network Analysis and Mining*, 11(1), 81. <https://doi.org/10.1007/s13278-021-00776-6>
- Pawluczuk, A., Lee, J., & Gamundani, A. M. (2021). Bridging the gender digital divide: An analysis of existing guidance for gender digital inclusion programmes’ evaluations. *Digital Policy, Regulation and Governance*, 23(3), 287-299. <https://doi.org/10.1108/DPRG-11-2020-0158>
- Pergelova, A., Manolova, T., Simeonova-Ganeva, R., & Yordanova, D. (2019). Democratizing entrepreneurship? digital technologies and the internationalization of female-led SMEs. *Journal of Small Business Management*, 57(1), 14-39. <https://doi.org/10.1111/jsbm.12494>
- Rosca, E., Agarwal, N., & Brem, A. (2020). Women entrepreneurs as agents of change: A comparative analysis of social entrepreneurship processes in emerging markets. *Technological Forecasting and Social Change*, 157, 120067. <https://doi.org/10.1016/j.techfore.2020.120067>
- Roy, C. K., & Xiaoling, H. (2022). Achieving SDG 5, gender equality and empower all women and girls, in developing countries: How aid for trade can help? *International Journal of Social Economics*, 49(6), 930-959. <https://doi.org/10.1108/IJSE-12-2020-0813>
- Suominen, A. (2018). Apptivism, farming, and ecojustice art education. In Foster, R., Mäkelä, J., Rebecca Martusewicz, R. (Eds.), *Art, EcoJustice, and Education* (pp. 141-151). Routledge, New York. ISBN (e-book): 9781315188447
- Suseno, Y., & Abbott, L. (2021). Women entrepreneurs’ digital social innovation: Linking gender, entrepreneurship, social innovation and information systems. *Information Systems Journal*, 31(5), 717-744. <https://doi.org/10.1111/isj.12327>
- Topidi, K., & Metcalfe, J. (2024). Digital (mis)-representations: understanding ethno-cultural minority identity formation online. *Digital Society*, 3(3), 1-26. <https://doi.org/10.1007/s44206-024-00133-y>
- Tsatsou, P. (2022). Vulnerable people’s digital inclusion: Intersectionality patterns and associated lessons. *Information, Communication & Society*, 25(10), 1475-1494. <https://doi.org/10.1080/1369118X.2021.1873402>
- Welter, F. (2020). Contexts and gender—looking back and thinking forward. *International Journal of Gender and Entrepreneurship*, 12(1), 27-38. <https://doi.org/10.1108/IJGE-04-2019-0082>
- Wheadon, M., & Duval-Couetil, N. (2019). The gendering of entrepreneurship on reality television. *Journal of Small Business Management*, 57(4), 1676-1697. <https://doi.org/10.1111/jsbm.12443>
- Xu, L., Ou, A. Y., Park, H. D., & Jiang, H. (2024). Breaking barriers or maintaining status quo? Female representation in decision-making group of venture capital firms and the funding of woman-led businesses. *Journal of Business Venturing*, 39(1), 106368. <https://doi.org/10.1016/j.jbusvent.2023.106368>

- Yang, J., & Zhang, M. (2023). Beyond structural inequality: A socio-technical approach to the digital divide in the platform environment. *Humanities and Social Sciences Communications*, 10(1), 1-12. <https://doi.org/10.1057/s41599-023-02326-1>
- Yáñez-Valdés, C., & Guerrero, M. (2024). Determinants and impacts of digital entrepreneurship: A pre- and post-COVID-19 perspective. *Technovation*, 132, 102983. <https://doi.org/10.1016/j.technovation.2024.102983>

