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Investigating financial exclusion through the lens of socio-economic inequalities: Implications for financial well-being

Abstract. The aim of the study was to measure the level of socio-economic inequalities appeared due to financial exclusion and then to measure their effect on financial well-being of people according to the different socioeconomic characteristics. This research used the 2021 version of Global Findex Survey and was disseminated in 2023 with a sample of 1,003 respondents. The inequality in financial exclusion is measured using the concentration index and the concentration curves. For studying the effect of financial exclusion on financial well-being, binary logistic regression model is used. The results of this research revealed that socio-economic inequalities represented drivers for financial exclusion exemplified in poor, females, rural, unemployed, least educated and young population. With respect to access exclusion, results revealed that 76.7% of the poorest 20%, 70% of the females, 70% of the rural, 68.5% of the unemployed, 65.7% of the uneducated and 85.3% of the young respondents were unbanked. On the other hand, with respect to usage exclusion, results revealed that 88.7% of the poorest 20%, 78.8% of the females. 80% of the rural, 77.7% of the unemployed, 76.8% of the uneducated and 90.8% of the young respondents had inactive accounts. Additionally, results of the regression analysis showed that income, age, and usage exclusion for the purpose of saving have significant effect on financial resilience. While usage exclusion for the purpose of saving, age, working status, and gender have significant effect on financial worry. This research adds significant value to the current knowledge through filling the gap in understanding socio-economic inequalities associated with financial exclusion since it succeeded in identifying those who are financially excluded. The study proposes an action plan that outlines concrete steps aiming at reducing financial exclusion at one hand and promoting financial well-being in Egypt on the other hand

Keywords: marginalisation from formal financial institutions; financial resilience; financial worry; demographic characteristics concentration index; binary logistic regression

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INTRODUCTION

The research problem that motivated this study is the growing socioeconomic inequalities in financial exclusion, despite the progress achieved worldwide with respect to account ownership. At the same time, financial exclusion negatively affects people's financial resilience and increase their financial worry. Thus, people who exhibit diminished financial resilience and elevated financial worry are inclined to possess lower levels of financial well-being (FWB). Literature on financial exclusion within social classes is scarce. However, it's important to investigate the extent to which the marginalised groups inside each class are financially excluded. Hence, this research focuses on the other side financial exclusion rather than financial inclusion. In addition, it measures socioeconomic inequality within each social class in various socioeconomic characteristics such as income groups, gender, place of residence, working status, and education.

For this, the research highlights some studies that discussed financial inclusion, and it deducted the alternative perspective-financial exclusion. With respect to gender, some studies, like S. Kaur & C. Kapuria (2020), showed that financial inclusion indicators demonstrated inequality between males and females in developing and emerging market economies. M. Fahmy & H. Ghoneim (2023) tested whether being financially included differs according to gender using three different models. They found mixed results whereby this relationship is insignificant in two out of the three models. Regarding income inequality, H.M. el Baz (2020) argued that the gap between the richest and poorest income groups has increased between 2014 and 2017 with higher exclusion in favour of the poorest. In addition, high income groups are considered the preferred target group for formal financial institutions because of their higher credit ratings, lower probability of defaults, and more stable and well-recognised income. Furthermore, C. Milana & A. Ashta (2020) found improvement in financial inclusion indicators between 2011 and 2017 but documented many divides among various socioeconomic classes particularly geographical location, age, gender, and education.

Pertaining to the studies that have considered aspects of financial wellbeing. Several studies have presented the theoretical foundations of FWB. M. Sinani (2021) used a qualitative descriptive method in addressing FWB and agreed on setting up a theory that aims at defining, measuring and analysing FWB. In addition, Consumer Financial Protection Bureau (CFPB) suggested a "Financial Well-Being" scale in a technical report whereby the study started by presenting a definition of FWB, then offered an overview of a typical approach to a scale development and then developed a reliable CFPB financial well-being scale. J. Coats & V. Bajtelsmit (2024) discussed measures and drivers of FWB and showed that there are various alternative techniques in assessing it and that financial literacy and personal traits are influencing FWB. Hence, considerable studies have discussed theoretical framework for FWB. Furthermore, some studies aimed at testing the level of FWB concept in some countries whereby each study selected a certain method. K. Sehrawat *et al*. (2021) used the partial least squares structural equation modeling (PLS-SEM) approach in identifying which determinants of the financial literacy and financial behavior are influencing FWB and carried out a survey on 349 respondents and concluded that 12 out of 17 factors are affecting FWB. In addition, V. Mathew *et al*. (2022) performed a cross-sectional causal investigation study using a web-based survey and indicated that there is a positive impact on financial self-efficacy and negative impact on risk tolerance whereby it was presented from the Indian perspective. Finally, there are some studies that have applied FWB on specific countries.

Additionally, A. Tinta *et al*. (2022) studied the microeconomic determinants of financial inclusion focusing on individual characteristics of financial inclusion and financial resilience in 40 African countries. They found that younger individuals and rural residents prefer using mobile accounts while elder, more educated, employed, and richer people prefer financial institution accounts. Furthermore, F. Hamid *et al*. (2023) studied the impact of socio-demographic characteristics, financial inclusion and financial knowledge on the financial resilience across Malaysia and it resulted that the financially resilience differs according to socio-economic characteristics and that it is associated with higher financial knowledge. To this end, this research differs from existing literature in 3 respects. This research aimed at analysing financial exclusion through measuring disparities among income groups, gender, education, place of residence, working status, and age along with determining financial exclusion effect on financial well-being.

LITERATURE REVIEW

Financial Exclusion was defined by the European Commission as a process whereby people encounter difficulties in accessing and/or using financial products and services. Financially excluded individuals and groups are classified into two main dimensions: barriers to access and barriers to usage, as explained by A. Csiszárik-Kocsir & C. Lentner (2023). Despite the progress achieved worldwide with respect to account ownership, financial exclusion in terms of barriers to access is still evident. In this respect, R. Saini *et al*. (2019) report that almost 3 billion people globally were facing barriers to access formal financial goods and services in 2018. However, worldwide in 2021, according to the Global Findex Database, 26% of people lacked access to financial services through a financial institution or mobile money provider, and by 2025 this percentage declined to 21%, as documented by L. Klapper *et al*. (2025).

This decline in the number of financially excluded people could be attributed to adopting financial inclusion strategies as an enabler for achieving Sustainable Development Goals (SDGs). Interestingly, A. Demirgüç-Kunt *et al*. (2018) highlight that more than half of the global unbanked population is concentrated in only seven countries, among which is Egypt. It is worth noting that financial exclusion hinders the achievement of Sustainable Development Strategy (SDS) in Egypt and Egypt's Vision 2030. In addition to the importance of barriers to access to financial services, barriers to the use of these services constitute another important dimension of financial exclusion, as emphasised by R. Saini *et al*. (2019). In this respect, the Global Findex 2021 survey shows that financial exclusion in terms of usage persists, with 13% of account owners having inactive accounts in developing countries in 2021 compared to 17% in 2017, according to A. Demirgüç-Kunt *et al*. (2018).

Another area of concern relates to socioeconomic gaps associated with financial exclusion among various socioeconomic classes such as gender, income, age, education, and workforce. Although some progress has been achieved in closing these gaps, more efforts are still required, as noted by S. Kaur & C. Kapuria (2020). Furthermore, due to socioeconomic inequalities, these vulnerable groups are more likely to suffer from higher financial exclusion with lower ability to access and use financial services. Consequently, being financially excluded hinders people's ability to obtain sufficient funds to meet unexpected financial shocks – known as financial resilience – and increases their anxiety about their financial lives – known as financial worry. In this context, financial well-being has two dimensions, namely financial resilience and financial worry. For this, the research argues that the higher the socioeconomic inequalities, the higher the financial exclusion, and the lower the financial well-being in Egypt. Therefore, the contribution of this research lies in measuring the extent of socio-economic inequalities associated with financial exclusion and their effect on financial wellbeing. Hence, it aims to firstly measure the level of socio-economic inequalities that appear due to financial exclusion and then to assess their effect on financial well-being across different socioeconomic characteristics.

The term "Financial Exclusion" originated when attention shifted towards inclusion, leaving some groups behind. It was first mentioned in 1993 to describe those with limited physical access to banking services due to bank branch closures. Later, in 1999, the concept broadened to include people with constrained access to mainstream financial services (European Commission, 2008). Hence, financial exclusion does not only involve lack of physical access but also limited access to credit and modern payment methods. The concept has further evolved to include financial knowledge and education. Although various definitions of financial exclusion exist, no single universally accepted definition has emerged. For example, A. Leyshon *et al*. (1995) define it as processes that prevent disadvantaged groups from accessing the financial system. Similarly, A. Csiszárik-Kocsir & C. Lentner (2023) describe it as difficulties in accessing and using financial products and services that result in disadvantages in daily life. Financial exclusion is a complex concept involving multiple implicit and explicit dimensions recognised by both academics and policymakers. It refers to a situation in which individuals lack access to mainstream financial services such as bank accounts, insurance, and credit, resulting in severe difficulties. In brief, financial exclusion represents the problem, while financial inclusion is the solution, as argued by M. Goodwin *et al*. (1999). The first dimension of financial exclusion is access exclusion, defined as restrictions arising from risk assessment processes (European Commission, 2008). Individuals without bank accounts are more vulnerable to financial shocks and are deprived of access to financial services. Moreover, lack of access to digital financial services, such as mobile money, limits the ability to transfer funds across distances, thereby reducing remittances and consumption. Consequently, financially excluded individuals rely on less safe and more expensive alternatives, which negatively affects their well-being.

