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Abstract

Sexual harassment is a pervasive form of violence against women (VAW) worldwide. In Egypt, women frequently encounter harassment in public spaces such as streets and public transportation. Despite its prevalence, harassment remains an underexplored barrier to women's access to economic opportunities. This study examines the impact of public space harassment on female labor force participation (FLFP) in Egypt, drawing on data from the Egypt Economic Cost of Gender-Based Violence Survey (ECGBVS) and the 2018 wave of the Egyptian Labor Market Panel Survey (ELMPS). Using discrete choice models, the analysis reveals that the effects of harassment vary significantly according to women's characteristics, particularly marital status. The findings indicate that married women, those aged 25 to 44, and urban residents are disproportionately negatively affected, with higher likelihoods of labor market withdrawal following harassment. The robustness of these results is confirmed through Two-Stage Least Squares (2SLS) and reduced-form regressions. Furthermore, mediation analysis highlights the critical role of husbands' controlling behavior in shaping women's responses to harassment. The paper concludes with a set of policy recommendations aimed at addressing these gendered barriers to labor force participation.

Keywords: violence against women, harassment, transportation, female labor force participation, Egypt.
JEL Classifications: J16, J22, R41

ملخص

التحرش الجنسي هو شكل منتشر من أشكال العنف ضد المرأة في جميع أنحاء العالم. وفي مصر، تتعرض النساء للتحرش بشكل متكرر في الأماكن العامة مثل الشوارع ووسائل النقل العام. وعلى الرغم من انتشاره، لا يزال التحرش يمثل عائقًا غير مستكشف أمام وصول المرأة إلى الفرص الاقتصادية. تبحث هذه الدراسة في تأثير التحرش في الأماكن العامة على مشاركة القوى العاملة النسائية في مصر، بالاعتماد على بيانات من مسح التكلفة الاقتصادية للعنف القائم على النوع الاجتماعي في مصر (ECGBVS) والمسح اللتبعي لسوثق العمل في مصر لعام 2018 (ELMPS). باستخدام نماذج الاختيار المنفصل، يكشف التحليل أن آثار التحرش تختلف اختلافًا كبيرًا وفقًا لخصائص المرأة، وخاصة الحالة الاجتماعية. تشير النتائج إلى أن النساء المتزوجات، واللاتي تتراوح أعمارهن بين 25 و44 عامًا، وسكان المناطق الحضرية يتأثرن سلبًا بشكل غير متناسب، مع ارتفاع احتمالات الانسحاب من سوق العمل بعد التحرش. يتم تأكيد قوة هذه النتائج من خلال المربعات الصغرى ثنائية المرحلتين (2SLS) والانحدارات ذات الشكل المخفض. علاوةً على ذلك، يُسلّط تحليل الوساطة الضوء على الدور الحاسم لسلوك الأزواج المسيطر في تشكيل ردود فعل النساء تجاه التحرش. وتُختتم الورقة بمجموعة من التوصيات السياسية الهادفة إلى معالجة هذه العوائق النوعية التي تحول دون مشاركة المرأة في سوق العمل.

1. Introduction

Sexual harassment is one of the most pervasive forms of violence against women (VAW) globally. Like other manifestations of VAW, it constitutes a violation of women's rights and presents a significant barrier to their full participation in economic and social life. It also has far-reaching consequences for women's mental and physical health, contributing to substantial costs, including healthcare expenses, legal fees, and productivity losses, as emphasized by UN Women. Moreover, sexual harassment heightens women's fear in public spaces such as streets, public transportation, schools, universities, and hospitals, thereby discouraging their engagement in public and economic life and limiting their access to essential opportunities (UN Women, 2018).

However, despite its widespread impact, measuring violence in public spaces remains a major challenge in literature. These difficulties stem primarily from the lack of a unified definition of such violence across cities and countries. In addition, cultural norms and stigma often discourage women from reporting experiences of harassment and violence (Felson & Reinhard, 2023; Useche et al., 2024). As a result, these challenges have contributed to a gap in literature, limiting the ability to fully estimate the negative effects of public space violence on women's well-being.

As in many other countries, VAW remained a largely neglected issue in Egypt until the 1990s. Addressing VAW was often perceived as a challenge to the prevailing social norms and values. However, during the early 1990s, Egypt began preparing for the International Conference on Population and Development (Cairo, 1994) and the Fourth World Conference on Women (Beijing, 1995), which triggered growing academic and policy interest in the subject (Adra et al., 2020). It was during this period that discussions on VAW started to emerge more visibly within academic circles, and subsequent years witnessed a gradual increase in efforts to estimate its prevalence rates.

Despite these developments, data and research on violence in public spaces, and sexual harassment in particular, remain significantly underrepresented in the Egyptian VAW literature. Only a limited number of studies have attempted to provide rough estimates of sexual harassment rates. For instance, Roushdy and Sieverding (2015) and Hassan (2020) reported prevalence rates of approximately 40%, although these figures are widely believed to be underestimated due to underreporting. The challenge of data collection in this area is exacerbated by the fact that sexual harassment is traditionally considered a taboo subject in Egyptian society (AbdelFattah et al., 2022; Hassan et al., 2023).

Recognizing the potential economic consequences of different forms of VAW and responding to the missing data challenge, the Central Agency for Public Mobilization and Statistics (CAPMAS), in collaboration with the National Council for Women (NCW) and the United Nations Population Fund (UNFPA), undertook efforts in 2015 to collect micro-level data on VAW. This initiative

aimed to assess the incidence of various forms of VAW, their impact on women's well-being, and their associated economic costs. The resulting report revealed that 7.8 million Egyptian women experience violence annually, whether perpetrated by intimate partners, family members, or strangers. The economic costs of such violence were estimated at 6 million EGP[5] (UNFPA, NCW, and CAPMAS, 2015).

As per the published report at the launch of the dataset, it was marked that negative consequences on women's economic well-being are huge. Women, who are victims of violence, find it difficult to join the labor market and to sustain a paid job. Focusing on the labor market in Egypt, Female labor force participation (FLFP) rates have remained strikingly low over the past decades. According to CAPMAS, FLFP in Egypt was approximately 15% in 2022, significantly below the global average of 53%, the middle-income country average of 50%, and even the MENA regional average of 20% as per the World Development Indicators. These persistently low rates, especially compared to similar groups of countries, have consistently raised questions about the underlying determinants of FLFP in Egypt. Historical data from the World Bank indicates that since 1991, FLFP in Egypt has never surpassed 25%, highlighting a structural barrier to women's participation in the labor market over the years.

The literature on female labor market outcomes is extensive, with numerous studies attempting to explain the persistently low labor force participation rates of women relative to men. Traditionally, this body of work has examined both demand-side and supply-side determinants. On the demand side, FLFP in Egypt has been significantly affected by the gradual contraction of the public sector, historically a key employer of women. At the same time, the private sector has failed to absorb the growing female labor supply, due to both limited expansion and a preference for male workers (Constant et al., 2020). As Nazier (2020) notes, promoting FLFP in the Egyptian private sector requires a comprehensive set of policy interventions.

On the supply side, demographic factors such as age, education, marital status, and region of residence play a central role in shaping women's labor market decisions. Among these, education stands out as a primary driver of increased FLFP, a trend that aligns with patterns observed globally. However, despite considerable gains in women's educational attainment in Egypt, these improvements have not translated into proportional increases in FLFP. This disconnect, commonly referred to as the "MENA Paradox", is widely observed across Arab countries, including Egypt (Assaad et al., 2020). These patterns suggest that beyond conventional supply and demand factors, additional barriers, possibly institutional, cultural, or related to safety and mobility, must be considered to fully understand and address the constraints on women's economic engagement.

[5] These costs are calculated based on health expenditures, legal fees, lost wages, and other associated expenses incurred by victims of violence.

A critical factor influencing women's labor force participation is the impact of gender norms on societal roles. Gender norms encompass beliefs about gender roles, power dynamics between men and women, and the expected behavior of each gender (UNICEF & UNFPA, 2022). In Egyptian society, deeply ingrained cultural norms often discourage women from engaging in the labor market (Nazier and Ramadan, 2016). When societal expectations confine women's roles to marriage and caregiving, many women opt to withdraw from the workforce (Hendy, 2015; UN Women, and ERF, 2020; Atallah and Hesham, 2024).

The influence of gender norms extends well beyond shaping traditional gender roles; it is also closely intertwined with the prevalence of VAW, particularly in public spaces. These norms often act as a barrier to reporting incidents of harassment, thereby perpetuating the issue (Bergenfeld et al., 2021). In contexts such as Egypt, where gender norms are deeply rooted, the potential impact of sexual harassment on FLFP warrants urgent and focused attention. Despite its increasing recognition on the national policy agenda, economic research examining the effects of harassment on women's labor market outcomes remains limited.

This gap underscores the need for a deeper understanding of how public space harassment functions as a constraint on women's economic participation. One of the key reasons for this lack of research is the scarcity of reliable data on the prevalence of sexual harassment across various public domains, including streets, public transportation, workplaces, and educational institutions. Addressing this data gap is essential for developing informed policy responses that support women's safety and enhance their access to economic opportunities. Consequently, the objective of this study is to empirically investigate how harassment in public spaces represents a barrier to women's participation in the labor market. The remainder of this paper is structured as follows: Section 2 reviews the existing literature on the relationship between harassment and women's labor market outcomes and the Egyptian context, section 3 outlines the data and methodology used in the analysis, Section 4 presents and discusses the empirical findings, Section 5 provides robustness checks for the results, and Section 6 concludes with policy recommendations.

