Research article

Mental Health of Women F-Commerce Entrepreneurs in South-West Bangladesh

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ABSTRACT

Women's entrepreneurship in F-commerce is gaining popularity in Bangladesh. Women from rural and urban areas tend to start as entrepreneurs through Facebook marketing, as it does not require specific qualifications or massive capital. This study examined the mental health-related challenges faced by female F-commerce entrepreneurs to bolster the notion that both physical and mental health are equally important for completing any activity effectively. It followed a qualitative approach in which 15 in-depth interviews were conducted to collect data using a semi-structured interview guide. The primary data collected from in-depth interviews was thematically analyzed with the NVivo-14 software program. Participants in the study are women entrepreneurs who have been conducting their businesses actively on Facebook pages or groups. This study focuses on the mental health issues of women F-commerce entrepreneurs, emphasizing the interactions between gender and entrepreneurship. The findings revealed cyberbullying and harassment from customers, lack of reliability, financial hardships, family problems, and gender roles as mentionable factors relating to mental health concerns. Other factors include depression, isolation, low mood, pressure, panic attacks, and dominance, which can lead to stress and anxiety. The study suggests cooperation between government and non-government institutions and enhancing mental health awareness for women entrepreneurs in F-commerce in Bangladesh. This study may contribute to achieving three of the United Nations' 17 Sustainable Development Goals: good health and well-being (SDG 3), gender equality (SDG 5), and decent work and economic growth (SDG 8).

ARTICLE INFO

Introduction

Entrepreneurship, as defined in the business field, is the idea of creating and running a business to make money by taking various risks while concentrating on profit or non-profit, development, distinctiveness, and the role of owners and managers, including new concepts, ideas, products, services, markets, or technologies (Gartner, 1990). It is one of the most successful strategies of reducing poverty in developing nations (Frese *et al.,* 2016).

The United Nations Development Programme's (UNDP) Human Development Report (2004) defines a woman entrepreneur as someone, who has started or inherited a business independently or with partners and is willing to take on financial, administrative, and social risks and responsibilities to manage daily tasks. Women can significantly contribute to broader entrepreneurship issues and economic growth (Sarfaraz *et al.*, 2014). Facebook and commerce are combined to form the term 'F-Commerce,' which refers to exchanging products and services on Facebook. In other words, Facebook commerce is a relatively new online entrepreneurial initiative that employs Facebook as an electronic space to promote and implement commercial trades (Ashraf *et al.*, 2021). Bangladesh has a great deal of potential for F-commerce as it is one of the top 10 countries in terms of using Facebook (Tanni, 2021). F-commerce in Bangladesh has grown significantly, with over four lakhs Facebook-based merchants contributing to the sector and typically earning between 10 thousands taka to one lakh taka per month on average (Sazzad, 2024). During the COVID-19 pandemic, more women began pursuing their economic independence and self-determination through entrepreneurship using social media platforms like Facebook (Haque, 2021).

In Bangladesh, there has been significant growth in female entrepreneurship in recent years, particularly in the field of F-Commerce. However, for these entrepreneurs to thrive and sustain their businesses, maintaining good mental health is crucial because studies have shown that mental well-being significantly influences business productivity and decision-making. According to Huang *et al.* (2022), even under normal circumstances, it is a crucial challenge for female entrepreneurs to maintain a high business performance. In Bangladesh, the growth of women's entrepreneurship is facing problems since women fall behind men because of social and economic disadvantages (Hoque & Itohara, 2009). Entrepreneurs often face difficulties such as time limitations and uncertain finances, which impact their mental health negatively (Kiefl *et al.*, 2024). Still, there is an inadequate amount of research on how entrepreneurs can manage stress. Furthermore, research indicates that, compared to the general population, entrepreneurs are more prone to suffer from mental health issues. They have been found to have greater rates of bipolar illness, depression, attention deficit hyperactivity disorder (ADHD), and drug use; 32% of entrepreneurs said they had two or more mental health issues, and 18% said they had three or more (Freeman *et al.*, 2018). According to previous research, internalizing problems, mental health illnesses, and general health issues are more common in women than in men (Rosenfield & Mouzon, 2013). Amid these added challenges, women entrepreneurs who conduct their business through Facebook also experience mental distress, as numerous studies demonstrate the detrimental effects of Facebook usage on users' mental health (Gomes *et al.*, 2011; Marino *et al.*, 2017; Nisar *et al.*, 2019; Faelens *et al.*, 2019; Frost & Rickwood, 2017).