Appendix

Appendix 1. Women-led applications analyzed

#	App	Founder
1	Bumble	Whitney Wolfe
2	Canva	Melanie Perkins
3	She Taxi	María Eva Juncos
4	ClassPass	Payal Kadakia
5	Zolvers	Cecilia Retegui, Mariana Sorribes
6	PanoramApp	Madeleine Sanzana
7	Autistapp	Melissa Muñoz
8	Think Dirty	Lily Tse
9	BetterMe	Victoria Repa
10	SOSfem	Mónica Vargas
11	Blavity	Morgan DeBaun
12	Peptalk App	Meggie Palmer
13	Thrive Global	Arianna Huffington
14	Stitch Fix	Katrina Lake
15	TheSkimm	Carly Zakin y Danielle Weisberg
16	Rent the Runway	Jennifer Hyman y Jennifer Fleiss
17	HopSkipDrive	Joanna McFarland, Janelle McGlothlin y Carolyn Yashari Becher
18	FarmRise	Anastasia Volkova
19	Ellevest	Sallie Krawcheck
20	Hey! Vina	Olivia June
21	Glossier	Emily Weiss
22	LearnVest	Alexa Von Tobel
23	GoldieBlox	Debbie Sterling
24	MyHealthTeams	Mary Ray y Eric Peacock
25	GlamSquad	Alexandra Wilkis Wilson
26	Block Party	Tracy Chou
27	Yana: Tu acompañante emocional	Andrea Campos
28	Olio	Tessa Clarke
29	Resilience Care	Céline Lazorthes
30	Eventbrite	Julia Hartz

Appendix 2. Thematic analysis of women-led applications.

Comments	General concept	Aggregate Dimension
Super recommended. It's amazing! They've become very special to me. I can vent whenever I need to without fear of being judged.		
I know I'm not alone here. I'm very grateful to this community for caring and not judging.	Closeness and Trust	
It's excellent, really great! I love being able to find all the cultural activities in one place with details to participate. I hope this initiative continues and improves to become the cultural reference for the region.		
Sometimes I wonder why I stick with SF? Because I feel like we have a personal connection. I feel like my stylist understands me; we have good communication. I feel comfortable and confident.		
I discovered this app while searching for some motivating content to listen to. I needed something new, something that would launch my desire for growth in a new direction. WOW!!! I found speakers that I had never heard of. I found myself starting the day with a new mindset and I took that motivation and shared it with my network while building my own new path for success.	Female Empowerment	
I have been able to connect with reliable clients and increase my income. It is a very useful tool for us.		Empowerment and Support
Good app for Indian farmers in regional languages. Please download, use and fulfill your dreams.		
In a word, working on my financial plan with my advisor makes me feel 'empowered'.		
the creator is a woman who inspires you to want to do things, to get ahead.		
This app is INCREDIBLE and really focused on educating the public about what they're using on their bodies- not on getting any kind of payout. From now on, I'm not going to use any beauty products if I haven't checked them on Think Dirty, first!		
They provide relevant news/stories in a way that's no bs and enjoyable to read. It makes me happy to see a business created and run by women, especially one that's doing so well. I've been subscribed to their email and have been following on social media for a while and am excited to finally check out the app!	Visibility of Women's Issues	
What scares me isn't what I'm doing now but what I'll do when I'm 80 and alone. The feminine focus really helped me plan for that.		
This is a completely impartial, unpaid, unsponsored review from an ordinary person: I've had severe clinical depression since my teens. Now, at 33, I still struggle with dark thoughts that often bring me to the brink. The other night, during my usual "cry on the floor" routine, an ad for this app appeared. I didn't think it was a coincidence once the words I heard made me cry tears of hope. I immediately downloaded and subscribed, and I haven't canceled since. I feel empowered, brave, hopeful, strong, grateful, and confident in my ability to regain control of my life. I've never felt anything like this because no one has ever talked to me about life and courage like these speakers. Saying "thank you" or being grateful for this app will never be enough. You saved me from myself and gave a child their mother back. I hope someone reads this review and gets a chance to reframe their thoughts. To the creators of this app and the speakers whose voices and words gave me life, I can't thank you enough for what you've done.	Physical or Psychological Well-being	Well-being and Safety
It's revolutionized my exercise routine. Now I can attend spin, boxing, and dance classes without signing up for multiple gyms. It's a great way to stay motivated and active.		
Excellent app, the menus are tasty and easy to prepare, and the exercises are gentle. I hadn't exercised in a while, and I was afraid to start because I didn't want to get injured. These exercises are easy to follow. I think choosing Better Me was a great option as it's helped me eat healthier and start a workout routine that's beneficial for my health.		
I've looked for friends twice, and my life has changed for the better.		