The second dimension is usage exclusion, defined as limited or ineffective use of financial products and services (European Commission, 2008). While account ownership enables saving, borrowing, and payments, limited usage deprives individuals of these benefits. Barriers to usage include high fees, lack of trust, insufficient proof of payment, and institutional accessibility, as identified by M. Rashdan & N. Eissa (2020). According to the Consumer Financial Protection Bureau (2015), financial well-being is defined as a state of financial control, resilience, and freedom of choice. The Global Findex framework conceptualises FWB through financial resilience and financial worry. Financial resilience reflects the ability to cope with unexpected shocks and depends on income, behaviour, financial systems, and policy environments (Apriyanti *et al*., 2024). Financial worry, on the other hand, reflects stress and anxiety related to financial instability, as discussed by K. Dirkx *et al*. (2022).

MATERIALS AND METHODS

Sample description and variables for binary logistic regression design

This research is considered as an exploratory study whereby the authors try to investigate the socioeconomic inequalities within the distribution of the financial exclusion in Egypt by identifying the most disadvantaged subgroups of the population. Then, it employs Binary Logistic Regression Model to measure the effect of financial exclusion on financial well-being considering socioeconomic inequalities. For this, this part presented the sample size and characteristics, measures and statistical modelling used to fulfil the objectives of the research. This research depended on data drawn in 2021 wave of the Global Findex Database which relies on nationally representative surveys of individuals aged 15 and above. The data was collected through the Gallup World Poll depending on a standardised questionnaire. The survey utilised a probability sampling methodology. The survey adheres to recognised ethical standards for research involving human participants, encompassing voluntary participation, informed consent, and rigorous protection of respondents' privacy and confidentiality. Participants' personal data were utilised only for specified research objectives and protected by suitable data security methods, with access limited to authorised individuals (Gallup, 2025). In Egypt, a stratified multistage cluster sampling design was employed, where primary sampling units were initially selected, followed by the households, then the individuals who are the members of the chosen households. Sampling weights were further utilised to correct for selection bias and to guarantee national representativeness. Data collection was performed through face-to-face interviews. The sample excluded the frontier governorates Frontier governorates (Matruh, Red Sea, New Valley, North Sinai, and South Sinai) since they are remote and represent less than 2 percent of the total population. The final sample consisted of 1,003 respondents (Demirgüç-Kunt *et al*., 2021). The data collection methods complied with recognised ethical norms adhered by the World Bank Group. Participation was voluntary, and informed consent was secured from all participants prior to the interview. Responses were anonymised, and the confidentiality of the information was upheld in accordance with the data provider's rules. The sample characteristics are described in Table 1.

Table 1. Description of the variables

Type of variable	Variable	Description/ Operational measure
Explained variables	Financial Resilience	This indicator takes "0" in case the individual achieved resilience by any source other than financial institution and "1" if the individual achieved resilience through any financial institution
	Financial Worry	This indicator takes "0" if the individual experienced "no worry at all" at the reference period and "1" if the individual experienced any level of financial worry including "very worried" and "somewhat worried"
Explanatory variables	Access Exclusion	This indicator takes "0" if the individual has no access to financial services and institutions and "1" if otherwise
	Usage Exclusion (for the Purpose of Saving, Borrowing, and Payment including sending and receiving money)	This indicator takes "0" if the individual doesn't use the financial services for any purpose, and "1" if otherwise
	Income	Within economy household income quintile. This variable takes "1" if the household income is among the poorest quintile of the population, takes "2" if the household income is among the second quintile, takes "3" if the household income is within the middle quintile, takes "4" if the household income is among the fourth quintile, and takes "5" if the household income is within the richest quintile
	Gender	Takes "1" if the respondent is female and takes "0" if the respondent is male
	Educational Attainment	Takes "1" if the respondent completed primary or less, "2" if the respondent competed secondary school, and "3" if the respondent completed tertiary education or more
	Type of Place of Residence	Takes "1" if the respondent lives in a rural area, and "2" if the respondent lives in an urban area
	Working Status	Takes "1" if the respondent is working, and "2" if the respondent is not working
	Age	Ranges between 15 – 99+. Then the age is categorised into the following categories in order to prepare descriptive statistics provided in Table 2: takes "1" if the respondents' age ranges between 15 -29, "2" if it ranges between 30 – 39, "3" if it ranges between 40 – 49, "4" if it ranges between 50 – 59, and "5" if it ranges between 60 or above

Source: formulated by the authors

Since the research employs Binary logistic regression model, all variables used are binary ones that take two values "0" and "1" as demonstrated in Table 1. Additionally, when measuring the inequalities in financial exclusion, socioeconomic characteristics- Income, Gender, Educational Attainment, Place of Residence, Working Status, and Age- act as predictors for the inequalities, as the authors measured the unequal distribution of the financial indicators with respect to the sample disaggregated by these socioeconomic characteristics.

Descriptive statistical method and gender inequality measures

First, the authors used the percentage distribution to show the percentages of financially excluded individuals with respect to the dimensions of financial exclusion and financial well-being based on their socioeconomic characteristics. In this regard, "Chi-square test between proportions" is used to test the statistical significance of the difference between the percentage of financially excluded individuals for each socioeconomic characteristic of the respondents (McHugh, 2013). Second, the authors employ concentration curves and concentration index to further investigate the socioeconomic inequalities associated to financial exclusion. The concentration curves are incorporated as a descriptive method for visually representing the inequality in both dimensions of financial exclusion – access and broadly defined usage – as well as specific purposes of using financial services – namely usage for the purpose of saving, borrowing, receiving money, and sending money – ranked by various socioeconomic characteristics of respondents. With regard to the concentration index (CI), it is a measure of social and economic variations in terms of inequality, i.e. it is a standard measuring tool for inequality in the phenomenon under study which provides the magnitude of the concentration of a certain phenomenon (Kim *et al.*, 2020). It is calculated by quantifying the relative inequality between different subgroups formulated by another categorical variable, i.e., the financial exclusion between the deprived and non-deprived. According to A. Wagstaff & E. Van Doorslaer (2000), CI is calculated by the following formula:

$$CI = \frac{2}{n*\mu}\sum_{i=1}^{n} x_i R_i - 1, \quad (1)$$

where n – the sample size; x_i – the variable of interest, μ – its mean; R_i – the individual's i fractional rank in the SES indicator distribution.

For continuous (unbounded) variables, the confidence interval extends from −1 to +1. A negative value signifies concentration among the disadvantaged, whereas a positive value denotes concentration among the better-off. A higher absolute value of the CI indicates an increased level of inequality. When the variable of interest is binary, such as financial exclusion, the range of the concentration index is contingent upon the mean of the variable. In this instance, the mean μ denotes the ratio of individuals with a value of one. The limits of the confidence interval stem from the most disparate distributions of the binary outcome. The highest value of the CI is attained when all individuals with $x = 1$ are aggregated among the better-off, whereas the

minimum is reached when they are concentrated among the disadvantaged. In these extreme scenarios, the concentration index is constrained between $\mu - 1$ and $1 - \mu$ (Wagstaff, 2005). The reliance of the bounds on the mean indicates that the CI is not directly comparable among binary variables with varying means. To mitigate this constraint, normalised version of the CI is frequently employed, in this case:

$$\mu = \frac{n-j}{n}. \quad (2)$$

$CI = 1 - \mu + \frac{1}{n}$, for large samples, the (1/n) term becomes very small, and the minimum and maximum tend to $(\mu - 1)$ and $(1 - \mu)$ respectively. And the CI is normalised by dividing it by either the reciprocal of the mean or the bound of the concentration index, rescaling the CI to reside within the interval [−1, 1]. In empirical applications, such as T. Ásgeirsdóttir & D. Dagný (2013) and H. Amirian *et al*. (2014), the CI normally does not surpass 0.5 in absolute value. Generally, values ranging from 0.2 to 0.3 signify a high degree of inequality, values from 0.1 to 0.2 denote moderate inequality, and values below 0.1 reflect low inequality.

Binary logistic regression model

It is used to study the determinants of financial well-being. Financial well-being is measured through two main indicators: financial resilience and financial worry.

Financial resilience is defined as a binary variable that signifies an individual's ability to depend on formal financial resources during emergencies. The score is 1 if the respondent said that their primary source of emergency finances within the 30 days preceding the survey would be borrowing from a bank, employer, or private lender; otherwise, it is 0.

Financial worry is defined as a composite binary indicator that signifies if an individual experiences financial stress in essential life domains. The result is 1 if the respondent, at the time of the survey, indicated financial concern regarding at least one of the following: old age, medical expenses, bills, or educational fees; otherwise, it is 0.

Thus, the research undertakes two models whereby in the first model, "financial resilience" is employed as the explained variable while in the second model, "financial worry" is employed as the explained variable.