This study is significant because it is closely related to the Sustainable Development Goals (SDGs) that the United Nations adopted in 2015. SDG 3 focuses on ensuring healthy lives and promoting well-being for all ages, while SDG 5 aims to achieve gender equality and empower all women and girls (United Nations, 2023). The dynamic and often challenging nature of F-commerce creates mental health concerns for women that directly affect their overall health and well-being. As a result, it is important to implement mental health policies and measures to provide them. By addressing the particular mental health challenges faced by female entrepreneurs, this study may add value toward developing a more equal business environment in which women can succeed without having to deal with excessively high psychological pressures. Finally, SDG 8 aims for fair economic growth, job opportunities, and good working conditions, emphasizing the importance of mental health for women entrepreneurs in the F-commerce sector to empower them to contribute to economic growth. By including mental health care in the plans, these SDGs can help build a society that is more welcoming, healthy, inclusive, and financially strong.

It is imperative to detect the mental health issues that are deterring women entrepreneurs from moving forward through F-commerce so that they can come up with possible solutions and work more efficiently. These concerns were brought to light in this study in an effort to enhance the mental health of Bangladeshi women entrepreneurs involved in F-commerce. The existing body of literature covers topics such as women's entrepreneurship, F-commerce, the dynamics of F-commerce in Bangladesh, and various aspects of Facebook, including its impact on mental health. However, a gap remains in the investigation of the mental health challenges faced by women entrepreneurs and how they handle those challenges. Therefore, this study filled this research gap by focusing primarily on the mental health issues encountered by women entrepreneurs through finding answers to the following research questions.

Research Questions:
RQ1: Why do female F-commerce entrepreneurs in Bangladesh encounter mental health issues?
RQ2: How do the women entrepreneurs in F-commerce deal with mental health issues?

Literature Review
Studies on women entrepreneurship in F-commerce provide evidence for why women entrepreneurs are increasingly turning to Facebook as a platform for conducting business. Women entrepreneurs in Bangladesh flourish in the F-commerce industry because it allows them the flexibility to balance their personal, familial, and professional lives in this technological age (Basak, 2018). However, Jahan (2017) highlighted significant obstacles for Bangladeshi women entrepreneurs, noting that success requires strong determination and resilience. Similarly, Parvin *et al.* (2012) identified key barriers such as insufficient community support, lack of collateral-free loans, outdated technology, skilled labor shortages, inadequate training and education, poor infrastructure, and insufficient utility services. Likewise, according to Haque (2021), Bangladeshi women entrepreneurs face numerous challenges, including financial difficulty, job loss, and domestic violence, and F-commerce entrepreneurs emphasize the need for additional assistance. These studies advised adjusting the policy and putting it into action to address these issues.

Abrar-ul-Haq *et al.* (2021) explored the key factors influencing the motives and success of female entrepreneurs in India using factor analysis on data collected from 80 women entrepreneurs and identified nine significant indicators, including self-independence, confidence, family responsibilities, and social pressure. These findings highlight the importance of education, skills development, and cultural support in helping successful female entrepreneurship (Abrar-ul-Haq *et al.,* 2021). Besides, according to another study, gender, race, and class influence affect women's entrepreneurial experiences, especially in the digital sector, where traditional gender roles and resource access create structural inequalities (Dy *et al.,* 2017). Moreover, a scoping review on depression among entrepreneurs highlighted that factors such as gender, personality traits, time demands, social isolation, and relationship strain contribute to feelings of failure and shame, deterring help-seeking due to stigma; these underscore a significant but unexplored risk of depression and suicide among entrepreneurs (Cubbon *et al.*, 2021). On the other hand, Jambulingamis *et al.* (2015) identified perceived risks such as financial instability, market uncertainty security concerns, and operational issues, as well as personality traits such as fear of failure, lack of

confidence, and insufficient resilience, as main barriers to entrepreneurship. Correspondingly, Constantinidis (2011) studied the influence of Facebook on women-owned businesses, highlighting how gender-specific activities and women's self-perceptions shape the platform's effectiveness in addressing gender-related challenges.