Comments	General concept	Aggregate Dimension
<p>"I realized the peace of mind this app brings me."</p> <p>They combined the best of both worlds with social runs, where you run, chat, and share pizza. You just sign up, look nice, and get ready to meet a running partner—or maybe more, who knows? You'll never know if you don't try!</p> <p>This might be the best app on my phone and I was a fan pre-pandemic. Now I have rejoined and love it even more. I'm a SAHM with a small window every morning to workout while my son is in school. This app has allowed me to sign up for a class during that window, cancel if my plans changed, and overall just been an easy app to navigate. When my first class ended up being scheduled incorrectly by the gym itself, customer service was quick and incredibly generous. I have been able to find gyms that have childcare so I can workout, something I would've never known if I didn't have class pass. I have also been desperate to make mom friends, something I also now have a great chance to do with class pass. When I look at the prices of booking a class without class pass, the prices are higher. For instance, one very popular Pilates gym is incredibly expensive and memberships are more expensive than if you took the classes through class pass. Class pass, I love you. Thank you for giving this SAHM a chance to explore different gyms (something I have found daunting without your app), schedule classes and decide if I like them before getting roped into a membership, changing up my day to day by having different options (and in different cities so you can take a class while traveling), and allowing me to have gym time at gyms instead of buying memberships via the open gym option. Buy this app!! Gini Love this app, it really has brought me so much awareness to all the chemicals & horrible ingredients in all my products! I used to think if i need to see the ingredients, just check the back, but companies can be so shady & misleading, making you think their products are all natural, eco-friendly, organic, etc. & then you scan the barcode & the product is an 8-10!</p> <p>Today I listened to "The Qualities of Success" on the App. It was so good I wanted to listen to it again. Thanks to your work and the free content on this app I have been able to learn my worth, and discover new motivators. Now I welcome the tools, opportunities, and people to launch me into the next phase. I know this much! I'll never be negative in my bank account again.</p> <p>It's a good app. Compared to others, this one helps you from the start, addressing your psychological side. If you're unmotivated or struggle to finish workouts because of negative thoughts, this app is perfect. It's tailored to your health and personal goals, which I loved. I no longer feel as isolated with multiple sclerosis. I'm glad to find kind and supportive people. It makes the journey easier.</p>	<p>Physical or Psychological Well-being</p>	<p>Well-being and Safety</p>
<p>My experience has been very satisfying, both with the free version and the premium version, which is super affordable for all the features it offers. Creating designs from scratch or using templates is easy, and you don't need to be an expert.</p> <p>After the storm, the sun came out brighter than ever. Congratulations, you worked hard to help people with autism.</p> <p>They've met every trip request we've made and are always available. Combined with the stability it offers young people in the foster system, it's something truly special.</p> <p>I just downloaded it. I found it very easy to use and well-guided. I liked that you could add and edit routines. I'm a mom of two boys on the spectrum.</p> <p>I just downloaded it. I found it very easy to use and well-guided. I liked that you could add and edit routines. I'm a mom of two boys on the spectrum.</p>	<p>Inclusion and Accessibility</p>	
<p>"Exposure to new things. I like that."</p> <p>Life-changing</p> <p>This product is fantastic. I had no idea how many settings put me at risk, which I wouldn't normally think of as problematic. It fixed everything in minutes. Highly recommend!</p> <p>This app is great because it helps us women take better care of ourselves.</p>	<p>Safety and Trust</p>	