The binary logistic regression model estimates the probability of success of the outcome variables (e.g., the probability of having financial resilience by any source other than financial institution) based on the explanatory variables (socioeconomic characteristics). It does so by transforming the probability into a log-odds (logit) scale. The relationship between the predictors and the log-odds of the outcome is assumed to be linear. The logistic regression model is expressed as follows:

$$log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_n x_n, \quad (3)$$

where p – the probability of success of the outcome variable; $log\left(\frac{p}{1-p}\right)$ – the log-odds of the outcome variable; β_0 – the intercept; β_1,..., β_n – the regression coefficients; x_1, ..., x_n – the predictors. The coefficients (β) are typically estimated using maximum likelihood estimation (MLE). The odds ratios (OR) by exponentiating the coefficients (e^{β}). If OR is greater than 1 indicates a positive effect of the predictor on the log-odds of the outcome, while an OR less than 1 indicates a negative effect, and OR equals 1 indicates no effect (Hosmer *et al*., 2013)

Since there were many explanatory variables, the research employed "Stepwise Regression Method" that is used mainly to automatically filter out the insignificant variables and end up with the best fit model. The statistical significance of the effect of each predictor is tested by the Wald test. The model fit is evaluated using Omnibus test; which tests the overall model statistical significance, Pseudo R^2, whose interpretation is similar to the R^2 in linear regression model, specifically it measures the amount of variability in the log-odds of the outcome variable explained by the regression line, and Hosmer-Lemeshow test, which test the equality between the observed and the estimated outcome (Agresti, 2013; Hosmer *et al*., 2013). All statistical analyses were performed using Stata 17. A *p*-value of less than 0.05 was considered statistically significant. Data used in this research is available on the website of the World Bank Group (Development Research Group..., 2022).

RESULTS AND DISCUSSION

This section presents the results of the distribution of financial exclusion and financial well-being dimensions according to socioeconomic characteristics of respondents followed by concentration curves and concentration index results and ended with binary logistic regression model results

Distribution of financial exclusion and financial well-being dimensions according to the socioeconomic characteristics of respondents. The percentages of financially excluded individuals with respect to the dimensions of financial exclusion and financial well-being based on their socioeconomic characteristics is shown in Table 2.

Table 2. The percentage distribution of financial exclusion dimensions, and financial well-being dimensions according to the socioeconomic characteristics of respondents

Socioeconomic characteristics	Financial exclusion dimensions		Financial well-being dimensions		
	Access exclusion	Usage exclusion	Financial resilience	Financial worry	Total
	Unbanked (Percentage of adults)	Percentage of respondents with inactive accounts	Percentage of respondents who have resilience by any source other than a financial institution	Percentage of respondents who have any financial worry	N
Income					
Poorest 20%	76.7%	88.7%	88.7%	97.5%	159
2nd quintile	80.0%	88.7%	93.3%	95.3%	150
3rd quintile	73.3%	79.0%	91.8%	92.8%	195
4th quintile	67.6%	76.7%	87.6%	93.3%	210

Table 2. Continued

Socioeconomic characteristics	Financial exclusion dimensions		Financial well-being dimensions		
	Access exclusion	Usage exclusion	Financial resilience	Financial worry	Total
	Unbanked (Percentage of adults)	Percentage of respondents with inactive accounts	Percentage of respondents who have resilience by any source other than a financial institution	Percentage of respondents who have any financial worry	N
Income					
Richest 20%	44.6%	55.4%	75.8%	84.1%	289
χ^2 (*df*)	43.1(4)*	36.5(4)*	27.2(4)*	25.2(4)*	
Gender					
Male	61.1%	70.8%	86.7%	89.6%	517
Female	70.0%	78.8%	85.4%	93.6%	486
χ^2 (*df*)	1.13(1)*	0.93(1)*	0.08(1)*	0.43(1)*	
Place of residence					
Urban	64.8%	74.0%	86.1%	91.2%	893
Rural	70.0%	80.0%	85.5%	94.5%	110
χ^2 (*df*)	149.7(1)*	180.5(1)*	159.4(1)*	175.3(1)*	
Working Status					
Working / Employed	61.7%	71.1%	85.4%	93.0%	460
Not Working/ Unemployed	68.5%	77.7%	86.6%	90.2%	543
χ^2 (*df*)	0.11(1)*	0.19(1)*	0.85(1)*	1.49(1)*	
Educational Attainment[1]					
Completed primary school or less	65.7%	76.8%	85.8%	94.5%	379
Completed secondary school	70.6%	78.4%	88.9%	91.3%	496
Completed tertiary education or more	43.7%	53.2%	75.4%	83.3%	126
χ^2 (*df*)	17.9(2)*	24.7(2)*	47.4(2)*	55.0(2)*	
Age Intervals					
15-29	85.3%	90.8%	92.7%	86.4%	273
30-39	70.2%	80.2%	86.8%	96.9%	258
40-49	62.1%	72.0%	85.1%	95.0%	161
50-59	57.9%	68.6%	83.0%	91.2%	159
60 +	32.9%	45.4%	77%	88.2%	152
χ^2 (*df*)	126.3(4)*	114.5(4)*	21.8(4)*	23.5(4)*	
Total	**65.4%**	**74.6%**	**86.0%**	**91.5%**	**1,003**

Note: [1] – the total doesn't equal to 1003 because of the existence of missing values within this variable; * – p-value < 0.05
Source: calculated by the authors depending on STATA software output

With reference to Table 2, the findings showed that regarding "income", the most financially excluded individuals lie in the "Poorest 20%" since 76.7% of them lacked access and are unbanked while only 44.6% among the richest quintile are financially excluded. Additionally, results reflected that among this category of respondents who already had access, 88.7% were with inactive accounts. With respect to FWB dimensions, results showed that 88.7% of the poorest 20% faced financial resilience whereas 97.5% faced financial worry. Concerning "Gender", findings demonstrated that "females" are the most financially excluded, the percentage of unbanked females is higher than that of unbanked males by 9.9% Moreover, results reflected that the percentage of females wth inactive accounts exceeded that of males with 8%. The results showed that females experienced lower financial resilience than their male counterparts by 1.3% whereas they experienced higher financial worry by 4%.

It can also be noted that rural residents are the most financially excluded ones as almost 70% of rural respondents tended to be unbanked adults. Among those who opened accounts, 80% of rural respondents tended to have inactive accounts. The findings in Table 2 showed that individuals in rural areas experienced lower financial resilience than their counterparts in urban areas by 0.6% whereas they experienced higher financial worry by 3.3%. Pertaining to the "Working status", the results demonstrated that the unemployed are more financially excluded relative to the employed

ones since 68.5% among unemployed respondents tended to be unbanked adults. Furthermore, 77.7% of unemployed respondents suffers usage exclusion. The unemployed people experienced higher financial resilience than their counterparts by 1.2% while interestingly, 93% of employed respondents experienced financial worry The findings showed that least financially excluded segment were the highly educated individuals. It appeared that percentage of unbanked adults for the highly educated ones were found to be less excluded than the less educated ones by almost 22%. Moreover, the percentage of the highly educated respondents who have inactive accounts was lower than those who were less educated by 23%. And the highly educated individuals experienced higher financial resilience than their less educated counterparts by around 12% whereas they experienced higher financial worry by around 9.5%. With respect to "age", the findings revealed that financial exclusion is higher among younger individuals who experienced the highest rates of both access and usage exclusion. On the other hand, younger individuals – particularly the youth – demonstrated higher level of financial resilience than older ones, while the elderly experienced the highest degree of financial worry.

Socioeconomic inequalities in financial exclusion measured by concentration curves and concentration index

Each of the following figures shows the results of the concentration curves followed by the concentration index value, elaborating the inequality in financial exclusion with respect to each of the previously mentioned socioeconomic characteristics in both dimensions of financial exclusion – access and broadly defined usage – as well as specific purposes of using financial services. Concerning income inequality, the findings showed a statistically significant inequality in both dimensions of financial exclusion – access and usage – across income groups in Egypt, with values of the concentration index of 0.21 and 0.27 respectively which reflects a high level of inequality. These positive values indicate that both access and usage are highly concentrated among higher-income groups, suggesting that lower-income individuals face a higher degree of financial exclusion relative to their richer counterparts as shown in Figure 1 which corresponds to the results of Table 2. By digging deeper into the specific purposes of using financial services, results revealed that there is a statistically significant inequality in the use of financial services for saving and receiving money (CI = 0.37 and 0.2 respectively), indicating higher concentration among higher-income individuals. In contrast, Figure 1 shows that richer individuals were found to be more excluded when it comes to using financial services for the purpose of borrowing since richer individuals tend to borrow less (CI = –0.2) indicating higher concentration among the poorest. Finally, results showed no statistically significant inequality among income groups in the use of financial services for sending money.