Frost and Rickwood (2017) identified significant connections between Facebook use and mental health issues, including alcohol use and disordered eating, across six domains, with different strengths and validity of these links. In a related study, Shahzad *et al.* (2021) assessed the effects of late-night social media use on female entrepreneurs, revealing significant increases in life invasion and technostress, leading to reduced cognitive engagement. However, Gardašević *et al.* (2022) highlighted Facebook's crucial role in enhancing business applications, improving advertising effectiveness, and increasing profitability for women entrepreneurs, thereby presenting huge opportunities for career advancement. Another study by Liebana-Cabanillas and Alonso-Dos-Santos (2017) illustrated how social networks influence consumer purchasing decisions, emphasizing age as a positive factor in enhancing online sales growth on platforms like Facebook. Their research also addressed the barriers to adopting and applying F-commerce in entrepreneurial contexts.

However, Frese *et al.* (2016) highlighted the need to encourage entrepreneurship in developing nations in order to accomplish SDGs, such as reducing poverty. They did this by introducing two distinct training interventions: the first focuses on boosting entrepreneurs' personal initiative in developing nations, and the second aims to increase startup rates in these nations by improving participants' entrepreneurial skills and motivation (Frese *et al.*, 2016).

The studies provide important insights into the experiences of women entrepreneurs in F-commerce. Facebook offers easy access and flexibility for starting businesses, but women still face challenges such as lack of support, gender bias, and outdated technology. Furthermore, some research has shown that training programs and education can help entrepreneurs gain skills for better decision-making and planning. Mental health struggles and social pressures have also been found to affect their success, highlighting the need for more support and fair policies. Overall, the studies emphasize the importance of reducing these challenges to help women grow their businesses and contribute to the economy.

While studies on women entrepreneurs and F-commerce in Bangladesh exist, there appears to be limited research specifically addressing the mental health concerns of women conducting business activities through Facebook. The present study aimed to explore the mental health-related challenges faced by women entrepreneurs in F-commerce and to understand the coping strategies they employ to manage these challenges. The study has been framed to detect and bring attention to the prevalent mental health-related challenges of women's entrepreneurship in F-commerce and to identify the coping strategies that the entrepreneurs use to manage mental health challenges.

Theoretical Foundation

The intersectionality theory, introduced by Kimberlé Crenshaw, has been applied in this study since it is relevant to the subject. Intersectionality theory provides a framework for understanding how intersecting identities create unique experiences of disadvantage and discrimination by addressing issues like poverty, healthcare, education, and criminal justice, and asserting that marginalized experiences cannot be understood by merely summing them up (Crenshaw, 2013). According to Carter *et al.* (2015), women, immigrants, and people of color remain 'othered' within the entrepreneurial domain, despite being subject to increasing, although distinct, analyses of their experiences as business owners. Intersectionality prevents marginalized social groups from accessing benefits, however social enterprises' practices, as well as women's activities, can mitigate some of the negative consequences of marginalization, even while the social setting is largely unchanged (Qureshi *et al.*, 2023). Efforts are being made to integrate intersectionality into health-related disciplines, with a notable increase in publications since 2010, though guidance on including it in empirical research remains limited (Kelly *et al.*, 2021).

This study focuses on the mental health issues of women F-Commerce entrepreneurs in Bangladesh. Along with the theory, it highlights how their experiences are shaped by the interplay of gender, entrepreneurship, and the F-Commerce environment. Moreover, the gender-specific challenges women entrepreneurs face are exacerbated by the pressures of running a business and the unique dynamics of the F-Commerce landscape. Women entrepreneurs often encounter gender-specific barriers, such as financial constraints and societal expectations. In addition, their socioeconomic status contributes to economic instability and a lack of supportive networks, which increases their challenges. By applying intersectionality, this study explores how these diverse identities contribute to their mental health struggles. Consequently, this approach is crucial for developing targeted policies and interventions that address their specific needs, ultimately promoting greater equity and well-being.