2. Literature review

It has become increasingly clear that gender gaps in labor force participation are more complex than the simple explanations provided in traditional literature. While much of the existing research has focused on supply-side barriers for women and demand-side discrimination, it has often overlooked the importance of contextual factors. Halim et al. (2023) emphasize that contextual factors such as violence against women and harassment impose a significant toll on women's participation in economic life. However, they argue that the body of literature examining this issue is still in its early stages and requires further exploration. In line with their observations, this section demonstrates that research on the link between violence and women's employment

outcomes remains limited across various economies, highlighting a gap in the current understanding of how such factors influence women's economic opportunities and participation.

2.1. Conceptual framework

The relationship between VAW and FLFP is theoretically complex and has not been explicitly addressed in mainstream economic theories. Traditional economic models largely overlook community-level factors—such as exposure to violence—that may shape women's labor market decisions. Among the most prominent theories explaining labor force participation are the work-leisure choice theory, human capital theory, and modernization theory.

First, the work-leisure choice theory, a fundamental neo-classical microeconomic framework, explains labor supply decisions based on utility maximization. According to this theory, individuals are rational agents who allocate their time between work and leisure in a way that maximizes their overall utility (Mincer, 1962; Hosney, 2016; Abraham et al., 2017). Second, human capital theory posits that labor market participation is primarily determined by an individual's stock of human capital—such as education and skills—which enhances productivity and earning potential (Grossman, 2000). Third, modernization theory suggests that economic development fosters FLFP by creating more job opportunities, diversifying employment sectors, and challenging traditional gender norms, thereby reducing gender inequality (Abraham et al., 2017).

Despite the significance of these theories, they fail to account for psychological and community-level factors, including the effects of violence, which may disproportionately influence women's employment decisions. The aforementioned economic theories can, however, be extended to incorporate the effects of violence on FLFP.

From the perspective of the work-leisure choice theory, women are rational agents who conduct a cost-benefit analysis when making labor market decisions. Introducing the dimension of violence into this framework reveals that security concerns significantly shape women's economic choices. Research suggests that women's fear of potential victimization in public spaces discourages them from pursuing employment opportunities, as they seek to minimize interactions with potential harassers. Siddique (2018), drawing on Becker and Rubenstein's (2011) framework, demonstrated that women living in unsafe neighborhoods experience heightened fear of victimization. In such cases, even a low probability of violence can have a profound impact on their decision-making. According to Becker and Rubenstein's model, rational agents may forgo consumption of potentially hazardous goods if the expected cost outweighs the perceived benefit. Applying this logic to women's employment choices, the potential risk of harassment or violence in public spaces may overshadow the economic benefits of joining the labor force. Consequently, employment is

perceived as a "hazardous good" that many women choose to forgo to safeguard their personal security.

Furthermore, the fear of victimization is not necessarily correlated with actual harassment rates. Rather, media portrayals of violence against women tend to amplify perceived risks, even in regions with relatively low incidence rates (Siddique, 2022). This effect is particularly pronounced in societies with traditional gender norms that place significant emphasis on women's purity. In such communities, victims of harassment are often blamed rather than supported, further discouraging women from exposing themselves to potential risks (Graglia, 2016; Pimkina and De la Flor, 2020; Field and Vyborny, 2022).

Human capital theory also offers insights into how violence impacts FLFP. Exposure to violence—both physical and psychological—can have detrimental effects on women's health, thereby limiting their ability to acquire education and skills, which are essential for labor market participation (Nesongano et al., 2022; Kearns and DiRienzo, 2024). Consequently, violence not only deters immediate labor market entry but also impairs women's long-term economic prospects by restricting their accumulation of human capital.

Similarly, modernization theory posits that economic development fosters FLFP by advancing gender equality. However, when violence against women persists, it counteracts these gains by undermining women's empowerment and economic independence. In this way, violence functions as a structural barrier that inhibits women's ability to fully participate in the labor market, despite broader economic progress.

Incorporating the dimension of violence into labor force participation research necessitates an examination of transportation security. Transportation infrastructure is a critical determinant of women's mobility and, consequently, their ability to engage in economic activities. The gendered perspective on transportation highlights the asymmetrical impact of mobility constraints on men and women. Bellmann et al. (2020) emphasize that women's transportation needs differ from men's, particularly regarding safety, accessibility, and convenience.

Much of the literature on gender and transportation has focused on women's time poverty, emphasizing the need for efficient transportation systems that reduce commuting time to help women balance work and caregiving responsibilities (Madden, 1980; Ehab, 2018; Jacob et al., 2019). However, the issue of transportation security remains largely overlooked. Using Becker and Rubenstein's (2011) framework, it becomes evident that women who experience or fear violence in public transportation are more likely to be discouraged from entering the labor market. Without adequate and secure transportation infrastructure, women may lose access to economic opportunities, thereby exacerbating gender disparities in employment (Lei et al., 2019; Nahar and Cronley, 2021; Tiznado-Aitken et al., 2024).

The link between violence against women and FLFP has been largely absent from traditional economic literature. However, classical labor market theories—when adapted to account for security concerns—can help explain how gender-based violence in public spaces discourages women from participating in the labor force. Moreover, the role of transportation security must be recognized as a crucial factor influencing women's mobility and economic choices.

2.2. Empirical evidence

Empirical research on the relationship between violence in public spaces and women's labor force participation remains limited. Evidence from the United States suggests that violence in public spaces, particularly sexual abuse, has a significant negative impact on women's well-being. Loya (2015) examined this issue through 27 semi-structured interviews with nine rape survivors and 18 rape crisis service providers identified through the Department of Public Health. Her findings highlight that sexual violence disrupts women's behavior and employment decisions due to four main factors: time off, decreased performance, job loss, and inability to work. Victims of sexual abuse often require time to recover from such traumatic experiences, which negatively affects their ability to work and frequently necessitates taking time off. Additionally, they must attend legal and medical appointments that cannot be missed. These disruptions reduce victims' income and earning potential, significantly affecting their economic well-being in the aftermath of these incidents.

Furthermore, Kearns and DiRienzo (2024) found that the effects of sexual violence on women's education and labor market participation vary depending on the age at which the violence was first experienced. Using data from the National Longitudinal Study of Adolescent Health in the United States, they found that experiencing sexual violence in childhood reduces the likelihood of enrollment in higher education by 50%, while experiencing it during adolescence reduces this probability by 40%. Additionally, experiencing sexual violence in adolescence increases the likelihood of engagement in low-skilled occupations. However, childhood experiences of sexual violence did not have a statistically significant impact on women's employment.

In the context of developing countries, several studies have investigated the relationship between sexual violence and FLFP in India. Despite increasing levels of education among women, female labor force participation rates have not risen correspondingly, a pattern also observed in Egypt. This discrepancy has prompted investigations into other factors that may impede women's labor force participation. For example, Chakraborty et al. (2018), using data from the Indian Human Development Survey (2004/2005), found that women are more likely to work closer to home when the risk of sexual harassment is high. This effect is particularly pronounced in communities where women face greater stigma after experiencing harassment.

Beyond the direct risk of victimization, societal norms and perceptions also shape women's labor market behavior. Siddique (2018) examined the impact of media-reported sexual and physical harassment on women's labor supply using data from the National Sample Survey in India. The study found a significant negative effect on women's labor force participation, even after controlling for variables such as age, education, marital status, and household characteristics. Mishra et al. (2018) explored the differential impact of crime on men's and women's labor force participation using census data from 2001 to 2011. Their findings indicate that an increase in crime rates at the district level significantly reduces female labor force participation while increasing male labor force participation. When focusing specifically on crimes against women, the results remained consistent. These findings were robust across various econometric methodologies, including pooled OLS, static panel, and dynamic panel estimation. Finally, Chakraborty and Lohawala (2021) merged National Sample Survey data (2004–2011) with crime reports from the National Crime Report Bureau. Using an instrumental variable (IV) approach, where they instrumented crimes against women with state laws on the minimum age for alcohol consumption, they found that an increase of one standard deviation in sexual crimes per 1,000 women reduces female employment by 9.4%.

In the African context, Nesongano et al. (2022) examined the impact of sexual violence on FLFP among 301 women in Zimbabwe. Using logistic regression, they found that the effects of sexual violence differ in the short and long term. Specifically, lifetime experiences of sexual violence significantly reduce FLFP, whereas sexual violence experienced in the past 12 months is associated with an increase in FLFP. This short-term increase may reflect a backlash effect, as women attempt to assert their independence, while the long-term impact appears to stem from negative effects on mental and physical health. Expanding on this, Kikillus and Kollamparambil (2025) investigated the effects of sex crimes on FLFP in South Africa using data from the National Income Dynamics Study for 2012 and 2017. Applying a probit regression and confirming their findings with an IV methodology, they found that sex crimes at the district level significantly decrease FLFP.

A growing body of experimental research highlights the challenges women face in using public transportation due to violence and harassment. These studies explore factors contributing to harassment, policy recommendations to reduce its prevalence, and its impact on women's labor force participation. In Mexico City, Graglia (2016) found that men often do not perceive violence against women in public spaces as a societal issue, with some even justifying it due to traditional gender roles that confine women to domestic spheres. Consequently, women develop coping mechanisms to avoid victimization. Similarly, in Ethiopia, Kacharo et al. (2022) identified factors influencing harassment in public transportation, finding that younger, single women are more likely to experience harassment, particularly when commuting at night. The study suggests that policies such as increased surveillance, women-only vehicles, and improved lighting in public

spaces could enhance women's use of public transportation and, by extension, their participation in the labor force.