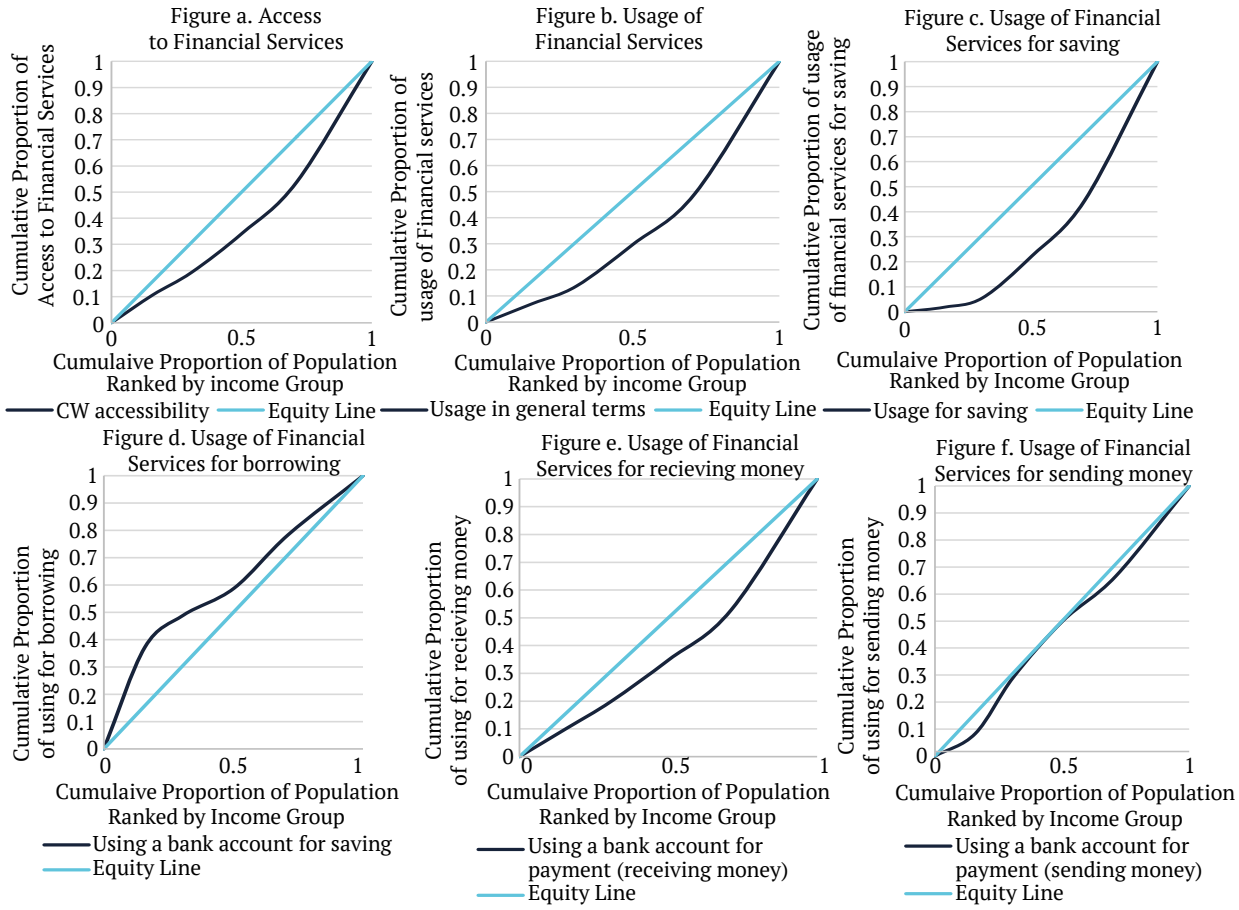

Figure 1. Concentration curves of the dimensions of financial exclusion across income groups

Source: calculated by the authors depending on STATA software output

The second classification is concerned with measuring the concentration of financial exclusion across gender. The findings also revealed a statistically significant inequality in both dimensions of financial exclusion across gender with greater exclusion of females that conforms with results of Table 2. Notably, the degree of concentration differs in each dimension of financial exclusion. There is a greater concentration with respect to "usage" (CI = 0.107) than "access" (CI = 0.0814) dimension which implies that females experienced moderate level of inequality concerning "usage" while low level of inequality concerning "access" of financial services. With respect to the specific purposes of using financial services, findings further demonstrated that females also suffered from more financial exclusion with the exception of "usage for the purpose of sending money" where males exhibited higher level of financial exclusion. Concerning the specific purposes of using financial services, the highest degree of concentration is found in the purpose of borowing (CI = 0.2), followed by "saving" (CI = 0.17) then "receiving money" (0.13) (Fig. 2). To put it differently, the results reflected high level of inequality for the purpose of "borrowing" while moderate level of inequality for both the purposes of "saving" and "receiving money".

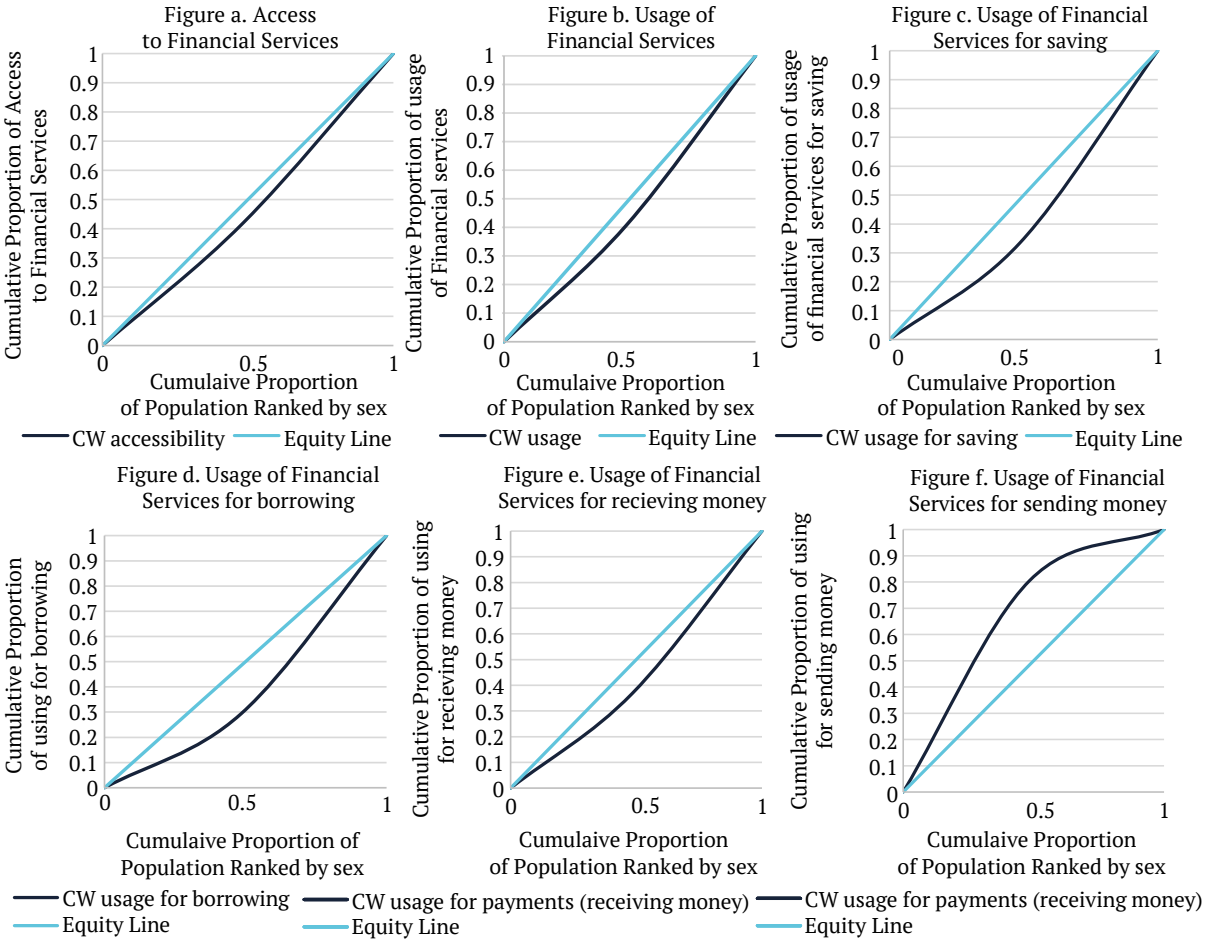

Figure 2. Concentration curves of the dimensions of financial exclusion across gender
Source: calculated by the authors depending on STATA software output

Third, with respect to the place of residence, the findings showed no statistically significant concentration among the Egyptians in account ownership (access to financial services) whereas there was a statistically significant inequality when it comes to the use of financial services as shown in figures. This indicates that rural population experienced higher degree of financial exclusion in using financial services relative to their urban counterparts (CI = 0.0633). It is worth mentioning that individuals in rural area faced low level of inequality in using financial services relative to their urban counterparts. Concerning the specific purposes of using financial services, the findings found no statistically significant concentration for any these purposes across rural and urban regions (Fig. 3).

Fourth, regarding the working status of respondents, the findings also showed a statistically significant inequality in both dimensions of financial exclusion – namely, access and broadly defined usage – with concentration index of 0.0653 and 0.0874 respectively which reflected low level of inequality. With respect to the specific purposes of using financial services, the findings demonstrated a statistically significant inequality in the distribution of using a bank account for only the purpose of "receiving money" with a concentration index of 0.0832 which reflected low level of inequality whereas no statistically significant concentration was found for any of the rest purposes (Fig. 4).