Methodology

Study Design and Approach

In this study, an exploratory research design was utilized, a methodological approach primarily employed to investigate areas with limited existing knowledge or to gain insights into a problem or phenomenon. According to Stebbins (2001), exploratory research frequently involves qualitative methods such as interviews, focus group discussion (FGD), and literature reviews, which are valuable for gathering rich, detailed data. Consequently, the study's data collection and analysis were conducted using a qualitative research methodology, which emphasizes understanding the nature, explanation, and deeper meaning of phenomena. Qualitative research examines how individuals interpret their experiences and understand the world while focusing on figuring out how and why certain things happen in particular situations (Mohajan, 2018). To collect data, in-depth interviews were conducted face-to-face in this study. Finally, the data were thematically analyzed using NVivo-14 software, allowing the detection of themes and patterns to understand the mental health challenges faced by women entrepreneurs in their F-commerce businesses.

Sampling and Participants

The participants of this study were selected using purposive sampling since certain criteria for respondents needed to be fulfilled to meet the research objective. Before selecting the respondents, specific criteria were established to ensure the relevancy and quality of the sample. The criteria required that respondents: (i) be women holding Bangladeshi citizenship; (ii) be entrepreneurs actively involved in F-commerce for more than six months; (iii) have a workstation located in any south-western districts of Bangladesh; and (iv) maintain an active Facebook page or profile for their business. In-depth interviews were conducted with 15 respondents, and data saturation was achieved, confirming that the sample size was adequate for this investigation. This ensured a comprehensive understanding of the research topic and supported the validity of the findings. Furthermore, any individuals who did not meet these criteria were excluded from the study. Table 1 represents the background information of women entrepreneurs who participated in this study.

Procedure

The selected participants were contacted via phone calls and messages to schedule interviews. Typically, two or three sessions were conducted with each interviewee, as a single session was often insufficient to complete the interview. The duration of the interviews ranged from 20 to 40 minutes. Some participants needed more time to express their thoughts or share experiences comprehensively. Multiple sessions ensured all aspects of the interview were covered in depth without rushing the participant. To ensure accuracy and comprehensiveness, an app or another recording device was used to record the interviews. Initially, the interviews were conducted in Bengali, and then they were subsequently translated into English and transcribed. A substantive translation approach was employed to prevent misinterpretations that might arise from a literal translation.

Data Analysis

The data of this study has been analyzed thematically. Thematic analysis is a method that focuses on identifying, analyzing, and reporting patterns across qualitative data (Braun & Clarke, 2006). According to Braun and Clarke (2006), to effectively analyze data extracts, it is essential not only to paraphrase content but also to identify the themes and their significance. Additionally, conducting a detailed analysis for each theme and considering their narrative within the broader context of the data is crucial. This study employed a qualitative approach. During the analysis, the recordings were examined line by line. Furthermore, the most critical and repetitive quotes were selected to represent the identified themes.

Ethical Consideration

The study strictly followed ethical guidelines. At the beginning of the interviews, all the participants have provided informed consent after being briefed on the study's purpose. They were informed that they could withdraw from the study at any stage without any consequence. To maintain confidentiality, respondents' names were kept anonymous, and they were assured that

their identities would not be revealed in the study. Additionally, they were informed that the data they provided would be used solely for research purposes.

Table 1: Profile of Informants

SN	Name*	Age	Work station	Business Items	Education Level
1	Humyra	22	Barishal	Clothing	HSC
2	Kantasa	23	Jashore	Hand paint cloths	SSC
3	Afrin	23	Satkhira	Hand paint cloths and ornaments	BA
4	Amrin	22	Jashore	Girl's products	SSC
5	Jannat	24	Khulna	Food and fashion items	HSC
6	Sabrina	23	Bagerhat	Hand paint jewelry	BSS
7	Liza	22	Jashore	Arts and crafts	HSC
8	Asma	27	Satkhira	Arts and crafts	MSC
9	Sadia	24	Khulna	Jewelry	MA
10	Afroz	22	Khulna	Hand-painted stuffs	HSC
11	Mehnaz	26	Khulna	Arts	BSS
12	Sultana	26	Khulna	Arts and crafts	MA
13	Nushrat	25	Bagerhat	Cosmetics	BA
14	Farzana	21	Jashore	Girl's belongings	HSC
15	Tania	30	Khulna	Jewelry and watches	MBA

* Owing to the confidential issue, informants' pseudo-names were used.

