

Financial Inclusion of Female Social Commerce Entrepreneurs in Light of the Lebanese Economic, Financial, and Sanitary Crisis

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Abstract

Social commerce in Lebanon is on the rise in light of the sanitary, financial, and economic crisis that the country has been facing. Female entrepreneurs are increasingly investing in this informal market. This paper aims to study whether social commerce, in a turbulent context, paves the way for more financially included women. Female social commerce entrepreneurs have been asked to fill a survey about their financial behavior before and after the pivotal point of the Lebanese crisis, on October 17, 2019. Results show that social commerce in Lebanon is mainly cash-based. Nonetheless, a remarkable number admitted using some banking products and services prior to the pivotal point of the crisis, in October 2019. Overall, this article shows that social commerce affects some aspects of female entrepreneurs' financial inclusion; but the Lebanese triple crisis that has struck the core of the banking system has slowed the financial inclusion process down, possibly reversing it to a financial aversion.

Keywords: Financial inclusion, Female entrepreneurship, Social commerce, financial crisis, Covid 19, Lebanon.

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1 Introduction

The world aspires to achieve, by the end of 2030, a harmonious and a sustainable development which acknowledges the environmental, social, and economic aspects. One of the 17 sustainable development goals set is promoting “inclusive and sustainable economic growth” (United Nations, 2015). In order to reach the desired outcome, countries ought to promote financial inclusion among other economic measures. One definition of financial inclusion is the “access to and use of appropriate, accessible and affordable financial services” by individuals (Klapper & Singer, 2014). Unfortunately, traditional forms of access and usage of financial services have been compromised around the world during the Covid 19 pandemic (Mayoukou & Magloire, 2020). In Lebanon, the burden of the pandemic on the banking sector has been heavier especially because it came along already existing financial and economic hurdles (Abi-Rached & Diwan, 2020). The already vulnerable individuals, such as women, have been marginalized further due to job losses (United Nations, 2020) (We Empower, 2020). In a country where women already participate less in the workforce (Lebanese Republic Central Administration of Statistics, 2020), and the informal jobs prevail, the triple crisis has hit the working class hard at around 40% of unemployment rate (Araji & Hitti, 2020). Women in Lebanon were already less financially included before the crisis (Banque du Liban, 2018). For many of them, the deteriorating situation has worsened their financial status and prospects. But for others, there may have been an opportunity to seek. Globally, an increase in online shopping has been noticed during the pandemic (Yan, Zheng, Siddik, Li Dong, & Dou, 2021) (Zamboni, et al., 2021). In fact, women increasingly resort to social media to buy and sell products (We are social, 2021). According to global statistics, the sixth reason users visit social media is to research products to buy and the 11th reason is to create a network for work. Recently, women in Lebanon have resorted more increasingly to social media to sell products. There has been a remarkable development of social commerce (Nordeatrade, 2021). Whether it is clothing, accessories, hair and skin care products or shoes, women are using social media platforms to trade their merchandise. This form of trade, referred to as social commerce (Chen & Shen, 2015), takes place in the informal economy. We aim in this paper at studying the relationship between female entrepreneurship on social media and financial inclusion in the Lebanese turbulent context, hoping to enrich the literature on this subject.

The form of entrepreneurship studied in this paper is the informal social media entrepreneurship where women market and sell products through their personal pages without formally registering their business. Could this form of entrepreneurship lead to a better access to financial services for women in a crisis context? This paper tries to find out whether the women involved in this form of social commerce could potentially become financially included and formally participate in the financial cycle.

Rooted in the model of the World Bank on financial inclusion, this paper hopes to answer the following questions in the Lebanese context:

- Does the Lebanese triple crisis increase the usage of banking transactions by female social commerce entrepreneurs?
- Does the Lebanese triple crisis influence saving account ownership by female social commerce entrepreneurs?
- Does the Lebanese triple crisis influence female entrepreneurs' borrowing from banks and financial institutions?

- Is the digital finance usage of female social commerce entrepreneurs influenced by the Lebanese triple crisis?

The outline of this research is structured as follows: the first section visits the literature review on social media entrepreneurship and financial inclusion. The second section sets the theoretical framework and the hypotheses. The third section explains the methodology. The fourth section analyses the data collected and compares the results with other studies. The fifth section explains the limitation of this study. The last section concludes the research.