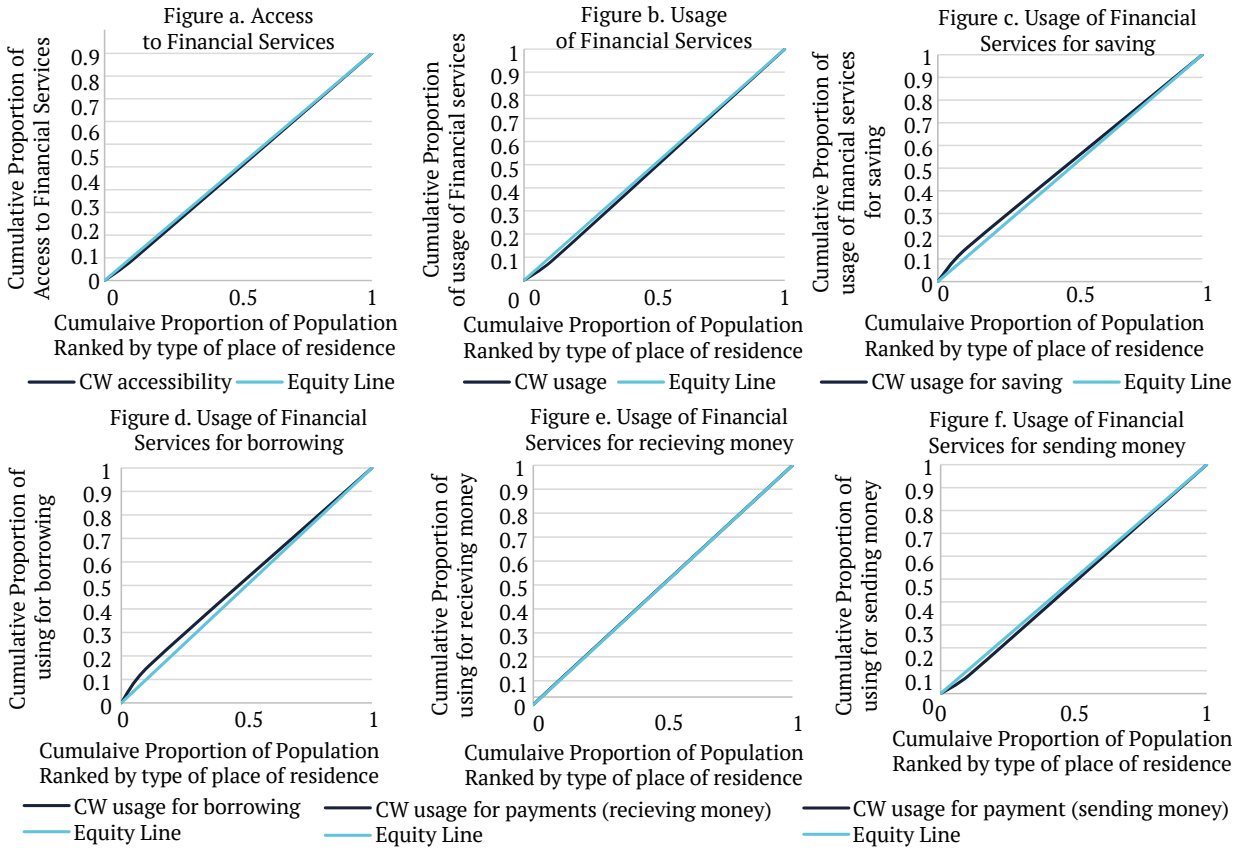

Figure 3. Concentration curves of the dimensions of financial exclusion with respect to the place of residence
Source: calculated by the authors depending on STATA software output

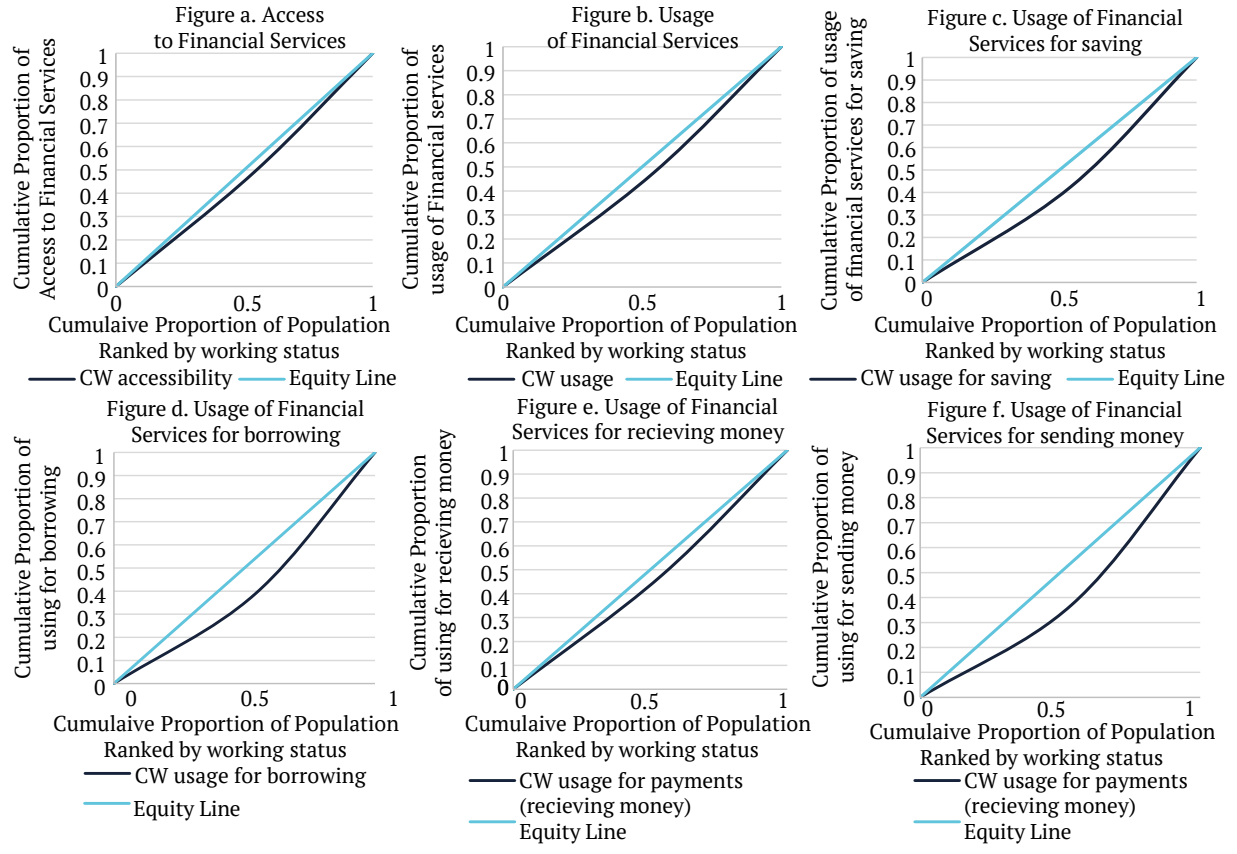

Figure 4. Concentration curves of the dimensions of financial exclusion ranked by working status
Source: calculated by the authors depending on STATA software output

Fifth, findings indicated a statistically significant inequality in the distribution of both dimensions of financial exclusion among the Egyptians ranked by educational attainment. The positive values of the index reflected that, in general, less educated individuals are more financially excluded compared to highly educated ones which agrees with results of Table 2. Crucially, there is a greater concentration with respect to the "usage" (CI = 0.1135) than "access" (CI = 0.0692) dimension which implies that less educated individuals experienced higher degree of financial exclusion when it comes to using financial services as opposed to account ownership. Stated otherwise, less educated individuals faced low level of inequality concerning "access" of financial services, but moderate level concerning "usage". Regarding the specific purposes of using financial services, the findings demonstrated a statistically significant inequality in the distribution of using a bank account only for the purpose of saving with a concentration index of 0.4122. This postive value of the CI reflects a high level of inequality indicating greater exclusion of less educated individuals in Egypt. On the other hand, no statistically significant concentration was found for any of the rest purposes (Fig. 5).