Results

The identified themes in this research emerged through a qualitative analysis using N-Vivo 14 software. These themes were chosen based on their frequent presence in interviews and data collected from the participants, which reflect the primary challenges these entrepreneurs face in their business and personal lives. Cyber-bullying stood out as a critical theme due to a growing number of cases of harassment and negativity faced online, affecting their mental well-being. Lack of reliability refers to the uncertainty and mistrust women often experience from clients and suppliers, while gender roles and family problems were prevalent, as traditional social expectations and domestic responsibilities often limit women's ability, which creates psychological pressure for them. Financial difficulties also emerged as an important theme, with many women experiencing stress from the shortage of capital and resources. These themes were selected to provide a comprehensive understanding of the factors that significantly impact the mental health of these entrepreneurs.
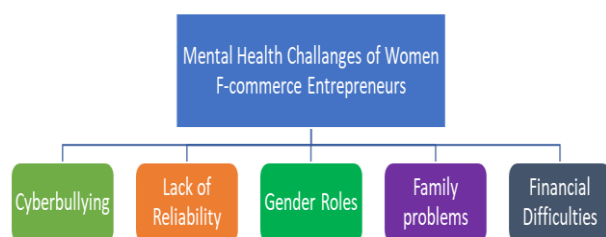
Figure 1: Development of themes using NVivo-14

Impact of Cyberbullying on the Mental Health of Entrepreneurs

The theme focuses on cyberbullying, how female business owners handle it, and its effects on their mental health. Technology is often used to bully female F-commerce entrepreneurs, which negatively affects their mental well-being. While eleven out of fifteen respondents never experienced cyberbullying during their F-commerce journey, the remaining four went through it, mainly through unnecessary messages and comments that sometimes turned out to be abusive. Some respondents shared that they felt stressed after receiving these rude, aggressive, or threatening messages.

"When I was cyberbullied, I began to feel ashamed, apprehensive, anxious, and uncomfortable about what others said or thought about me. I ignored matters related to cyberbullying. Although it made me feel bad, I chose to overlook it because some people in society exist solely to drag us down." (IDI 7)

Sharing incidents of online harassment with friends became the number one preference of those interviewees who faced it. Some respondents claim that they can overcome cyberbullying when they maintain a positive outlook and avoid overthinking. At the same time, some other participants think it is best to stay calm and approach the situation rationally rather than emotionally.

"It depends on the situation. I mainly calm myself first and think wisely. Moreover, I sometimes share the incidents of cyberbullying with my close friends, and they give me constructive advice." (IDI 3)

Other strategies used by entrepreneurs to reduce stress and anxiety related to online harassment include reporting, unfriending, blocking, and taking legal action. However, four respondents stated they had not yet encountered cyberbullying in their work lives. One participant uses a moderation system to monitor and remove abusive content, while another focuses on growth despite negative reviews, balancing cyberbullying risks and customer engagement. Most of them deal with unwanted comments by figuring out why it happened and taking appropriate action for it.

Some provide product refunds and aim to resolve issues quickly. For instance, one entrepreneur said some customers are rude, but this can be resolved by checking the product in front of the delivery man. Mainly, they try to learn from their mistakes and maintain a positive attitude.

"I try to learn from them by investigating the reason for the comment. If there is something wrong on my side, I try to correct those mistakes. Furthermore, I focus on the positive aspects rather than the negative ones." (IDI 15)

To protect themselves and their businesses from cyberbullying and online harassment, respondents stay informed about the latest tactics and trends, set guidelines for behavior on their online platforms, seek legal help if necessary, and block or report individuals who violate their privacy. Additionally, they take criticism well and try to make their work better. They consult specialists, such as a cyber security unit, when needed. Other recommended steps by a few participants are to maintain professionalism and treat customers with care, add the page's name to product images to prevent copying, and maintain equal pricing, ensuring that the price of the products is kept equal with other pages.

"The main thing is to be professional. That is how I think it worked for me. When dealing with customers, I was very professional and communicated in a way that showed I cared. As a result, I did not have any problems." (IDI 12)

When asked what advice they would like to provide to other women entrepreneurs, suggestions included delegating tasks, seeking help when needed, and focusing on aspects aligning with strengths and interests. They advise trusting others, working with integrity, and addressing issues like cyberbullying or harassment with patience. Nearly all of them emphasize the importance of balancing personal and professional life, avoiding combining professional and personal stress, and maintaining consistency in business.