Several studies provide evidence that improvements in transportation infrastructure can enhance women's mobility and employment prospects. In Peru, Martinez et al. (2019) evaluated a metro infrastructure project launched in 2010 using a difference-in-difference approach with data from the Peruvian National Household Survey. Their results indicate that better transportation access increased women's employment, though the effect was not significant for men. Similarly, Lei et al. (2019) used a fixed-effects analysis with data from two waves of the Indian Human Development Survey and found that public transportation improvements significantly increased labor force participation, benefiting women more than men. Finally, in Pakistan, Field and Vyborny (2022) conducted a randomized controlled trial (RCT) to examine the impact of transportation availability on labor market choices. Their findings indicate that secure transportation options increase the likelihood of women accepting jobs, even if this involves a wage deduction for transportation costs. By contrast, men were less likely to rely on public transportation, preferring private transport even at a financial cost. These findings suggest that transportation security is a crucial factor influencing women's labor market decisions, whereas men's choices are less affected by transportation availability.

Overall, the literature underscores the significant impact of violence in public spaces, particularly sexual violence, on women's labor force participation. The evidence indicates that sexual violence not only disrupts women's employment decisions but also limits their educational and economic opportunities. Additionally, improvements in transportation security and infrastructure can mitigate some of these negative effects, facilitating greater female labor force participation.

2.3. Egyptian context

Despite progress in various MENA countries, including Egypt, in enhancing legal protections for women's physical integrity, violence in public spaces persists. And, it remains a significant barrier to women's full participation in economic and social life in the MENA region. Notably, incidents of such violence have increased following the political instabilities of 2011 (OECD, 2014). Given the region's persistently low female labor force participation rates, academic research has sought to identify potential causes behind this trend. Recently, growing attention has been directed toward examining the relationship between different forms of violence against women and their participation in the labor market. Dione et al. (2025), in a World Bank blog article, emphasized that violence against women remains a critical challenge in MENA countries. They advocated for stronger legal frameworks against gender-based violence and the creation of safer public spaces, workplaces, and homes. However, despite the significance of this research question, empirical evidence on this issue in MENA countries, including Egypt, is scarce.

In Egypt, we observe a disconnect between governmental efforts, the legal framework, and societal perceptions regarding women's safety in Egypt. According to the 2024 Women, Business, and the Law (WBL) Index, Egypt scores 50 out of 100 in terms of women's safety. Among the notable advancements in this area is the introduction of a specific law addressing harassment and violence in public spaces. On June 4, 2014, Egypt amended its legislation to include the first anti-sexual harassment law in its modern history (UNFPA Egypt). This law criminalizes verbal, physical, phone, and online sexual harassment, imposing prison sentences ranging from six months to five years, along with fines of up to 50,000 Egyptian pounds. In the same year, a specialized unit was established under the National Council for Women to investigate harassment incidents. This unit initially comprised ten police officers, including four women. However, due to its limited size, concerns remain regarding its capacity to effectively address the issue (Marroushi, 2015). Subsequently, 23 anti-harassment units were established across various public universities, with additional plans to introduce safe women's clinics in university hospitals and specialized gender-based violence (GBV) units in police stations. While these efforts represent progress in combating violence against women, significant challenges persist. The 2024 WBL Index highlights the absence of supportive legal frameworks for many of these protective laws, indicating substantial room for improvement in ensuring women's safety and legal protection in Egypt.

From a cultural perspective, violence against women is often deeply rooted in traditional gender norms that reinforce male dominance. Since such violence arises from structural power imbalances, the societal privileges granted to men often embolden them to commit acts of violence against women. Alarmingly, widespread societal attitudes in Egypt continue to blame women for harassment and violence in public spaces, with some even suggesting that women welcome such attention. According to the 2016 International Men and Gender Equality Survey (IMAGES) conducted by UN Women, 64% of surveyed men admitted to having perpetrated harassment at least once in their lifetime. Additionally, 74% of men believed that women who dress "provocatively" are inviting harassment, while 40% felt the same about women who are in public spaces at night. Even more concerning, these views were shared by an even higher percentage of women: 84% agreed with the former statement, and 43% with the latter. Furthermore, 43% of men believed that women actually enjoy being harassed. These deeply ingrained perceptions help explain why the concepts of "harassment," "violence in public spaces," and "sexual abuse" remain contested in Egyptian discourse. While women frequently share their experiences informally, systematic data collection on harassment incidents remains limited (Abul Komsan, 2009). Given the longstanding taboo surrounding this issue, empirical research on the impact of violence—particularly in public spaces—remains scarce.

A limited number of studies have highlighted the negative effects of harassment and violence on women's well-being. For instance, Arafa et al. (2020), in a study of women residing in two Egyptian governorates, found that sexual harassment has adverse effects on women's mental health, leading to distress and anxiety. When considering economic consequences, Constant et al.

(2020) underscored that mobility constraints significantly shape women's economic decisions in Egypt. Their research further demonstrated that harassment in public spaces disproportionately affects women compared to men, further restricting their mobility. Beyond direct effects, societal norms and perceptions regarding violence against women also play a crucial role. According to Zeitoun et al. (2023), 76% of men and 64% of women in Egypt believe that women's employment exposes them to harassment. If working is perceived as a risk to women's security, they may be discouraged from participating in the labor force. Additionally, men, who often perceive themselves as responsible for women's protection, may intervene to prevent female family members from working under the justification that public spaces are unsafe for women.

In summary, existing research suggests that violence in public spaces significantly hinders women's labor market outcomes. However, studies on FLFP in Egypt have largely overlooked this dimension. Even when violence has been examined, the primary focus has been on intimate partner violence, as highlighted by Giovanis and Ozdamar (2022). This gap underscores the need to incorporate public space violence as a critical factor in understanding women's labor market participation.

One major challenge in addressing this gap is the lack of reliable data on different types of violence. As Abul Komsan (2009) notes, several factors hinder data collection. First, achieving consensus on a definition of harassment is difficult, as it encompasses various forms, including verbal and physical abuse. Second, societal norms often shift the blame for harassment onto women rather than the perpetrators, discouraging victims from reporting incidents due to concerns about inadequate support. This phenomenon, widely recognized in the violence literature, is known as "under-reporting."

Stewart et al. (2024) identify key reasons for the under-reporting of sexual violence by women, highlighting three primary factors: self-blame, the traumatizing nature of reporting, and the absence of evidence. Many women struggle to report harassment or assault due to internalized self-blame, often reinforced by societal attitudes that defend perpetrators while stigmatizing victims. Reporting an incident can also be a highly distressing experience, requiring women to relive the trauma. Furthermore, the inability to provide concrete evidence often deters victims from pursuing justice. However, in recent years, social media has emerged as a powerful tool for women to advocate for their rights and seek protection from harassment. Various social media campaigns have encouraged women to report harassment and cooperate with law enforcement authorities to ensure justice (Marzouk and Vanderveen, 2021).

Given the context in Egypt discussed in this section, this paper focuses on violence in public spaces and its impact on FLFP. As highlighted, this form of violence represents a significant barrier to women's economic engagement. However, it remains largely overlooked, not only in academic research but also in social discourse, where it is often perceived as the woman's fault.

Consequently, this paper makes three key contributions. First, it is among the first studies to empirically examine the effects of violence in public spaces on FLFP using a nationally representative dataset, as detailed in the following section. Second, it expands the existing FLFP literature in Egypt by introducing a new perspective that may help explain persistently low participation rates. Third, it integrates this research into the transportation literature, highlighting the intersection between mobility, security concerns, and women's economic participation.

3. Data and methodology

3.1. Data

This analysis combines two primary sources of secondary data. To examine violence in public spaces, we use data from the Egypt Economic Cost of Gender-Based Violence Survey (ECGBVS), conducted in 2015 through a joint effort by the Central Agency for Public Mobilization and Statistics (CAPMAS), the National Council for Women (NCW), and the United Nations Population Fund (UNFPA). The survey aimed to estimate the economic costs associated with VAW in Egypt. Micro-level data were collected to measure the incidence of various forms of VAW, their impact on women's well-being, and the resulting economic consequences. Although fieldwork was carried out between April and June 2015, the full dataset was only made publicly available by the Economic Research Forum (ERF) in 2022.

The ECGBVS includes responses from 21,448 households and 20,157 eligible women aged 18 to 64. Data collection followed a two-stage sampling design: in the first stage, 1,000 enumeration areas were randomly selected across all Egyptian governorates; in the second stage, 22 households were selected per enumeration area in urban areas and 21 in rural areas. The dataset is nationally representative, with appropriate individual weights applied to ensure accurate population estimates.

To examine labor market outcomes, we use the 2018 wave of the Egyptian Labor Market Panel Survey (ELMPS). The ELMPS, conducted in multiple waves since 1998, is a nationally representative survey implemented through a collaboration between CAPMAS and the ERF. It includes both household- and individual-level data and covers a wide range of topics, including parental background, education, housing, residential mobility, migration, time use, marriage, women's empowerment, and, most importantly, labor market outcomes and job dynamics. The 2018 wave was conducted between April and July 2018 and includes 15,746 households and 61,231 individuals. For this study, we focus on the subsample of 18,261 women aged 15 to 64 who are eligible for analysis.

3.2. Identification strategy

To consider the relationship between harassment and female labor force participation, we use the following identification strategy:

$$y_i = \alpha_0 + \beta\ harassment_i + \delta_0 X_i + \varepsilon_{0i} \quad (1)$$

In the econometric specification, $\boldsymbol{y_i}$ represents labor force participation for woman $\boldsymbol{i}$. As defined by the International Labour Organization (ILO), labor force participation includes individuals who are either employed or unemployed but actively seeking employment. In line with this definition, we use the market definition of labor force participation under the condition that job search is required. Thus, the binary variable takes the value of 1 if the woman has been employed or unemployed during the reference of three months. To be employed, the woman should have a job following the criteria of the ILO definition which typically requires mobility outside of the household. And, to be classified as unemployed, the woman should be willing to work, be able to work, and is searching for a job.