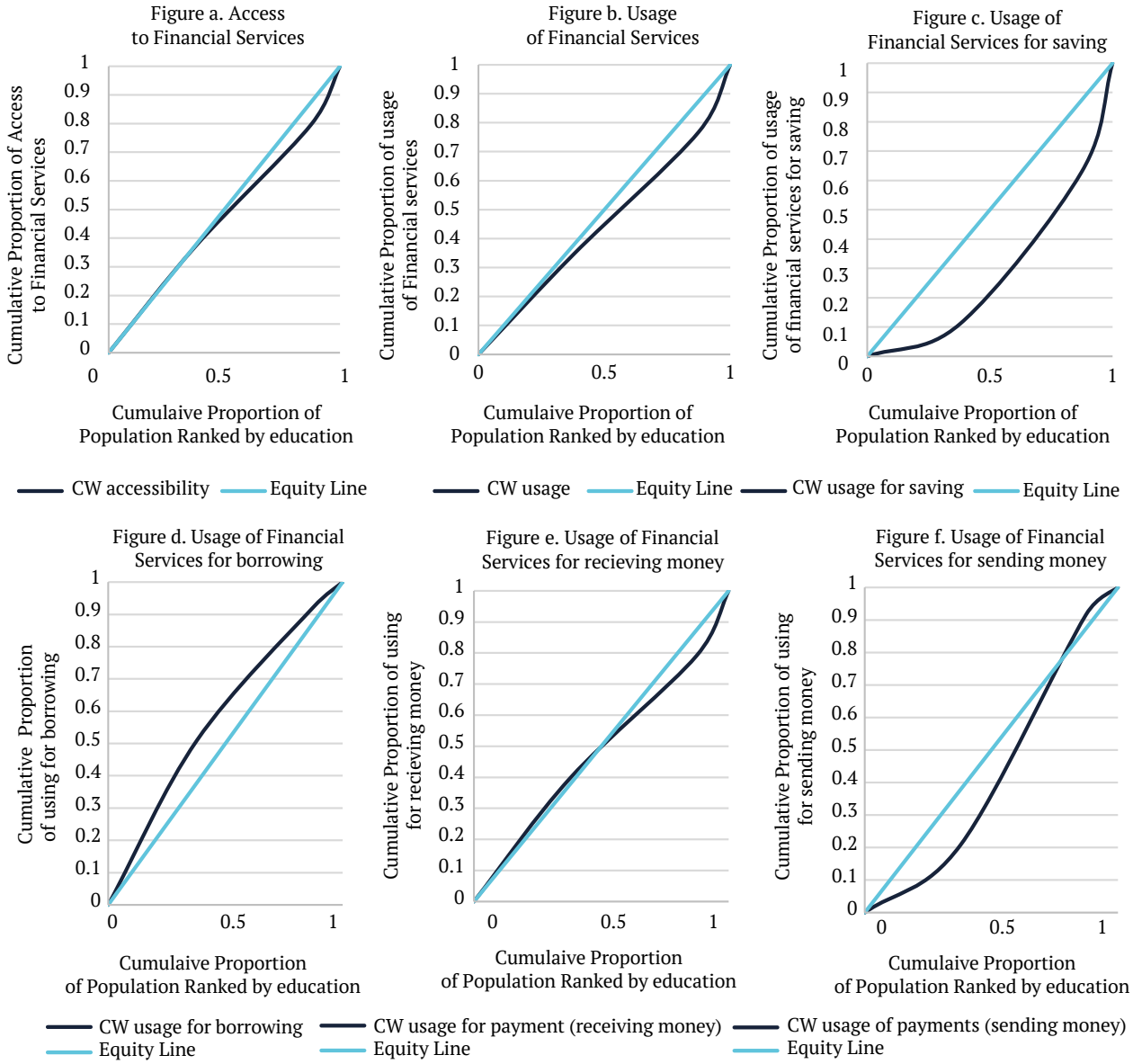

Figure 5. Concentration curves of the dimensions of financial exclusion with respect to education

Source: calculated by the authors depending on STATA software output

The final classification is concerned with measuring the concentration of financial exclusion with respect to age. The findings further showed a statistically significant inequality in both dimensions of financial exclusion across age with greater exclusion of young respondents which agrees as well with results of Table 2. With respect to the specific purposes of using financial services, findings further demonstrated that youth also faced more financial exclusion in "usage for the purpose of receiving money", whereas the elderly exhibited higher level of financial exclusion when it comes to "usage for the purpose of saving". On the other hand, inequality in usage for the purpose of borrowing and sending money were found to be statistically insignificant (Fig. 6).

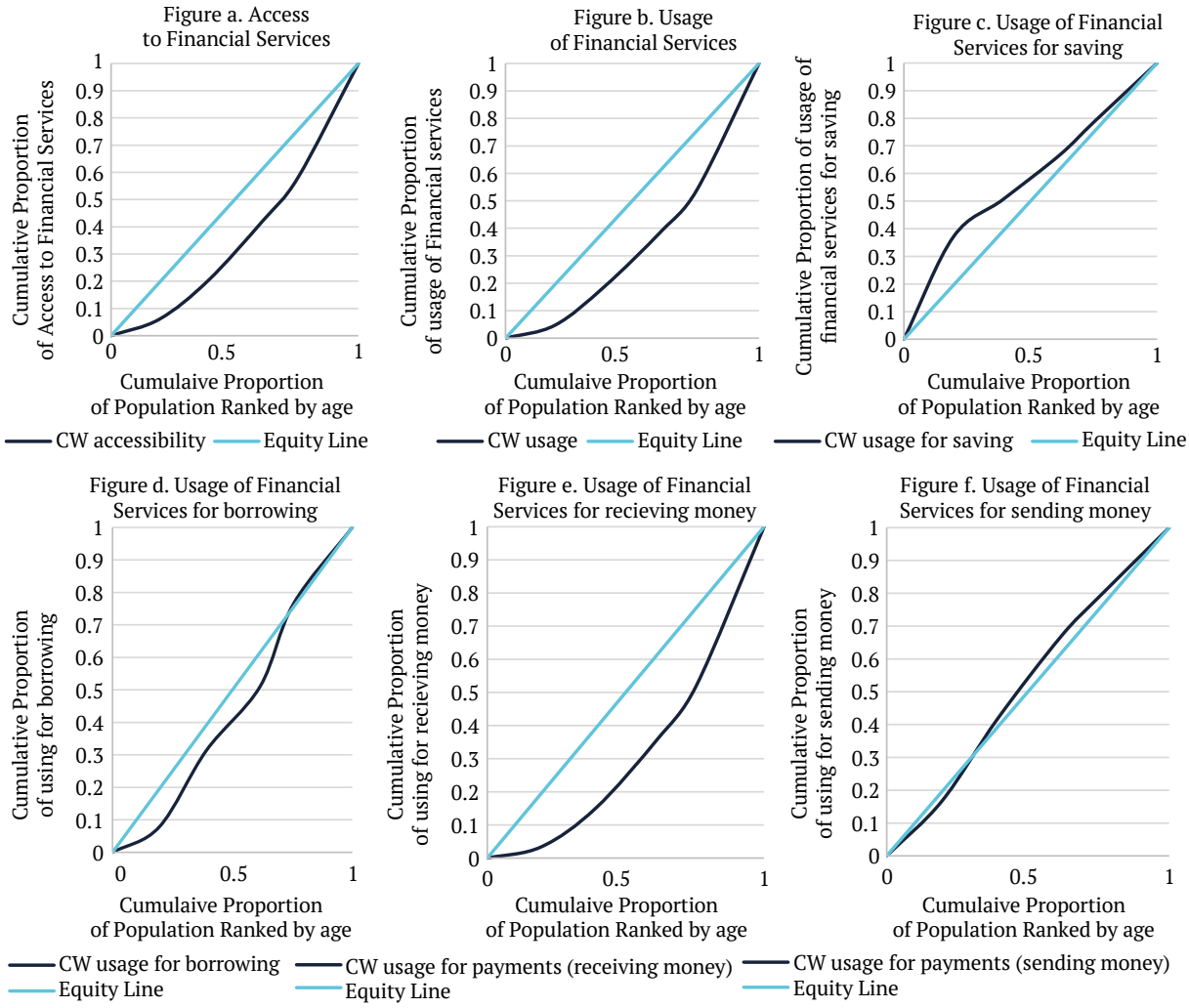

Figure 6. Concentration curves of the dimensions of financial exclusion across age
Source: calculated by the authors depending on STATA software output

Inspite of the greater concentration with respect to the "usage" than "access" dimensions (CI = 0.3167, CI = 0.2768 respectively), both fell under the category of high level of inequality among the youth respondents. Concerning the specific purposes of using financial services, the degree of concentration in "usage for the purpose of receiving money" recorded 0.3541 which indicates higher exclusion among the young respondents while -0.1825 for "usage for the purpose of saving" indicating higher exclusion among the elder respondents.

Determinants of financial resilience and financial worry

This section starts with presenting the goodness of fit measures followed by an interpretation of the regression model (Table 3).

Table 3. The Goodness-of-fit measures of the financial resilience model

Test	Chi-square	Df	Significance
Omnibus test	85.988	6	0.000
Hosmer and Lemeshow Test	5.805	8	0.669
Pseudo R^2	**Value**		
Cox & Snell R Square	0.082		
Nagelkerke R Square	0.148		

Source: calculated by the authors depending on STATA software output

The Omnibus test showed that the model is statistically significant at 0.01 level of significance. The Hosmer and Lemeshow test assured that the model has acceptable predictive ability since its null hypothesis stated that there is no difference between the observed and predicted values of the outcome variable. The pseudo R^2 ranged from nearly 0.1 to 0.15 which is not acceptable since the acceptable values of these measures is 0.2 – 0.4 (Hagle & Mitchell, 1992). Consequently,

this result may be due to the limited predictors and the absence of other behaviour-related factors that could explain the resilience on the individual level more appropriately. Results in Table 4 showed that when the respondent isn't using their account for saving, this is accompanied with lower odds for being financially resilient (Exp(β) = 0.14, P-value < 0.01). As the respondent's age increases, the odds for being financially resilient increases (Exp(β) = 1.02, P-value < 0.01).

Table 4. The determinants of financial resilience

Variables	*β*	Sig.	*Exp(β)*	95% of *Exp(β)*	
				Lower	Upper
Usage for saving **(ref.*: yes)**	-1.963	0.000	0.140	0.077	0.255
Respondent age	0.017	0.004	1.018	1.006	1.030
Within-economy household income quintile **(ref.*: richest)**		0.002			
Within-economy household income quintile (1)	-0.524	0.079	0.592	0.330	1.062
Within-economy household income quintile (2)	-1.135	0.002	0.321	0.157	0.659
Within-economy household income quintile (3)	-0.994	0.001	0.370	0.201	0.683
Within-economy household income quintile (4)	-0.615	0.020	0.540	0.321	0.909

Note: ref. refers to the reference category of the variable
Source: calculated by the authors depending on STATA software output

The income level of the respondents showed a significant effect on the odds of being financially resilient, if the within-economy household (HH) income refers that the HH is poorest, the odds of being financially resilient became 0.6 times the odds of the richest HH. The odds of being financially resilient of the poorer HH and the middle class HH are about one third of the odds of the richest HH, while the odds of the rich HH is about half the odds of the richest HH. Moreover, the results showed that the individuals' access of financial services and institutions, the respondents' usage for borrowing, usage for payments, gender, educational attainment, the working status and the type of place of residence are not statistically significant predictors. The research also employed "Stepwise Regression Method" that is used in the previous model for the same reason mentioned above (Table 5).