"In this business, we need to balance every side, and for that, our physical condition should be in great shape as well as our mental condition. Mental health depends a lot upon physical health." (IDI 8)

Lack of Reliability in F-commerce Raising Mental Issues

Interviewees stated that without additional effort, authentic products became their means of communicating with clients and business partners about issues of reliability and trust. Some participants suggested that other strategies to foster loyalty and dependability include prioritizing customers' needs, answering their questions, apologizing for past transgressions, and working hard. Moreover, they said, receiving positive feedback from clients has a great effect on their mental well-being.

"I believe trust is built in our relationship through the quality of my products. When I consistently deliver what customers want, it strengthens their trust in me. Therefore, being able to give assurance about

something like that makes them happy, and their positive feedback makes me feel good." (IDI 11)

Many respondents view online business dealings as untrustworthy and a source of stress, anxiety, uncertainty, and conflict. One person asserted that social media is a platform where businesses come and go, while other people mentioned issues with expenses, a lack of time for education, a lack of capital, and the challenge of maintaining close relationships. Surprisingly, five respondents never experienced mental health issues in this context.

"Facebook is a temporary medium. We never know when it will stop. So, it's a bit of a worry. As a result, in every deal, I stay uncertain till the full payment comes into my hand, as anything can happen anytime on this platform." (IDI 5)

Gender Roles in F-commerce and Mental Wellness
The theme focuses on whether the respondents have ever experienced harassment or discrimination at work, how they handled it, and what kinds of mental health issues resulted from it.

None of the respondents reported experiencing discrimination at work. However, seven interviewees did report experiencing harassment from consumers and product dealers. For instance, sometimes after paying in full, the seller does not deliver the desired goods or the customer orders something but then refuses to accept it.

"Yes, I have experienced harassment, and it has affected my mental health. This is how I dealt with it: first I thought starting a business would have problems, and all problems have solutions. If there is any problem, I try to solve it first and get the solution. In my opinion, everyone should try to find a solution first when facing any harassment or problem so that it does not affect their mental health." (IDI 3)

The majority of respondents believe that women entrepreneurs experience more significant mental health issues than men. Nine out of fifteen respondents believe that they are more vulnerable than their male competitors since women tend to trust others more; they are more likely to fall victim to fraud. In addition, they face harassment and physical abuse. They have to face more workload than their male counterparts as they have obligations to perform family responsibilities, and there are restrictions on traveling anywhere due to safety issues.

"Due to various restrictions and physical problems, girls cannot go to many places at certain times of the month, which is a difficult challenge for them." (IDI 10)

Particular mental health issues that affect female F-commerce entrepreneurs include sadness, social isolation, low self-esteem, anxiety about failing, panic attacks, and emotions of dominance. Six of the participants said they had never faced any specific mental health difficulties, whereas nine said they had dealt with the problems.

"Sometimes, the online nature of F-commerce leads to feelings of isolation and disconnection from people. Additionally, it limits opportunities for networking and mentorship." (IDI 9)

Family's Impact on Entrepreneurship and Mental Health
This theme illustrates the level of support that the participants' families provide throughout their journey as F-commerce entrepreneurs, as well as explores how they manage the strain and stress of tackling work and family obligations at the same time.

Ten out of fifteen respondents stated that their families had been completely supportive since the start of their employment. Typically, financial support came mostly from their parents or husbands. Family members support them in various ways; sometimes their siblings help them with arranging and decorating the Facebook page, and often their father, husband, or brother takes on the delivery driver role. These kinds of support keep female entrepreneurs mentally fit. As long as the business was self-funded, a few families remained neutral and did not support or oppose it, while others were not initially pleased with the idea until it began to turn a profit.

"Having my family's support is essential to keeping my mental health in check. First, a lot of people questioned why this was required. In this workplace, a lot of working women are subjected to pressure, and there is no fixed salary. But my family encouraged me, and provided the needed money. They gave me enough financial support." (IDI 4)

Most entrepreneurs find it difficult to manage the stress and pressure of entrepreneurship as they have to fulfill family responsibilities. Some managed to balance both with the help of their families, while others relied on setting and following a timetable.

"Firstly, I prioritize time for work and dedicate time to my family after work. With constant support from family, an entrepreneur can navigate challenges without feeling pressured. Additionally, I can handle everything with just my smartphone, so it's not as difficult now." (IDI 1)

Also, the responsibility of both family and work made the participants somehow manage the whole thing even when things were difficult.