To measure violence in public spaces, we use the experience of harassment as the main variable of interest. Harassment is often the most common type of violence in public spaces as it was discussed in the literature section. In the data we use, harassment encompasses verbal, physical, and sexual harassment experience during the 12 months preceding the survey. The variable $\boldsymbol{harassment_i}$ is a dummy variable capturing whether woman $\boldsymbol{i}$ has experienced harassment, measured by three different dummies, each corresponding to a specific model. The first dummy variable equals 1 if a woman experienced harassment in streets or transportation in the past 12 months. The second dummy captures harassment specifically in streets, while the third focuses on harassment incidents in transportation. Three models are estimated, each using one of these dummies as the primary variable of interest. The model with the first dummy provides an overarching view of the impact of sexual harassment on FLFP. The models with the second and third dummies allow for a more nuanced analysis, disentangling the distinct effects of harassment in public spaces and in transportation on FLFP.

And, $\boldsymbol{X_i}$ denotes the set of control variables included in the model, which were detailed in the covariates sub-section. These control variables account for factors such as women's individual characteristics, household dynamics, and community factors.

3.3. Estimation method

Given the binary nature of the dependent variable, a discrete choice model is appropriate for estimation. Many studies examining VAW typically use logistic or Probit regressions as the estimated probabilities are within the values of [0,1]. However, Angrist and Pischke (2008)

recommend the use of Linear Probability Models (LPM), as they do not rely on a specific distribution and generally perform better when including multiple fixed effects in the model. Despite this, LPMs have a significant drawback: they produce heteroskedastic standard errors (Fajardo-Gonzalez, 2021). To address this, both LPM and discrete choice models, logit and probit, will be employed in this study to ensure robust and accurate results. Therefore, the econometric model can be presented as follows:

$$P(y_i = 1/X) = \alpha_0 + \beta\ harassment_i + \delta_0 X_i + \varepsilon_{0i} \quad (2)$$

In addition to the issue of heteroskedasticity and the tradeoff between LPM and Probit, the literature on VAW suggests that endogeneity could bias the estimates. While most studies highlighting endogeneity focus on the relationship between employment and intimate partner violence, similar concerns apply to violence in public spaces. Endogeneity in this context may arise from several sources. The most worrying factor is the reverse causality. Violence against women can impact their labor market outcomes, but, participating in the labor market might also increase exposure to violence. Exposure theories suggest that working women may be more vulnerable to sexual harassment in public spaces due to the increased frequency with which they need to leave their homes compared to non-working women (Rios-Avila and Canavire-Bacarreza, 2015).

However, the construction of our dataset by merging two different data sources helped in overcoming the problem of endogeneity caused by reverse causality. In fact, we obtain measures on violence from the data collected in 2015 and the data on labor market outcomes from the ELMPS data of 2018. Therefore, it's impossible that future labor market outcomes of 2018 affect harassment rates of 2015 which hinders the reverse causality potential and makes it easier to explore the relationship going from harassment to female labor force participation. Yet, since we are using two different datasets, the women who responded to the questionnaire on violence experience are not the same as the women for whom we have data on the labor market outcomes. As a solution, we aggregate the variable on harassment to obtain comparable rates to use as the main variable of interest. Harassment experience is aggregated by area of residence (s): urban and rural and the governorate (j). in other terms, we are exploring how harassment rate for each governorate in its urban and rural areas would affect the decision of the woman (i) living in governorate (j) and area of residence (s) to participate into the labor force. Thereby, the identification strategy becomes as follows:

$$P(y_{isj} = 1/X) = \alpha_0 + \beta\ harassment_{sj} + \delta_0 X_{isj} + \varepsilon_{0isj} \quad (3)$$

Despite accounting for the endogeneity prevailing because of the reverse causality, other factors may also induce other types of endogeneity. Unobserved heterogeneity may occur as women who are more vulnerable to violence are not randomly selected. This suggests that unobservable characteristics influencing both labor force participation and the likelihood of experiencing harassment could introduce bias in the results. Furthermore, measurement errors due to under-reporting of violence incidents is a significant issue. In traditional communities, women may avoid reporting harassment due to fear of social stigma or a lack of confidence that they will receive support. This under-reporting is expected to lead to an underestimation of harassment rates. Previous studies on harassment in Egypt have reported occurrence rates around 40% (Roushdy and Sieverding, 2015; Hassan, 2020; Hassan et al., 2023), while the average harassment rate according to the ECGBVS data is 12% the highlighting the potential for substantial under-reporting in the data used for this study. Acknowledging these potential biases, we use different robustness checks as it will be presented in section 5.

3.4. Descriptive statistics

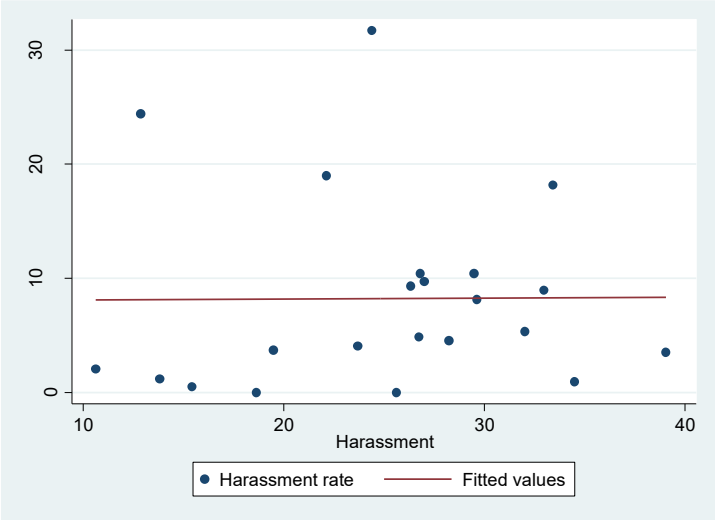
In the ECGBV survey, women were asked whether they had experienced any form of violence, including physical and sexual violence, within the past 12 months. However, responses to several of these questions exhibited a high degree of missing data, particularly for certain types of violence. To address this issue, we focus our analysis on sexual harassment as a proxy for violence in public spaces, given that it had the highest response rate in the dataset, with nearly all respondents (approximately 100%) answering this question.

12% of respondents reported being victims of sexual harassment in public spaces during the past year. Specifically, 6% reported harassment in public transportation, while 9% experienced it on the streets. For those who reported harassment, 30% of incidents in transportation occurred very frequently, ranging from at least once a week to daily. Harassment in the streets, however, was even more frequent, with 75% of victims encountering incidents at least once a week. While for FLFP, we rely on the data of ELMPS 2018. Based on the market definition of FLFP, 19% of women aged between 15 and 64 years old are employed, 5% are unemployed[6], and the remaining 76% are out of the labor force[7]. When examining the relationship between harassment and FLFP, Figure 1 reveals no apparent relationship between harassment and FLFP at the governorate level. This highlights the need for an empirical analysis aiming at deriving causal effects not associations.

[6] To count a woman as unemployed, she should be searching for a job.

[7] The percentages are based on three-months reference before the survey.

Figure 1. Harassment and FLFP correlation at the governorate level



Source: Constructed by the authors based on ECGBV and ELMPS data.

To obtain unbiased estimates, the model includes a range of control variables including women's, households', community characteristics, and parental background. These demographic and community factors are crucial in determining a woman's decision to join the labor force (Hendy, 2015; Hosney, 2016; Lassassi and Tansel, 2020). Table 1 shows that women who are active in the labor market tend to be older and more educated than their non-active counterparts. Moreover, among employed women, a smaller proportion are married (72%) compared to those who are not employed (83%). Active women are also more likely to live in larger households and to be heads of households. In terms of residential location, a greater share of urban women participates in the labor force, whereas the opposite is observed for rural women. Regarding parental background, women whose fathers had no job exhibit higher labor market participation rates, while those whose mothers had no job show lower rates of participation.

Table 1. covariates by women's activity status

	(1) Inactive	(2) Active	(1-2) Diff
Age	35.64	36.86	-1.22*** (0.232)
Education level			
Illiterate	0.34	0.21	0.14*** (0.008)
Reads and writes	0.05	0.03	0.02*** (0.003)
Less than intermediate	0.17	0.08	0.10*** (0.006)
Intermediate	0.32	0.30	0.02*** (0.009)
Above intermediate	0.02	0.05	-0.03*** (0.003)
University	0.09	0.34	-0.25*** (0.007)
Married	0.83	0.72	0.10*** (0.085)
Household size	4.36	4.50	-0.14*** (0.015)
Head of the household	0.12	0.14	-0.016** (0.006)
Urban	0.34	0.44	-0.10*** (0.01)
Rural	0.66	0.56	0.09*** (0.009)
Mother: having no job	0.89	0.78	0.11*** (0.006)
Father: having no job	0.05	0.11	-0.06*** (0.005)

Source: author's calculations using ELMPS data, 2018

4. Empirical findings: does sexual harassment represent an impediment to female labor force participation in Egypt?

4.1. LPM and discrete choice models' findings

Table 2 reports the results from Linear Probability Model (LPM), Logit, and Probit regressions assessing the impact of harassment on FLFP. Across all three specifications, higher harassment rates are associated with an approximate 10-percentage-point reduction in the probability of women participating in the labor force. This result aligns with existing literature, which suggests that experiences of harassment, or public space violence more broadly, can deter women from engaging in economic activities due to heightened concerns for personal safety and fear of further victimization.