Table 5. The Goodness-of-fit measures of the financial worry model

Test	Chi-square	df	Sig.
Omnibus test	76.438	8	0.000
Hosmer and Lemeshow Test	6.552	8	0.586
Pseudo R^2	**Value**		
Cox & Snell R Square	0.074		
Nagelkerke R Square	0.167		

Source: developed by the authors

The Omnibus test showed that the model is statistically significant at 0.01 level of significance. The Hosmer and Lemeshow test assured that the model has acceptable predictive ability since its null hypothesis stated that there is no difference between the observed and predicted values of the outcome variable. The pseudo R^2 ranged from nearly 0.1 to 0.17 which, by approximation, is acceptable. Results in Table 6 showed that when the respondent isn't using his/her account for saving, this is accompanied with very elevated odds for having financial worry (Exp(β) = 6.14, P-value < 0.01). The results also showed that female respondents have higher odds of being financially worried if compared to male respondents (Exp(β) = 2.7, P-value < 0.01). As the respondent's age increases, the odd for having financial worry increases slightly (Exp(β) = 1.02, P-value < 0.01). The respondents' working status showed a illogical result since the odds of having financial worry increases among the working group rather than the non-working group (Exp(β) = 2.9, P-value < 0.01). Although it may be explained by the socio-economic framework. Employment does not always guarantee financial security, especially in communities marked by low wages and income volatility. Employed individuals may have heightened financial obligations, exacerbating perceived financial stress, whereas unemployed individuals may depend on familial or social assistance. This pattern aligns with the notion of working poverty (World Bank, 2020).

Table 6. The determinants of the financial worry

Variables	*(β)*	Sig.	*Exp(β)*	95% of *Exp(β)*	
				Lower	Upper
Usage for saving **(ref.*: yes)**	1.815	0.000	6.143	3.169	11.905
Respondent sex **(ref.*: male)**	0.990	0.000	2.691	1.547	4.680
Respondent age	0.019	0.010	1.019	1.004	1.034
Respondent working status **(ref.*: not working)**	1.066	0.000	2.904	1.652	5.104
Within-economy household income quintile **(ref.*: richest)**		0.000			
Within-economy household income quintile (1)	1.925	0.004	3.535	1.502	8.320
Within-economy household income quintile (2)	1.263	0.004	2.694	1.366	5.315
Within-economy household income quintile (3)	0.991	0.001	2.993	1.537	5.828
Within-economy household income quintile (4)	1.096	0.004	3.535	1.502	8.320

Source: calculated by the authors depending on STATA software output

Regarding the income level of the respondents, results showed a significant effect on the odds of being financially worried, if the within-economy household (HH) income refer that the HH is poorest or rich, the odds of having financial worries is 3.5 times the odds of the richest HH. The odds of being financially worried of the poorest HH and the middle class HH are about three times the odds of the richest HH. The results showed that the individuals' access of financial services and institutions, the respondents' usage for borrowing, usage for payments, educational attainment, and the type of place of residence are not statistically significant predictors of being very or somewhat worried. The sample consists of 1,003 respondents. the research investigated the socioeconomic inequalities within the distribution of the financial exclusion in Egypt by identifying the most disadvantaged subgroups of the population using the concentration index and concentration curves. Then, it employed Binary Logistic Regression Model to measure the effect of financial exclusion on financial well-being controlling for the socioeconomic characteristics of respondents. The results showed that 65.4% of the population has no access to any financial institution, 74.6% are financially excluded with respect to usage, 86% had financial resilience, and 91.5% had experienced any financial worries (Table 7).

Table 7. Summary of concentration index findings

	Access Exclusion	Usage Exclusion	Usage Exclusion: Saving	Usage Exclusion: Borrowing	Usage Exclusion: Sending Money	Usage Exclusion: Receiving Money
Income	High	High	High	Moderate (Rich)	Insignificant	High
Gender	Low	Moderate	Moderate	High	High (Men)	Moderate
Place of Residents	Insignificant	Low	Insignificant	Insignificant	Insignificant	Insignificant
Working Status	Low	Low	Insignificant	Insignificant	Insignificant	Low
Education	Low	Moderate	High	Insignificant	Insignificant	Insignificant
Age	High	High	Old moderate	Insignificant	Insignificant	High

Source: developed by the authors

Concerning income inequality, the findings showed a statistically significant high-level of inequality in both dimensions of financial exclusion- access and usage – across income groups in Egypt. This indicates that both access and usage are highly concentrated among higher-income groups, suggesting that lower-income individuals face a higher degree of financial exclusion relative to their richer counterparts. This result goes along with A. Rashdan & N. Eissa (2020) as they mentioned in their papers that already the poor have suffered from insufficient funds, so this hindered them from being banked ones. While the richest suffered less. On the other hand, the richest people are less financially excluded as they are considered the preferred target group for formal financial institutions because of their higher credit ratings, lower probability of defaults, and more stable and well-recognised income which goes along with M. Esquivias *et al*. (2020). Additionally, this result is aligned with P. Ozili (2021) that stated that they lacked access to modern ICT infrastructure which hinders them from maintaining online for a reasonable period.

As for the concentration of financial exclusion across gender, the findings revealed a statistically significant inequality in access and general usage across gender with greater exclusion of females that conforms with percentage distribution. The findings also showed that females also suffered from more financial exclusion in all financial

usage specific purposes with the exception of "usage for the purpose of sending money" where males exhibited higher level of financial exclusion. In the report of the Central Bank of Egypt (2023), the authors mentioned that females preferred to use informal channels in using funds due to low required guarantees on the contrary of formal channels. The findings showed no statistically significant concentration among the Egyptians disaggregated by the type of place of residence (urban vs. rural) in account ownership (access to financial services) whereas there was a statistically significant inequality when it comes to the use of financial services. The results revealed that rural population experienced higher degree of financial exclusion in using financial services relative to their urban counterparts, that is aligned with T. Hassouba (2025) where she has mentioned that the coverage of banks branches in rural areas is less than that in urban ones. Pertaining to the "Working status", the findings showed a statistically significant inequality in both dimensions of financial exclusion – access and broadly defined usage – which reflected low level of inequality. With respect to the specific purposes of using financial services, the findings demonstrated a statistically significant, yet minimal, inequality in the distribution of using a bank account for only the purpose of "receiving money" which reflected low level of inequality whereas no statistically significant concentration was found for any of the rest purposes.

The level of educational can be considered as a competitive advantage of the individuals since the positive values of the concentration index reflect that, in general, less educated individuals are more financially excluded compared to highly educated ones. Crucially, there is a greater concentration with respect to the "usage" than "access" dimension which implies that less educated individuals experienced higher degree of financial exclusion when it comes to using financial services as opposed to account ownership. Stated otherwise, less educated individuals faced low level of inequality concerning "access" of financial services, but moderate level concerning "usage", which matches with the results of A. Rashdan & N. Eissa (2020) that attributed the reason to the intensified financial awareness and financial literacy among all strata of the population. Regarding the specific purposes of using financial services, the findings demonstrated a statistically significant inequality in the distribution of using a bank account only for the purpose of saving.

The final inequality measure was concerned with measuring the concentration of financial exclusion with respect to age. The findings further showed a statistically significant inequality in access and general usage – across age with greater exclusion of youth. Findings demonstrated that youth also faced more financial exclusion in "usage for the purpose of receiving money", whereas elder people exhibited higher level of financial exclusion when it comes to "usage for the purpose of saving". On the other hand, inequality in usage for the purpose of borrowing and sending money were found to be statistically insignificant. Results of the regression model showed that financial usage is a significant determinant of financial resilience since if the respondent isn't using the bank account, the respondent has lower odds for being financially resilient. This result is aligned with the findings of F. Hamid *et al*. (2023) who showed that, in emerging economies, higher levels of financial inclusion in terms access and usage increases the probability of being financially resilient. The respondent's age also has shown to be a significant determinant of financial resilience, whereas the respondents' age increases, the odds for being financially resilient increases. The income level of the respondents showed a significant positive effect on the odds of being financially resilient. These results are consistent with previously introduced findings of A. Tinta *et al*. (2022), and R. Hassan *et al*. (2025). While the results showed that the individuals' access of financial services and institutions, the respondents' usage for borrowing, usage for payments, gender, educational attainment, the working status and the type of place of residence are not statistically significant explanatory variables of financial resilience (Table 8).

Table 8. Summary of regression results

	Financial resilience	**Financial Worry**
Income	Significant direct	Significant inverse
Age	Significant direct	Significant direct
Gender	Insignificant	Significant females higher worry
Education	Insignificant	Insignificant
Working status	Insignificant	Significant employed higher worry
Place of residence	Insignificant	Insignificant
Access	Insignificant	Insignificant
Usage for saving	Significant not using = lower resilience	Significant not using = high worry
Usage for borrowing	Insignificant	Insignificant
Usage for payment (sending and receiving)	Insignificant	Insignificant

Source: developed by the authors

As for the determinants of financial worries, the results also showed that female respondents have higher odds of being financially worried if compared to male respondents and as the respondent's age increases, the odd for having financial worry increases, but slightly. The respondents' working status showed a strange result since the odds of having financial worry increases among the working group rather than the non-working group. Regarding the income level of the respondents, results showed a significant inverse effect of income on the odds of being financially worried, that is as the income level decreases, the odds of experiencing financial worries increases. These results are consistent with the determinants of financial worries studies by F. Magwegwe *et al*. (2020),

and W. Shair *et al*. (2025). The results showed that the individuals' access of financial services and institutions, the respondents' usage for borrowing, usage for payments, educational attainment, and the type of place of residence are not statistically significant predictors of being very or somewhat worried. Based on the results discussed, the following table presents the comprehensive action plan (Table 9).