"I just took command. As the eldest kid in my family with numerous obligations, managing everything, including stress and pressure, became second nature." (IDI 8)

Financial Difficulties' Effect on Mental Health
The theme highlights the impact of financial difficulties on participants' mental well-being during the startup and operation of a business and explores how they handle stress and strain regarding it.

Financial challenges critically impact entrepreneurs' mental well-being during business start-ups and operations. Six of the fifteen respondents faced mental health issues,

primarily due to encountering financial difficulties while launching or running their businesses. Challenges included fraud in raw material purchases, market instability, shifting trends, and intense competition in F-commerce, which hindered career growth. On the contrary, six interviewees said that because of their family support and their savings, they have never experienced financial difficulties.

"I often fall into financial crises, and it creates pressure. I felt that with more capital or investment in my business, I could have sold more products. There is so much demand, but if I could have someone with me as a partner, I could have more production. So, it must have been a bad feeling for me from time to time." (IDI 11)

In order to overcome the stress and strain caused by the financial crisis, the majority of respondents obtained loans and aid from reliable sources, such as friends, family, and business associates. Entrepreneurs' positive outlook in critical situations also plays a significant role in this support. One participant who experienced stress-related mental health issues was able to solve it by developing a budget, highlighting the importance of financial planning in stress management.

"Every business has its downs. I do not let myself sink into any financial stress or pressure. I tried all the best possible ways to overcome every problem." (IDI 2)

Figure 2: Word cloud of the major cited themes using NVivo-14

Discussion

Several studies have examined the challenges faced by women entrepreneurs and how they overcome them. While these studies provide important insights, they often overlook the mental health challenges faced by female entrepreneurs, particularly those involved in F-commerce. This study closed that gap by investigating the mental health issues faced by female F-commerce entrepreneurs in Bangladesh, focusing on themes such as cyberbullying, lack of reliability in business, gender roles, family pressures, and financial difficulties. The findings revealed critical cause-effect relationships that contribute to understanding the mental health dynamics within this entrepreneurial context.

Cyberbullying was found to be a major source of stress for female entrepreneurs. It took forms such as abusive comments and unwanted messages, causing anxiety, social withdrawal, and a loss of confidence in using online platforms. While coping strategies like blocking, reporting, and seeking support were common, they often didn't address the root of the problem. These findings align with Frost and Rickwood's (2017) study on the negative mental health effects of social media but highlight how entrepreneurs are uniquely affected because their livelihoods depend on digital platforms.

Another key stressor was uncertainty in online transactions, such as fraud and disputes with customers. These issues led to anxiety and a loss of, which are crucial for building strong business relationships. Unlike studies like Parvin *et al.* (2012) that focus on structural barriers, this research highlights how these challenges take a psychological toll on female entrepreneurs. Building trust through professionalism and transparency was identified as essential.

Gender roles also added to mental health challenges. Female entrepreneurs often had to balance business and domestic responsibilities, which led to exhaustion and feelings of isolation. Cultural norms limiting women's freedom and reinforcing societal expectations made these issues worse. However, family support played a key role in reducing stress and helping them maintain their well-being. These findings align with the observations of Dy *et al.* (2016), who highlighted that digital entrepreneurship often reflects the gender inequalities present in offline settings. While earlier studies like Basak (2018) and Gardašević *et al.* (2022) have explored the challenges of F-commerce, they did not focus on its mental health impacts. This study addresses that gap by examining how digital entrepreneurship affects mental health, providing valuable insights for academics and policymakers.

Economic instability was another significant issue. Factors like market fluctuations, fraud, and a lack of capital caused stress and insecurity, making it hard to grow their businesses. Strategies such as financial planning, savings, and family support helped to some extent. These findings build on the research conducted by Jahan (2017), showing how resource limitations directly impact mental health.

Using intersectionality theory, this study shows how the combined effects of gender and entrepreneurship, along with the unique challenges of F-commerce, shape the mental health of female entrepreneurs. For example, societal expectations and the pressures of running a digital business create challenges that require targeted solutions. Unlike studies that look at these issues separately, this research highlights how structural, cultural, and personal factors are interconnected.