The estimated effects of the control variables are also broadly consistent with prior studies. Age exhibits a non-linear relationship with FLFP, while higher educational attainment is positively associated with participation, with the strongest effects observed among women with the highest levels of education. Marital status plays a significant role: both being married and being widowed are associated with a lower probability of labor force participation. In terms of household characteristics, women residing in urban areas or in households with higher wealth scores are less likely to engage in the labor market. Finally, parental background emerges as a relevant factor in line with the findings of Nazier and Ramadan (2018): having a mother who did not work is linked to a lower likelihood of FLFP, whereas having a father who did not work is associated with a higher probability of participation.

Table 2. Harassment and FLFP, LPM and discrete choice models results

	(1) LPM	(2) Logit	(3) Probit
Harassment	-0.0998**	-0.6026**	-0.3560**
	(0.0478)	(0.3071)	(0.1769)
Age	0.0265***	0.1821***	0.1065***
	(0.0025)	(0.0183)	(0.0103)
Age squared	-0.0003***	-0.0019***	-0.0011***
	(0.0000)	(0.0002)	(0.0001)
Education: reference group "illiterate"			
Reads and writes	0.0442**	0.3212**	0.1832**
	(0.0210)	(0.1542)	(0.0854)
Less than intermediate	0.0463***	0.3058**	0.1753***
	(0.0153)	(0.1192)	(0.0658)
Intermediate	0.1263***	0.8523***	0.4820***
	(0.0131)	(0.0899)	(0.0499)
Above intermediate	0.2919***	1.6561***	0.9708***
	(0.0332)	(0.1588)	(0.0943)
University	0.4127***	2.2124***	1.3044***
	(0.0195)	(0.1093)	(0.0634)
Head of the household	0.0122	0.0874	0.0521
	(0.0208)	(0.1164)	(0.0685)
Marital status: reference group "never married"			
Contractually married	-0.1242	-0.5994	-0.4015
	(0.0937)	(0.5603)	(0.3283)
Married	-0.2103***	-1.2522***	-0.7460***
	(0.0184)	(0.1010)	(0.0599)
Divorced	-0.0292	-0.3179	-0.1845
	(0.0450)	(0.2104)	(0.1273)
Widowed	-0.1549***	-0.8899***	-0.5317***
	(0.0316)	(0.1761)	(0.1042)
Number of hours of unpaid care work	0.0004*	0.0024*	0.0015*
	(0.0002)	(0.0014)	(0.0008)
Household characteristics:			
Household size	0.0032	0.0305*	0.0185*
	(0.0028)	(0.0174)	(0.0100)
Living in urban area	-0.0194*	-0.1379**	-0.0816**
	(0.0106)	(0.0679)	(0.0391)
Wealth score of the household	-0.0169**	-0.1066***	-0.0625***
	(0.0066)	(0.0379)	(0.0221)

Table 2. Harassment and FLFP, LPM and discrete choice models results (Continued)

	(1) LPM	(2) Logit	(3) Probit
Mother employment status:			
Reference group "unpaid family work"			
No job	-0.1820***	-1.0470***	-0.6125***
	(0.0248)	(0.1241)	(0.0730)
Wage worker	-0.0393	-0.2721	-0.1502
	(0.0354)	(0.1712)	(0.1001)
Employer	0.1628	0.7842	0.4497
	(0.1293)	(0.5791)	(0.3396)
Self-employer	-0.0569	-0.2802	-0.1662
	(0.0505)	(0.2701)	(0.1527)
Father employment status:			
Reference group "unpaid family work"			
No job	0.1738***	0.9529***	0.5609***
	(0.0399)	(0.2542)	(0.1455)
Wage worker	0.0400	0.2600	0.1500
	(0.0339)	(0.2352)	(0.1327)
Employer	0.0684*	0.4365*	0.2538*
	(0.0356)	(0.2427)	(0.1374)
Self-employer	0.0391	0.2473	0.1460
	(0.0356)	(0.2463)	(0.1390)
Constant	-0.1526***	-4.2754***	-2.4933***
	(0.0574)	(0.3962)	(0.2236)
Observations	15,354	15,354	15,354
R-squared	0.1599		

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

Table 3 further explores the relationship by disaggregating harassment by location. The findings indicate that harassment experienced on the streets or in public transportation is significantly negatively associated with women's likelihood of participating in the labor force. Notably, the magnitude of the effect is larger for harassment occurring in public transportation. Specifically, street harassment is associated with a 15-percentage-point reduction in FLFP, while harassment in transportation corresponds to a 20-percentage-point decrease. These results underscore the critical role that safe and secure transportation plays in supporting women's mobility and broader economic engagement.

Table 3. Harassment and FLFP, LPM and discrete choice models results by location of harassment

	(1) LPM	(2) LPM	(3) Logit	(4) Logit	(5) Probit	(6) Probit
Street harassment	-0.1575**		-0.9682**		-0.5711**	
	(0.0634)		(0.4146)		(0.2399)	
Transportation harassment		-0.2102**		-1.2785**		-0.7515**
		(0.0874)		(0.5708)		(0.3283)
Age	0.0264***	0.0265***	0.1818***	0.1822***	0.1064***	0.1066***
	(0.0025)	(0.0025)	(0.0183)	(0.0183)	(0.0103)	(0.0103)
Age squared	-0.0003***	-0.0003***	-0.0019***	-0.0019***	-0.0011***	-0.0011***
	(0.0000)	(0.0000)	(0.0002)	(0.0002)	(0.0001)	(0.0001)

Table 3. Harassment and FLFP, LPM and discrete choice models results by location of harassment (Continued)

	(1) LPM	(2) LPM	(3) Logit	(4) Logit	(5) Probit	(6) Probit
Education: reference group "illiterate"						
Reads and writes	0.0435**	0.0440**	0.3170**	0.3198**	0.1811**	0.1821**
	(0.0210)	(0.0210)	(0.1543)	(0.1541)	(0.0855)	(0.0854)
Less than intermediate	0.0460***	0.0463***	0.3047**	0.3059**	0.1746***	0.1753***
	(0.0153)	(0.0153)	(0.1195)	(0.1194)	(0.0660)	(0.0659)
Intermediate	0.1259***	0.1264***	0.8507***	0.8526***	0.4811***	0.4822***
	(0.0131)	(0.0131)	(0.0900)	(0.0900)	(0.0500)	(0.0500)
Above intermediate	0.2910***	0.2916***	1.6513***	1.6542***	0.9681***	0.9698***
	(0.0332)	(0.0332)	(0.1590)	(0.1588)	(0.0944)	(0.0943)
University	0.4124***	0.4127***	2.2126***	2.2129***	1.3045***	1.3048***
	(0.0195)	(0.0195)	(0.1093)	(0.1092)	(0.0634)	(0.0634)
Head of the household	0.0121	0.0119	0.0863	0.0864	0.0517	0.0515
	(0.0207)	(0.0208)	(0.1163)	(0.1163)	(0.0685)	(0.0685)
Marital status: reference group "never married"						
Contractually married	-0.1242	-0.1245	-0.5994	-0.6014	-0.4012	-0.4030
	(0.0938)	(0.0937)	(0.5611)	(0.5603)	(0.3286)	(0.3283)
Married	-0.2099***	-0.2106***	-1.2502***	-1.2545***	-0.7448***	-0.7474***
	(0.0185)	(0.0184)	(0.1011)	(0.1009)	(0.0600)	(0.0599)
Divorced	-0.0288	-0.0293	-0.3145	-0.3179	-0.1831	-0.1847
	(0.0450)	(0.0451)	(0.2103)	(0.2105)	(0.1273)	(0.1273)
Widowed	-0.1545***	-0.1551***	-0.8871***	-0.8914***	-0.5301***	-0.5325***
	(0.0316)	(0.0317)	(0.1762)	(0.1763)	(0.1043)	(0.1043)
Number of hours of unpaid care work	0.0004*	0.0004*	0.0024*	0.0024*	0.0015*	0.0015*
	(0.0002)	(0.0002)	(0.0014)	(0.0014)	(0.0008)	(0.0008)
Household characteristics:						
Household size	0.0032	0.0032	0.0301*	0.0302*	0.0184*	0.0184*
	(0.0028)	(0.0028)	(0.0174)	(0.0174)	(0.0100)	(0.0100)
Living in urban area	-0.0155	-0.0196*	-0.1145*	-0.1393**	-0.0677*	-0.0825**
	(0.0107)	(0.0105)	(0.0679)	(0.0674)	(0.0391)	(0.0388)
Wealth score of the household	-0.0168**	-0.0168**	-0.1063***	-0.1055***	-0.0623***	-0.0620***
	(0.0066)	(0.0066)	(0.0379)	(0.0380)	(0.0221)	(0.0222)
Mother employment status: Reference group "unpaid family work"						
No job	-0.1822***	-0.1820***	-1.0482***	-1.0473***	-0.6130***	-0.6126***
	(0.0248)	(0.0248)	(0.1242)	(0.1242)	(0.0730)	(0.0730)
Wage worker	-0.0399	-0.0393	-0.2756	-0.2723	-0.1521	-0.1500
	(0.0354)	(0.0354)	(0.1712)	(0.1713)	(0.1001)	(0.1001)
Employer	0.1622	0.1630	0.7805	0.7858	0.4474	0.4504
	(0.1293)	(0.1294)	(0.5790)	(0.5802)	(0.3395)	(0.3399)
Self-employer	-0.0577	-0.0572	-0.2853	-0.2820	-0.1693	-0.1671
	(0.0505)	(0.0505)	(0.2699)	(0.2699)	(0.1526)	(0.1526)
Father employment status: Reference group "unpaid family work"						
No job	0.1747***	0.1737***	0.9591***	0.9534***	0.5646***	0.5605***
	(0.0399)	(0.0400)	(0.2542)	(0.2546)	(0.1456)	(0.1457)
Wage worker	0.0411	0.0400	0.2667	0.2607	0.1540	0.1498
	(0.0338)	(0.0339)	(0.2351)	(0.2355)	(0.1327)	(0.1329)
Employer	0.0685*	0.0690*	0.4382*	0.4414*	0.2549*	0.2564*
	(0.0356)	(0.0357)	(0.2425)	(0.2432)	(0.1373)	(0.1376)
Self-employer	0.0399	0.0392	0.2520	0.2486	0.1491	0.1464
	(0.0355)	(0.0356)	(0.2462)	(0.2466)	(0.1390)	(0.1392)
Constant	-0.1515***	-0.1520***	-4.2694***	-4.2713***	-2.4909***	-2.4912***
	(0.0575)	(0.0574)	(0.3968)	(0.3964)	(0.2240)	(0.2237)
Observations	15,354	15,354	15,354	15,354	15,354	15,354
R-squared	0.1602	0.1601				