2 Literature Review

2.1 Social media: a fertile environment for female entrepreneurship

Nowadays, global trends include social media into business models (We are social, 2021). Almost half of the women worldwide use social media platforms. In addition to entertainment purposes, social media is being used to build work connections, to research products and brands, and even to buy and sell merchandise (We Empower, 2020; We are social, 2021). Social commerce has emerged as an enhanced form of e-commerce. Social media platforms provide a community where recommendation, advice and opinions on products are shared (Liang, Ho, Li, & Turban, 2011; Chen & Shen, 2015). They provide better communication with the potential clients, sometimes on a personal level (Lal, 2017). While the traditional form of e-commerce uses a regulated platform intended only for shopping purposes and including everything from selling to delivery (Das, Tamhane, Vatterott, Wibowo, & Wintels, 2018), social commerce uses social media platforms to trade products. It is in the informality of social commerce that lies the opportunity of female entrepreneurship (Pi STRATEGY, 2019). In this paper, the working definition of entrepreneur is "somebody actively involved in starting a business that is less than 42 months old" (Reynolds, Bygrave, Autio, & Hay, 2002; Hardig, et al., 2006) on social media. An entrepreneur on social media could be referred to as an informal entrepreneur, due to the informal nature of the market. In fact, the market of social commerce is legitimate but unregulated. The sellers trade legitimate goods but their businesses are not formally registered, economizing therefore taxes and legal fees (OECD, 2000; Katungi, Neale, & Barbour, 2006; Venkatesh, 2006; Williams & Nadin, 2010). When the market is unregulated, there are no barriers for entry, making it easier for women to participate. In fact, traditional e-commerce success depends on cost, knowledge and skills-related factors (Mahdi & Ghaffari, 2017), whereas social commerce requires no technical literacy to manage it nor any initial investment (Islam & Humam, 2019; Pi STRATEGY, 2019). Women simply use their pages and profiles to market products and services. They could personally reply to requests, as well as arrange payment and delivery. This form of alternate online commerce is thriving. In Indonesia, for example, the social commerce market is estimated at 3 billion dollars in 2017, and it is forecasted to expand eight-fold to reach 65 billion dollars in 2022. In addition, women revenues from online sales make up 35% of the total online sales revenues in contrast to 15% in the traditional offline forms of trade (Das, Tamhane, Vatterott, Wibowo, & Wintels, 2018). In Bangladesh as well, it is a general consensus that women lead the way in online commerce (Islam & Humam, 2019). In China, Taobao Village and Taobao Mall, launched by Alibaba, are a Customer to Customer (C2C) and a Business to Customer (B2C) online commerce platforms that have created entrepreneurial opportunities for many rural women (Yu & Cui, 2019). Social commerce does not require any initial investment, registration process or fees (Islam & Humam, 2019). In addition, women could sell products from the comfort of their homes (Yu & Cui, 2019),

conforming therefore to cultural and religious norms (Pi STRATEGY, 2019). The following figure summarizes the appeal of social commerce for women.

The appeal of social commerce lies primary in its convenience. It offers a great opportunity for women to thrive without challenging cultural and religious customs. It does not have investment costs and is easy to launch.