Policy Implications

Based on the findings of this study, several policy recommendations are suggested to address the mental health challenges faced by female F-commerce entrepreneurs. These solutions target issues such as cyberbullying, financial struggles, work-life balance, and gender-specific challenges.

(i) Affordable Mental Health Services

The study shows that cyberbullying, unreliable transactions, and financial stress greatly affect mental health. To help, partnerships with local healthcare providers could make counseling, therapy, and online mental health support affordable and accessible for women

entrepreneurs. These services would help them manage stress and anxiety effectively.

(ii) Mental Health Awareness Campaigns

Many entrepreneurs lack awareness about mental health or face stigma when discussing it. Campaigns, workshops, and training programs can educate them on how to identify and manage stress, anxiety, and burnout. Creating a supportive community where mental health is openly discussed would also help reduce stigma.

(iii) Work-Life Balance Initiatives

Balancing business and family responsibilities is a major challenge for female entrepreneurs. Programs to improve work-life balance could include time management tools, flexible schedules, and stress-reduction techniques. Families can also be trained to better support women in handling their dual roles.

(iv) Gender-Inclusive Policies

Gender-based barriers, like stereotypes and limited independence, were highlighted in the findings. Policies should work to reduce these biases by ensuring equal opportunities and legal protections against harassment. Public awareness campaigns can also challenge negative stereotypes about women entrepreneurs.

(v) Financial Support Mechanisms

Financial struggles, such as limited capital and market instability, are common stressors. To address this, governments and organizations can offer microfinance options, low-interest loans, and grants specifically for women entrepreneurs. Programs on financial literacy and mentoring can help women improve their budgeting and decision-making skills.

(vi) Mentorship and Networking Opportunities

Entrepreneurs often mentioned the need for peer support and guidance. Mentorship programs and networking events can connect experienced entrepreneurs with beginners in the F-commerce sector. Peer support groups can provide both emotional encouragement and professional advice, building a strong, collaborative community.

These recommendations directly address the challenges identified in the study. By adopting these measures, stakeholders can create a more supportive and inclusive environment for women entrepreneurs, helping them thrive in F-commerce.

Strengths and Limitations

One of the key strengths and most appealing aspects of this study is its focus on a concept that has not yet been explored in the context of Bangladesh. Its conclusions make a significant contribution to our knowledge of the mental health issues that women entrepreneurs in the F-commerce sector face. Because of the study's qualitative methodology, it is possible to comprehend these women's

experiences and the factors that lead to their mental health issues on a deeper level. The findings of this study are significant for a broad audience as they can guide the development of programs and policies to support the mental health of women business owners in the F-Commerce industry. This underscores the research's practical implications and potential to effect positive change in the industry.

However, it is also essential to acknowledge this study's limitations. The absence of a comparison group hinders a comprehensive understanding of the unique mental health issues faced by women entrepreneurs. These limitations underscore the need for further research to build upon these initial findings. Moreover, this study does not cover a thorough analysis of the coping mechanisms employed by women entrepreneurs to address their mental health concerns. Most significantly, the study detected the mental health issues that only F-commerce-related women entrepreneurs face.

Conclusion

Women's entrepreneurship is becoming extremely popular because it can lead to independence and employment. Women are increasingly utilizing F-commerce to enhance their businesses by taking advantage of its low investment and remote work capabilities. Therefore, addressing these mental health challenges and providing various opportunities for mental well-being is crucial for women's success in this field. Through this research, we will gain knowledge of a matter mainly neglected in this country: mental health. This research explores mental health in the country, focusing on entrepreneurship risks, family roles, gender stereotypes, online bullying, and harassment. It found that cyberbullying, uncertain finances, and pressures that are unique to women are some of the biggest mental health problems causing anxiety, depression, and social isolation. Understanding this can advance entrepreneurship, F-commerce, and mental health and help women entrepreneurs overcome obstacles while improving economic prospects and developing in the sector.

Conflict of Interest

Regarding this study, the researchers affirm that there is no conflict of interest.

Credit Author Statement

Priyanka Ghosh: Investigation, Data collection, Analysis, Writing – the first draft; Md. Mahdi-Al-Muhtasim Nibir: Supervision, Conceptualization, Investigation, Writing – final draft, reviewing and editing; Tanjid Rahman: Data analysis, Formatting

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