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

4.2. Extensions

Based on our findings, harassment appears to act as a significant deterrent to women's labor force participation in Egypt. To draw meaningful conclusions and formulate relevant policy recommendations, it is essential to understand the underlying dynamics through which harassment influences women's labor market behavior. Accordingly, we begin by conducting a heterogeneity analysis based on women's individual characteristics. Next, we examine potential mediating channels that may help explain the mechanisms behind the observed negative effect of harassment on FLFP.

4.2.1. Heterogeneity analysis

According to classic literature on female labor force participation, women's individual characteristics play a significant role in determining whether they participate in the labor force. Consequently, it is expected that their decision, especially in cases of experiencing harassment, will also be influenced by these individual characteristics given that these same characteristics may affect the likelihood of experiencing harassment. Therefore, it is essential to reanalyze the data by considering different women's characteristics to understand what drives the negative impact of harassment on FLFP.

Three key individual characteristics are examined: marital status, age, and area of residence[8]. Table 4 presents the results of the heterogeneity analysis by marital status, revealing a pronounced divergence in the impact of harassment on women's labor force participation across marital groups. The findings suggest that the effect of harassment is not uniform and varies significantly depending on whether a woman is married or not. For married women, experiencing harassment in public spaces, whether on the street or in public transportation, reduces their likelihood of participating in the labor force. The findings align with the prevailing narrative in the literature, which typically portrays harassment as a traumatizing experience that diminishes women's well-being, productivity, and labor force engagement. However, unmarried women exhibit non-significant suggesting a more complex relationship between exposure to public space violence and economic agency, one that may be mediated by household dynamics, differences in risk perception, and resilience between married and unmarried women.

First, for married women, these findings can be contextualized within the Egyptian social framework. Zeitoun et al. (2023) found a consensus among women that the men in their lives—notably husbands—play a significant role in determining whether they will participate in the labor force. According to the study, if a man perceives the working conditions to be safe and favorable, he is more likely to approve of a woman's participation in the labor force. In the same study, 64% of women agreed that working exposes them to harassment, compared to 76% of men. Given these strong perceptions of an unsafe working environment, it is expected that personal experiences of

[8] The empirical analysis is done using Probit model estimation.

harassment would further decrease the likelihood of labor force participation. Another study by Caria et al. (2023) found that 44% of men believe that women are more exposed to harassment in public spaces when they work, aligning with the results of this analysis.

Second, the non-significant impact of harassment on FLFP among unmarried women may be interpreted through two complementary lenses. First, economic necessity may override the deterrent effect of harassment for many unmarried women. Around 50% of the unmarried sample are divorced or widowed. Hence, for them, labor market participation is not a choice but a financial imperative. These women often bear the primary responsibility for supporting themselves and their families. This structural vulnerability implies that, even when confronted with hostile or unsafe public environments, these women are less likely to exit the labor market simply because they cannot afford to. Zeitoun et al. (2023) reported that the primary driver for women joining the labor force is to provide financial support to their families, as stated by 76% of respondents (both men and women). Second, this pattern may reflect a resistance behavior among unmarried women, who often enjoy greater autonomy from male authority figures compared to their married counterparts. This behavior could be fueled by broader societal shifts, particularly the surge in awareness campaigns around gender equality and gender-based violence (Tadros, 2014). This momentum reached its peak in the passing of Egypt's first anti-harassment law in 2014, which, according to the UNFPA, not only strengthened legal protections but also encouraged women to report incidents more confidently. Together, these forms of social and legal activism may have fostered a stronger sense of empowerment and civic engagement among women, emboldening them to assert their presence in public and economic spaces rather than retreat from them.

Table 4. Harassment effects by marital status, Probit model results, dependent variable (FLFP)[9]

	(1) Married	(2) Unmarried	(3) Married	(4) Unmarried
Street harassment	-0.1754***	-0.0988		
	(0.0700)	(0.1473)		
Transportation harassment			-0.2542***	-0.0698
			(0.0957)	(0.2051)
Full set of controls	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Observations	12,331	3,023	12,331	3,023

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

The analysis further explores age-based heterogeneity by dividing the sample into three age cohorts: youth (15–24 years), young adults (25–44 years), and older adults (45–64 years). As shown in Table 5, the negative effect of harassment on women's labor force participation is statistically significant for the young adult group (25–44 years). This age-dependent effect holds for the full sample and is particularly pronounced among married women. These findings suggest

[9] Marginal effects are reported in the table.

that women at the prime age of entering and remaining in the labor market are disproportionately affected by public space violence compared to their younger and older counterparts.

This pattern is consistent with existing literature indicating that women in this age group are more likely to experience harassment, particularly sexual harassment, which may have stronger repercussions in societies that place a high value on women's modesty and moral reputation. In such contexts, the experience of harassment can act as a powerful social deterrent, limiting women's engagement in both economic and social spheres. Moreover, the average age of married women in the sample is approximately 35, which falls within the young adult cohort, further underscoring the relevance of this finding. Married women may also face additional constraints, as they are often concerned about the social consequences of public exposure to harassment, including a perceived lack of family support and the potential negative emotional impact on their children (United Nations, 2013).

Finally, Table 6 indicates that the impact of harassment on women's labor force participation is significant only in urban areas, with clear distinctions by marital status. Consistent with previous findings, harassment significantly reduces the likelihood of labor market participation for married women in urban settings. However, in rural areas, the effect of harassment is not statistically significant for either group. At first glance, this result may seem counterintuitive. However, Fraser et al. (2017) explain that urbanization presents both opportunities and threats to women. It offers opportunities because traditional gender norms are often more flexible in urban settings, where women's roles evolve to encompass new responsibilities. At the same time, it poses threats as urban environments increase risk factors that heighten the likelihood of violence against women compared to rural areas.

While women in urban areas have greater access to economic and social opportunities, they are also more exposed to risks. For example, slum areas in urban peripheries are associated with higher rates of violence against women. Additionally, urban infrastructure often includes isolated streets with inadequate lighting, discouraging women from commuting long distances, especially during certain times of the day (Mcilwaine, 2013). In contrast, rural areas generally have smaller, more close-knit communities where families are more likely to know one another. This communal environment can provide a layer of informal protection, which may influence women's decisions regarding labor force participation. Consequently, the urban setting, with its unique combination of opportunities and risks, significantly shapes women's labor force participation decisions in the face of harassment.

Table 5. Harassment effects by age cohort, Probit model results, dependent variable (FLFP)[10]

	(a) Total sample					
	(1)	(2)	(3)	(4)	(5)	(6)
	15-24	25-44	45-64	15-24	25-44	45-64
Street harassment	-0.0923	-0.2704***	-0.0009			
	(0.1259)	(8,484)	(0.1277)			
Transportation harassment				-0.0654	-0.3701***	0.0242
				(0.1701)	(0.1083)	(0.1755)
Full set of controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,009	8,484	3,857	3,009	8,484	3,857
	(b) Married sample					
	(1)	(2)	(3)	(4)	(5)	(6)
	15-24	25-44	45-64	15-24	25-44	45-64
Street harassment	-0.0439	-0.2791***	-0.0309			
	(0.0984)	(0.0798)	(0.1432)			
Transportation harassment				-0.0041	-0.3968***	-0.0530
				(0.1405)	(0.1122)	(0.1975)
Full set of controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,049	7,532	2,748	2,049	7,532	2,748
	(c)Unmarried sample					
	(1)	(2)	(3)	(4)	(5)	(6)
	15-24	25-44	45-64	15-24	25-44	45-64
Street harassment	-0.1853	-0.1432	0.0346			
	(0.2504)	(0.2498)	(0.2260)			
Transportation harassment				-0.2211	-0.1559	0.1620
				(0.3463)	(0.3610)	(0.3103)
Full set of controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Observations	960	951	1,109	960	951	1,109

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

[10] Marginal effects are reported in the table.