Comments	General concept	Aggregate Dimension
<p>I've used the hair styling service regularly, and the stylists are well-trained and excellent. They arrive on time, are professional, friendly, and efficient. Glamsquad's customer service is also helpful and accommodating.</p>		
<p>It's been a great resource for my daughter. She feels safe going to school in a car instead of a group home van. Her CareDrivers respect her privacy and even check her in and out at school and home. Customer service is outstanding.</p>	Safety and Trust	Well-being and Safety
<p>I love that I can feel secure knowing we still control the conversation with the new app for Opening Moves.</p>		
<p>This can help so many people, especially children and women, who are most at risk. I'm glad this app exists.</p>		
<p>I wanted to share the positive experience I've had with this app so far. During a cost-of-living crisis, it's exactly what my family and I needed with the added bonus of reducing food waste, which is a huge issue here. I couldn't be more grateful for the volunteers who spend time collecting and fairly distributing food.</p>		
<p>For fashion-loving women without the celebrity budget, Rent the Runway is like Netflix for dresses. Find current styles and famous designers, filter by size and color, and get your dream rental dress delivered dry-cleaned and ready to wear.</p>	Sustainability and Circular Economy	
<p>I started using Olio because we needed items for our newborn. After a few pickups, I discovered how wonderful the Olio community is. It's amazing how connected my family feels to our community now. We even distribute flyers to help more people learn about Olio. I feel a real sense of accomplishment as a Food Collection Hero.</p>		
<p>I'm very grateful I took the risk to rent this dress, and even more grateful for showing off my curves proudly instead of hiding under a turtleneck. For all the plus-size girls... rent a fabulous dress from RTR now! You won't regret it.</p>		
<p>It's an essential tool for anyone who uses social media! My privacy settings were overdue for an update, but it would've taken forever to check everything myself. This app did all the work for me.</p>		
<p>Excellent application, it has allowed me to find a job quickly and safely. I recommend it to all domestic workers looking for job opportunities."</p>		
<p>"The best app in apps for farmers and rural locals, the best information on farming activities, informed subsidy tools and other nearby farmers in fruit and vegetable markets."</p>		Utility and Sustainability
<p>we want to tell you our story of struggle, love and empathy as women and workers, we were 3 in 2016 and today (2021) we are more than 300 drivers...we are united by deep compassionate and sororous feelings. With each other, with society, with every mom, dad, teenager, with each of the people who choose us to travel safely. Today we say enough of promises about equality and genuine work opportunities in areas composed mostly by men.</p>	Professional Utility	
<p>A must-have tool for anyone who uses social networks! My privacy settings were due for an update, but I quickly realized that checking them would take forever. Fortunately, it did all the work for me. It showed me what I can't hide on different platforms, which made me realize how much information can be discovered even when you're "private."</p>		
<p>Simply thank you. Thank you for the accompaniment, thank you for the support, thank you for being that light, thank you for the advice, thank you for being there and thank you for listening.</p>		
<p>One thing I will say is that it would be great if the app had more promotion, like an ad on Instagram, Facebook or even a commercial so more people would use it. However, so far I'm thankful and look forward to meeting new friends, thank you developer for caring about us women who have a hard time making friends! You definitely took your time with this app ❤️ .</p>	Appreciation and Gratitude	

Comments	General concept	Aggregate Dimension
<p>Excellent Free app, in which you find the various activities around you, I find activities that are nearby. It is very good, as it brings everything together and can be reviewed in one App.</p> <p>"Simply the best content! A must download."</p> <p>I'm OBSESSED with this app</p> <p>"Addictive and relaxing."</p> <p>Love this App! Everyone NEEDS this!</p> <p>A great way to be reminded of the little things that matter</p> <p>I love that this app provides me a layman's terms version of what's happening in the news, politics, media, etc. I don't have to try to research more information online unless I'm really interested in a specific topic. I work at least 40 hours per week - sometimes 60. So listening to the "notes" is helpful for me on my way to work</p> <p>Affordable and, most importantly, effective products.</p> <p>The brand's image, marketing, and philosophy are amazing.</p>	<p>Appreciation and Gratitude</p>	<p>Utility and Sustainability</p>