Table 9. Comprehensive action plan

Recommendation	Execution Authority	Executive Action
At Macro-level		
Updating the current National Financial Inclusion Strategy) that would be tailored to the specific needs of each marginalised group	■ Central Bank of Egypt (CBE) ■ Ministry of Finance ■ Financial Regulatory Affairs	■ Developing new financial products ■ Facilitating the legal and financial procedures ■ Determining the suitable channels to reach out for them (as brochures, Traditional and Modern Social Media Platforms)
Catalysing the shift to cashless economy on both government and citisens' scales	■ Egyptian Banking Institute ■ National Council for Payments (NCP) ■ Ministry of Communications and Information Technology (MCIT)	■ Ongoing upgrading National Payments Systems ■ Incentivising wider adoption of electronic payments
Fostering investments on campaigns that reap the fruits of financial inclusion through enhancing Public-Private Partnership (PPP)	■ Public authorities could be represented in Ministry of Culture and Maspero ■ Private entities could be represents in major advertising companies in Egypt through CSR	■ Applying a marketing strategy that employs social media platforms as: Facebook, Instagram, Twitter, LinkedIn to display ads and marketing messages
At Micro-level		
Concerning Poor people		
Designing a wide variety of low-cost, flexible financial products and promoting incentive mechanisms to attract a greater segment of the poor	■ Ministry of Social Solidarity ■ Banks and other financial institutions	■ Offering more micro-savings, micro-insurance, and small-denomination credit channels ■ Introducing reduced fees or reward programs for using digital payments for individuals receiving social security assistance and other low-income groups ■ Disseminating financial education commonly attended places such as literacy classes through bank representatives who would raise awareness of financial services and their benefits
Concerning Females		
Enhance generally "Women Empowerment' through financial inclusion and especially entrepreneurs under the slogan Workshops for Women entrepreneurs on in Work areas"	■ National Council for Women (NCW) ■ Association for the Development and Enhancement of Women (ADEW) ■ UN Women Egyptian Office	■ Organising a series of workshops to include women entrepreneurs under the slogan of «Women Inclusion through Financial Inclusion Tools» which can be stated as a prerequisite for taking the license of opening a company or project ■ Designing gender-sensitive financial products that meet the specific needs of women especially informal workers and single mothers
	■ National Council for Childhood and Motherhood (NCCM) ■ USAID Egypt – Gender and Women's Empowerment Programs	■ Arranging free workshops for women in attractive places that concern women as gyms, beauty centres and women supports day under their sponsor ■ Employ free ads in social media platforms (Twitter, Facebook and Instagram)
Concerning rural people		
Broadening rural people's understanding of financial services and updates related to newly introduced products	■ Banks and financial institutions (mainly Nasser Social Bank) ■ Civil society organisations (as Caritas Egypt for outreach programs)	■ Reinforcing institutional capacity within banks by employing specialised staff dedicated to help rural people in accessing or using financial services and understanding information about financial services and the required procedures ■ Fostering partnerships with civil society organisations and agricultural cooperatives to promote financial education through disseminating attractive and simple videos (step-by-step) that help them use financial services ■ Strengthening the engagement of respected community leaders to raise financial awareness in rural communities

Table 9. Continued

Recommendation	Execution Authority	Executive Action
Concerning non-working people		
Enhancing build of financial skills and widening the awareness about financial benefits of financial products which at the end promotes learning-by-doing method	■ Banks and other financial institutions ■ Microenterprise agencies ■ Ministry of Manpower	■ Depending on trained volunteers in collaboration with banks and under the auspices of the Ministry of Manpower to offer assistance and support about financial services that best suit job seekers ■ Strengthening mobile-based financial education interactive tools that teach entrepreneurship and financial literacy for attracting entrepreneurs ■ Greater Engagement of local NGOs to offer support and raise financial awareness to unemployed people with entrepreneurial potential
Concerning less educated people		
Put into practice know your customer rules	■ Representatives from banks and NGOs ■ Ministry of Communications and Information Technology (MCIT)	■ Increase awareness through offering a simplified mechanisms for complains in Arabic language ■ Regular SMSs about the tips, benefits and usage of financial products ■ Use suitable social media tools to offer stories about successful micro businesses that expanded after inclusion of financial banking products
Concerning Youth		
Designing a campaign under the slogan of "Financial Services for all – No one is left behind"	■ Ministry of Youth and Sports	■ Arranging a sports competition day at universities and clubs ■ Creating posters and advertisements on various social media platforms, shopping malls, universities, clubs … etc. ■ Spreading more booths inside universities to raise greater financial awareness and offer less costly financial products with simplified procedures

Source: developed by the authors

Hence, the study offers a comprehensive set of recommendations on both scales (macro-level and micro-level) that can be applied through offering a concrete action plan that elaborates actionable steps to enhance Egypt to robust financial inclusion through coordination among various concerned execution authorities that put it into executive actions.

CONCLUSIONS

In this research, the authors address financial exclusion. Financial exclusion between various socioeconomic classes is still evident despite the progress achieved. Regarding the first objective findings of the descriptive statistical analysis showed statistically significant difference in the percentages of financially excluded individuals concerning the dimensions of financial exclusion and financial well-being based on their socioeconomic characteristics With respect to access exclusion, results revealed that 76.7% of the poorest 20%, 70% of the females, 70% of the rural, 68.5% of the unemployed, 65.7% of the uneducated and 85.3% of the young respondents were unbanked. On the other hand, concerning usage exclusion, results revealed that 88.7% of the poorest 20%, 78.8% of the females, 80% of the rural, 77.7% of the unemployed, 76.8% of the uneducated and 90.8% of the young respondents had inactive accounts. Concerning the concentration curves and index, findings revealed the prevalence of socioeconomic inequality across both dimensions of financial exclusion except for access exclusion in the place of residence. Regarding the specific purposes of using financial services, socioeconomic inequality was evident with the purpose of saving among the poorest 20%, females, least educated and older individuals. Furthermore, the richest individuals as well as females suffered from higher exclusion with respect to the use of financial services for the purpose of borrowing whereas the poorest individuals, females, the unemployed, and youth suffered from higher exclusion pertaining to the purpose of receiving money. Finally, men appeared the most disadvantaged group who experienced exclusion concerning the purpose of sending money. Regarding the second objective of this research, results of the first regression model indicated that income and age had significant positive effect on financial resilience whereas usage exclusion for the purpose of saving had a significant negative effect. Results of the second model showed a significant positive effect of age and working status on financial worry, but a significant negative effect of income. In addition, being a female is associated with higher financial worry. Future research can investigate the interrelationships among financial inclusion, gender inequality, and incorporate in-depth entrepreneurship which may contribute to closing the gender gap and reaching out for more marginalised groups. In addition, another area of

research may explore the role of digital financial inclusion in strengthening financial health.

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Дослідження фінансової ексклюзії крізь призму соціально-економічної нерівності: наслідки для фінансового добробуту

Анотація. Метою дослідження було виміряти рівень соціально-економічної нерівності, що виникає внаслідок фінансової ексклюзії, а також оцінити її вплив на фінансовий добробут населення залежно від різних соціально-економічних характеристик. У дослідженні використано дані опитування Global Findex 2021 року, оприлюдненого у 2023 році, на вибірці з 1003 респондентів. Нерівність фінансової ексклюзії вимірювалася за допомогою індексу концентрації та кривих концентрації. Для аналізу впливу фінансової ексклюзії на фінансовий добробут застосовано модель бінарної логістичної регресії. Результати дослідження показали, що соціально-економічна нерівність виступає ключовим чинником фінансової ексклюзії, яка найбільше проявляється серед бідних, жінок, сільського населення, безробітних, осіб з низьким рівнем освіти та молоді. Щодо ексклюзії доступу, встановлено, що 76,7 % найбідніших 20 %, 70 % жінок, 70 % сільського населення, 68,5 % безробітних, 65,7 % неосвічених та 85,3 % молодих респондентів не мають банківських рахунків. Водночас щодо ексклюзії використання з'ясовано, що 88,7 % найбідніших 20 %, 78,8 % жінок, 80 % сільського населення, 77,7 % безробітних, 76,8 % неосвічених і 90,8 % молодих респондентів мають неактивні рахунки. Крім того, результати регресійного аналізу показали, що дохід, вік і ексклюзія використання з метою заощадження мають статистично значущий вплив на фінансову стійкість. Водночас ексклюзія використання з метою заощадження, вік, зайнятість і стать істотно впливають на фінансову тривожність. Це дослідження робить вагомий внесок у наукову літературу, заповнюючи прогалину в розумінні соціально-економічної нерівності, пов'язаної з фінансовою ексклюзією, оскільки дозволяє ідентифікувати групи фінансово виключених осіб. У роботі запропоновано план дій, що містить конкретні кроки, спрямовані на зменшення фінансової ексклюзії та підвищення фінансового добробуту населення в Єгипті

Ключові слова: маргіналізація від формальних фінансових інституцій; фінансова стійкість; фінансова тривожність; демографічні характеристики; індекс концентрації; бінарна логістична регресія