Table 6. Harassment effects by area of residence, Probit model results, dependent variable (FLFP)[11]

	(a) Total sample			
	(1) Urban	(2) Rural	(3) Urban	(4) Rural
Street harassment	-0.1764**	-0.1023		
	(0.0868)	(0.0874)		
Transportation harassment			-0.2874**	-0.1057
			(0.1290)	(0.1133)
Full set of controls	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Observations	5,598	9,756	5,598	9,756
	(b) Married sample			
	(1) Urban	(2) Rural	(3) Urban	(4) Rural
Street harassment	-0.1879**	-0.1296		
	(0.0917)	(0.0931)		
Transportation harassment			-0.3103**	-0.1656
			(0.1368)	(0.1218)
Full set of controls	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Observations	4,286	8,045	4,286	8,045
	(c)Unmarried sample			
	(1) Urban	(2) Rural	(3) Urban	(4) Rural
Street harassment	-0.0782	-0.0314		
	(0.1840)	(0.2329)		
Transportation harassment			-0.1230	0.1182
			(0.2730)	(0.2897)
Full set of controls	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes
Observations	1,310	1,711	1,310	1,711

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

4.2.2. Mediating channels

Building on the previous findings, married women appear to be the group most negatively affected by harassment in public spaces in terms of labor force participation, in contrast to their unmarried counterparts. These results raise a critical question: is the negative effect of harassment on married women driven by the actual experience of harassment, or by their husbands' perceived risk of such violence? Addressing this question is essential for understanding the mechanisms through which harassment impacts women's economic engagement. Identifying these channels is crucial for formulating targeted policy responses aimed at combating violence and mitigating its detrimental effects on women's welfare.

To explore this issue further, we extend our analysis by incorporating three additional measures: emotional distress, low self-esteem, and husband's controlling behavior. The conventional understanding is that harassment affects women primarily through its psychological impact, causing distress, anxiety, or diminished self-worth, particularly in conservative societies where such experiences can lead to feelings of shame (Loya, 2015; Siddique, 2018). However, our results

[11] Marginal effects are reported in the table.

suggest the presence of an additional pathway: the influence of the husband. Husbands who exhibit controlling behavior may actively restrict their wives from participating in the labor market if they perceive the external environment as unsafe due to high harassment rates.

To test these potential channels, we re-estimate our main model using Probit regressions, incorporating the three new measures and their interactions with our key explanatory variable. The relevant data come from the 2018 wave of the ELMPS, from which we construct three binary indicators. Emotional distress is measured using five mental health questions adapted from the WHO, with a dummy variable equal to one if the woman reports experiencing at least one listed emotion less than half the time. A similar approach is applied to measure low self-esteem, where the indicator equals one if the woman feels unable to manage difficulties or problems. To capture husband's controlling behavior, we use responses to household decision-making questions; if the husband alone makes at least one major household decision, he is classified as controlling[12].

The results, presented in Table 7, show that the negative and statistically significant effect of harassment on married women's labor force participation persists even after controlling for each of the three measures individually (columns 2–4). Furthermore, when all three measures are included simultaneously, the effect remains robust, confirming the consistency of our findings. Notably, the magnitude of the harassment effect increases when low self-esteem or husband's controlling behavior is added, indicating that these two factors mediate part of the overall impact. Most strikingly, when examining the interaction terms, only the interaction between harassment and husband's controlling behavior is both negative and statistically significant (column 8). This suggests that, for many married women, the decision to withdraw from the labor market is not self-initiated but rather imposed by the husband, who may justify his decision as a protective measure in response to an unsafe environment.

This result raises important normative and policy-relevant questions: is the husband's behavior genuinely motivated by concern for his wife's safety, or is it rooted in traditional norms surrounding women's modesty and gender roles? Understanding the nature of this dynamic is essential for designing effective interventions that both protect women and empower them to make autonomous choices regarding their economic participation.

[12] The list of questions used to construct the three variables is provided in Table A1 in the Appendix.

Table 7. Harassment and FLFP, married women, mediating channels analysis

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Harassment	-0.1160**	-0.1141**	-0.1281**	-0.1236**	-0.1297**	-0.0803	-0.0462	-0.0487
	(0.0514)	(0.0512)	(0.0521)	(0.0514)	(0.0518)	(0.0895)	(0.0636)	(0.0658)
Emotional distress		0.0046			0.0139	0.0113		
		(0.0102)			(0.0105)	(0.1481)		
Low self-esteem			-0.0419***		-0.0427***		-0.0223	
			(0.0096)		(0.0099)		(0.0139)	
Husband controlling behavior				-0.0215**	-0.0189*			0.0008
				(0.0099)	(0.0100)			(0.0139)
Harassment x emotional distress						0.0113		
						(0.0148)		
Harassment x low self-esteem							-0.1635	
							(0.1020)	
Harassment x husband controlling behavior								-0.2000**
								(0.1039)
Set of controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,331	12,330	12,301	12,289	12,289	12,330	12,301	12,289

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

5. Robustness

As discussed in Section 3 on methodological aspects, we merged two data sources to address potential endogeneity concerns. As a robustness check, this section relies solely on one source of data, the Egypt Economic Cost of Gender-Based Violence (ECGBV) survey, to examine whether the effect of harassment remains robust when analyzing both experiences of violence and labor market outcomes for the same group of women. To ensure consistency with our main analysis, we use variables that closely match the definitions used in the ELMPS dataset. For example, our main dependent variable is binary equal to 1 if the woman was active in the labor market during the 12 months preceding the survey. We also include a set of control variables that capture key individual and household characteristics, with the exception of parental background, which is not available in the ECGBV survey unlike the ELMPS.

5.1. Reduced form

Recalling Equation (1), our main variable of interest is the individual experience of harassment in public spaces. However, estimating the model using this specification risks producing a biased coefficient for the "harassment" variable, as it may capture the bidirectional relationship between labor force participation and experiences of violence—an issue previously discussed in relation to exposure theories. To address this concern, we estimate a reduced-form equation that relies on the aggregate rate of harassment at the governorate level, rather than individual-level experiences. The identification strategy is thus modified as follows, where (i) denotes the individual woman and (j) denotes the governorate in which she resides:

$$P(y_i = 1/X) = \alpha_0 + \beta\ harassment_j + \delta_0 X_i + \varepsilon_{0i} \qquad (4)$$

Table 8 presents the results of the reduced-form estimations using LPM, Logit, and Probit regressions. While the estimated effects are smaller in magnitude compared to those in the main analysis, all three models consistently show a negative and statistically significant impact of governorate-level harassment rates on women's likelihood of participating in the labor market. For example, women residing in governorates with higher rates of harassment in public spaces are significantly less likely to be active in the labor market. These results likely reflect security-related concerns, as heightened exposure to public harassment may discourage women from engaging in economic activities outside the home due to fears for their personal safety.

Table 8. Harassment and FLFP, reduced form results

	(1) LPM	(2) Logit	(3) Probit
Harassment rate at governorate level	-0.0007*	-0.0076***	-0.0037**
	(0.0004)	(0.0029)	(0.0016)
Age	0.0224***	0.2257***	0.1183***
	(0.0023)	(0.0213)	(0.0115)
Age squared	-0.0002***	-0.0022***	-0.0011***
	(0.0000)	(0.0003)	(0.0001)
Education: reference group primary education			
Preparatory	0.0642***	0.5616***	0.2705***
	(0.0099)	(0.1100)	(0.0570)
Secondary	0.1038***	0.9479***	0.4760***
	(0.0090)	(0.0951)	(0.0490)
University or above	0.3845***	2.4584***	1.3627***
	(0.0129)	(0.1010)	(0.0532)
Household size	-0.0029	-0.0200	-0.0081
	(0.0025)	(0.0206)	(0.0117)
Hours of unpaid care work per day	-0.0010	-0.0101*	-0.0057*
	(0.0007)	(0.0061)	(0.0034)
Other income	-0.1165***	-0.8648***	-0.4631***
	(0.0154)	(0.1201)	(0.0663)
Area of residence: reference group urban region			
Rural region	0.0157**	0.1410**	0.0710**
	(0.0070)	(0.0560)	(0.0313)
Married	-0.1380***	-1.0136***	-0.5711***
	(0.0123)	(0.0797)	(0.0455)
Constant	-0.3389***	-6.8589***	-3.6683***
	(0.0410)	(0.4187)	(0.2249)
Observations	13,075	13,075	13,075
R-squared	0.1478		

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

5.2. IV approach

Given the potential sources of endogeneity discussed in Section 3, it is essential to address these concerns to ensure that the estimated relationship between harassment and FLFP is not biased. To this end, we implement a Two-Stage Least Squares (2SLS) estimation as a robustness check. This approach allows us to account for the possibility that unobserved factors may simultaneously influence both harassment experiences and labor market outcomes. And, the model to be estimated can be presented as follows:

$$harassment_i = \alpha_1 + \theta\, Z_i + \delta_1 X_i + \varepsilon_{1i} \quad (5)$$

$$y_i = \alpha_2 + B_{2SLS}\widehat{harassment}_i + \delta_2 X_i + \varepsilon_{2i} \quad (6)$$

In the first stage, variables measuring different forms of violence against women are predicted using the same set of control variables (X) that were included in the initial model specification, along with an instrument (z). Following the approach suggested by Rios-Avila and Canavire-Bacarreza (2015), the harassment occurrence rate at the governorate level is used as the instrument. For instance, transportation harassment is measured using the average number of harassment incidents on public transportation within the woman's governorate. The rationale behind this choice is that women living in governorates with higher rates of harassment are more likely to experience it themselves, and their perceptions of harassment risk are also expected to be higher compared to women in areas with lower harassment incidence. To maintain the integrity of the instrument, the woman's own experience of harassment is excluded when calculating the average harassment rate at the governorate level, preventing any reverse causality between labor force participation and harassment rates.

In the second stage, the predictions of harassment incidence derived from the first stage are used in the model to estimate the impact of harassment on women's labor force participation. This two-stage approach helps address potential endogeneity issues, allowing for a more accurate estimation of the relationship between harassment and labor force participation. If our instruments are valid, they should fulfill two conditions: $\theta \neq 0$ and E($Z_i \varepsilon_{2i}$)=0. In a nutshell, the selected methodology attempts at mitigating the problems of selection bias and endogeneity that may intervene with our results.

Table 9 presents the results from the instrumental variable (IV) regressions. Using the Two-Stage Least Squares (2SLS) estimation method, we find that harassment has a statistically significant negative effect on FLFP, thereby confirming the robustness of our baseline findings. From a methodological standpoint, a comparison of the IV estimates with those reported in Tables 2 and 3 reveals a larger (inflated) coefficient in the IV specification relative to the LPM results. As Gedikli et al. (2023) note, this difference arises because the LPM estimates reflect the average treatment effect for the entire population, while the IV approach identifies the local average

treatment effect (LATE) for the subpopulation of compliers, that is, women whose experience of harassment is influenced by the instrumental variable. This discrepancy does not indicate estimation bias but rather reflects the different populations over which the effects are estimated.

We also report the results from the first-stage regression and relevant diagnostic tests. The instruments demonstrate a strong and statistically significant relationship with the endogenous variable, supporting their relevance. Furthermore, the Kleibergen-Paap F-statistic exceeds conventional thresholds, mitigating concerns about weak instruments.

Table 9. Harassment and FLFP, IV results

	(1) IV	(2) IV - 1st stage
Harassment	-0.3124**	
	(0.1390)	
Age	0.1181***	-0.0003
	(0.0115)	(0.0022)
Age squared	-0.0012***	-0.0001**
	(0.0001)	(0.0000)
Education: reference group primary education		
Preparatory	0.2725***	0.0066
	(0.0570)	(0.0098)
Secondary	0.4844***	0.0271***
	(0.0493)	(0.0081)
University or above	1.3760***	0.0424***
	(0.0541)	(0.0106)
Household size	-0.0085	-0.0013
	(0.0118)	(0.0021)
Hours of unpaid care work per day	-0.0050	0.0023***
	(0.0034)	(0.0008)
Other income	-0.4744***	-0.0361***
	(0.0664)	(0.0138)
Area of residence: reference group urban region		
Rural region	0.0543*	-0.0536***
	(0.0325)	(0.0067)
Married	-0.5897***	-0.0598***
	(0.0459)	(0.0109)
Harassment rate at the governorate level		0.0117***
		(0.0004)
Constant	-3.6030***	0.2090***
	(0.2279)	(0.0426)
Observations	13,075	13,075
R-squared		0.1300
Kleibergen-Paap F statistic	911.44	

*Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*

6. Conclusion and policy recommendations

Sexual harassment poses a significant barrier to women's access to social and economic opportunities. As both governmental institutions and civil society actors increasingly prioritize the issue, it becomes essential to analyze how sexual harassment may hinder women's economic and social engagement. One of the most profound consequences lies in its potential to adversely affect women's economic well-being, particularly through its impact on labor market outcomes.

This paper seeks to contribute to the economic literature on three main fronts. First, it draws attention to the economic repercussions of a critical form of violence that threatens women's capacity to fully participate in Egypt's economy. Second, it enriches the existing body of research on FLFP in Egypt by addressing an overlooked dimension, the role of VAW, which has often been neglected in economic analyses. For decades, studies have attempted to explain the persistent gender gap in labor force participation, typically by focusing on demographic variables such as age, education, and marital status. However, these factors have proven insufficient in fully accounting for the disparity, pointing to the need for exploring structural and societal constraints such as violence in public spaces. Third, the paper contributes to the transportation literature by examining how the experience of harassment in public transportation may influence women's decisions regarding labor market engagement.

Drawing on data from the Egyptian Survey on the Economic Cost of Gender-Based Violence and the Egyptian Labor Market Panel Survey, this paper investigates the effect of harassment on FLFP using discrete choice models. Our results provide evidence that exposure to sexual harassment has a negative effect on FLFP in Egypt. To further explore this relationship, we investigate the heterogeneous effects across different subgroups of women. The findings indicate that married women, those aged 25–44, and women residing in urban areas are particularly vulnerable, as harassment is more likely to lead to labor market withdrawal within these groups. These results highlight the need for further investigation into the complex dynamics between harassment and FLFP, particularly in relation to socioeconomic pressures, household responsibilities, and varying narratives of women's empowerment that may shape responses to harassment. Marital status emerges as a particularly salient factor, prompting a closer examination of potential mediating channels. It is critical to determine whether women withdraw from the labor force due to the direct psychological and physical consequences of harassment, or as a result of decisions made by their husbands. Mediation analysis reveals that when the husband exhibits controlling behavior, the likelihood of the wife being active in the labor market in response to harassment significantly decreases compared to women in less controlling partnerships.

We also conduct robustness checks to validate our findings. As highlighted in the work of Fajardo-Gonzalez (2021) and Gedikli et al. (2023), endogeneity in this context may arise from several sources: reverse causality between labor force participation and the likelihood of experiencing

harassment; omitted variable bias, whereby unobserved factors influence both outcomes; and measurement error, particularly due to underreporting or misreporting of harassment incidents in survey data. To address these concerns, and relying solely on data from the ECGBV survey, we implement an instrumental variable (IV) approach, using governorate-level harassment rates as the instrument. In addition, we perform a reduced-form analysis using Probit regressions. In both cases, the results remain robust, lending further credibility to our main findings.

Building on the analysis presented in this paper, several policy recommendations can be proposed across four main areas. First, it is essential to engage men in educational efforts aimed at equipping them with appropriate strategies to support women who experience harassment. Men should be empowered to offer meaningful support that enables women to cope with and mitigate the negative consequences of such experiences. Raising men's awareness of the detrimental effects of harassment can yield two important outcomes: first, it may contribute to a reduction in harassment rates by fostering greater understanding and behavioral change; second, it may lessen male resistance to women's labor market participation, which is often driven by fears surrounding potential harassment.

Second, the role of the government in infrastructure investments is crucial. The Egyptian government should place greater emphasis on accessible and secure transportation. As highlighted in the literature review and the findings of this paper, women are disproportionately affected by mobility barriers compared to men. Without a well-developed public transport network, women are forced to sacrifice numerous economic opportunities that could enhance their economic well-being. Additionally, improving the infrastructure of public roads, such as ensuring streets are well-lit, can encourage women to take up paid jobs outside their homes by fostering a sense of safety and security.

Third, there is a need to align the de jure laws with their de facto enforcement. As emphasized by the Women, Business, and the Law (WBL) Index (2024), Egypt has established a legislative framework addressing harassment but lacks an effective enforcement mechanism. For example, while specialized units for handling harassment cases have been set up in police stations, insufficient information about their roles limits their impact. Educating women about the functions of these units and how they can provide assistance would encourage more women to report harassment incidents.

Fourth, stakeholders need to coordinate their efforts to address harassment's negative effects on women's labor force participation. Women often avoid private sector jobs due to long working hours and extended commutes. Private sector firms can address this issue by offering transportation solutions, such as private buses, with costs deducted from salaries. Studies have shown such initiatives to be effective in supporting women's employment. Additionally, NGOs should focus on creating community programs to raise awareness of the detrimental impacts of

violence against women. These programs should empower women with tools to confront harassment while engaging men and boys to shift harmful attitudes, as men often perceive public spaces and workplaces as unsafe for women, as highlighted by Zeitoun et al. (2023). This holistic approach, involving government, private sector, and community efforts, is essential for reducing the barriers harassment poses to women's economic participation.

In sum, this paper argues that the persistently low levels of FLFP in Egypt are not solely attributable to supply-side constraints or demand-side discrimination, but also to the presence of unsupportive environments and inadequate infrastructure that hinder women's access to economic opportunities. While this study makes important contributions to literature, it is not without limitations.

First, the analysis relies on a single cross-sectional dataset on VAW collected in 2015, thereby failing to capture more recent dynamics in women's employment patterns. Second, the data likely suffers from underreporting of harassment experiences. As discussed in the introduction, previous studies have estimated harassment rates in Egypt to be as high as 40%, compared to approximately 10% in our dataset. The underreporting of gender-based violence is a well-documented issue in the literature and presents a significant challenge for empirical analysis.

In light of these limitations, future research would benefit from new waves of nationally representative data that not only capture recent trends in women's labor market outcomes but also incorporate improved measures of gender-based violence. Importantly, data collection efforts should be accompanied by broader institutional and societal measures to encourage women to report incidents of harassment, thereby enhancing the reliability and depth of future research.

Appendix

Table A1

Emotional distress	I have felt cheerful and in good spirits
	I have felt calmed and relaxed.
	I have felt active and vigorous.
	I woke up feeling fresh and rested.
	My daily life has been filled with things that interest me.
Low self-esteem	I can always manage to solve difficult problems if I try hard enough
	If someone opposes me, I can find the means and ways to get what I want.
	It is easy for me to stick to my aims and accomplish my goals.
	I am confident that I could deal efficiently with unexpected events.
	Thanks to my resourcefulness, I know how to handle unforeseen situations.
	I can solve most problems if I invest the necessary effort.
	I can remain calm when facing difficulties because I can rely on my coping abilities.
	When I am confronted with a problem, I can usually find several solutions.
	If I am in trouble, I can usually think of a solution.
	I can usually handle whatever comes my way.
Husband controlling behavior	purchasing major household items (refrigerator, stove, furniture)
	making household purchases for daily needs
	visits to family, friends or relative
	types of daily food (cooking for the day)
	Who in your family usually has the final say on the following decisions?
	going to the doctor for treatment
	buying personal clothes
	taking one of the children to the doctor
	sending children to school on a daily basis
	buying clothes for children

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