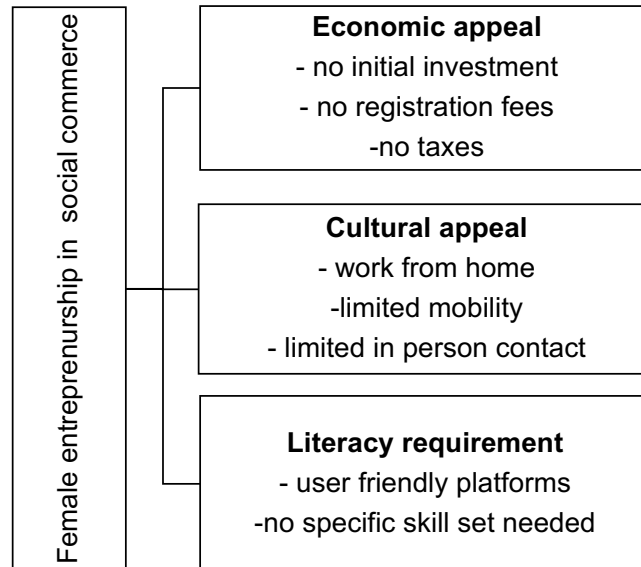


Figure 1. Social commerce appeal for female entrepreneurs

2.2 Lebanon's triple crisis: a challenge for women's financial inclusion

Lebanon faces economic, social, and health-related challenges. The Lebanese economic crisis started long before the surge of the novel virus, worsening further with the pandemic. Indicators suggest that the economic situation went downhill as early as 2017, when the ratio of national income to the GDP was lower than the international average by ten points (World Bank, 2020) and the GDP was negative (International Labor Organisation, 2020). In 2018 and 2019, statistics show a high labor underutilization level among women. In fact, women's participation in the workforce is four times less than the men's (Lebanese Republic Central Administration of Statistics, 2020); their inclusion in the workforce being halted by social norms, unequal pay, and household duties. Furthermore, women are less financially included than men. They own less accounts and have fewer loans (Banque du Liban, 2018). In addition, female entrepreneurs find more difficulty accessing loans than their male counterparts (Avis, 2017) making it harder to start and maintain female-owned businesses. Lower financial inclusion in Lebanon has been associated with employment status and income level (Banque du Liban, 2018; Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). Many Lebanese people resort to informal sources of financing for loans. On October 2017, 2019, the deteriorating economic and political situation generated a revolution. In addition, the COVID-19 pandemic worsened an already degraded situation, raising further unemployment levels (Abi-Rached & Diwan, 2020), and leaving the government unable to effectively manage the crisis (Geha, 2020). The price of the triple crisis came with strict banking rules and restrictions

on existing accounts as well as on transactions¹ (Rickards, 2020; Abi-Rached & Diwan, 2020). Basic financial services are no longer being offered, due to the irregular and highly fluctuating lira exchange rate to USD (Arabian Business, 2020). For instance, many new firms were denied the request to open business accounts imposed by the ministry of commerce (SawtEIFarah, 2021). While there is no formal decision from the Central Bank of Lebanon banning the practice, Lebanese banks choose not to open new bank accounts for many reasons. On one hand, the Central bank of Lebanon has tightened its regulations in a way that banks could hardly conform without harming their core activity. On the other hand, the economic crisis has initiated a wave of downsizing in the banking sector, and a rising pressure from depositors to withdraw their funds. These operational decisions made by banks today contradict financial inclusion objectives. In fact, this disruption of banking activity strikes the core of financial inclusion strategies. The banks are now in a survival mode where their existence precedes their societal responsibility and their customers' welfare. We wish to see this situation as temporary preceding a major financial system reform (Rickards, 2020), because financial services are the basis of banking activity and no formal financial system could pursue its activity without selling products and services. This paper takes into account this period of crisis and assesses women entrepreneurs' participation to the formal financial systems before and after the epitome of the crisis.

2.3 Financial inclusion of women: a milestone yet to achieve

Financial inclusion is usually defined as the process of integrating the most vulnerable categories in the society into the formal financial system (Ardic, Heimann, & Mylenko, 2011; Demirguc-Kunt & Klapper, 2012; Global Partnership for Financial Inclusion, 2016; Abel, Le Roux, & Mutandwa, 2018). Vulnerable categories targeted by financial inclusion strategies are usually the rurales, the women, the unemployed, and the poor (Camara & Tuesta, 2014; World Bank, 2014; Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). Women are, till date, significantly less financially included than men. Globally, they own less accounts, have less loans, own less insurance policies and have less access to digital finance (Demirgüç-Kunt, Klapper, Singer, & Oudheusden, 2015; Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). The reasons for their financial exclusion are many, from economic to cultural and religious. One of the reasons is their limited participation in the workforce. When people work, they are more likely to use financial services to manage their money, and they become therefore more financially stable. Work instability leads to financial insecurity, and financial insecurity leads to financial exclusion. Nowadays, in light of the novel coronavirus, more women have become marginalized. Many have lost their job, thus their steady income, and they have been bound to their homes doing unpaid caregiving work (United Nations, 2020). The challenge of financial inclusion has become harder especially when numerous women have been removed from the workforce. While the level of financial inclusion of women is evaluated by their access to and their usage of financial services, the promotion of their financial inclusion starts with their active participation in the economy. Women face many difficulties accessing financing. For instance, female entrepreneurs have more difficulty obtaining loans than their male counterparts, making it harder for them to start and maintain female-owned businesses (Avis, 2017). Nevertheless, many measures are being taken to improve the access of female entrepreneurs to financial services and products. One widespread measure of financially including women, is by offering them microcredits for their businesses and projects (Gustafson & Khandker, 2016; Park

1. Many Banque du Liban (BDL) circulars were issued to regulate transactions, deposits and loans. BDL circular number 151 enables bank depositors to convert their foreign currency accounts to Lebanese lira at market rates. Basic circular number 153 restricts foreign students' tuition and accommodation transfers to students who have been abroad before 2019 and sets the annual limit at 10000 dollars.

& Mercado, 2018). Worldwide, many initiatives have been undertaken to improve the financial literacy levels of women, to promote their financial independency and to encourage female run businesses. Nonetheless, women are still less financially included than men almost everywhere around the globe (Demirgüç-Kunt, Klapper, Singer, Ansar, & Hess, 2018).

3 Conceptual foundations and hypotheses

3.1 Female entrepreneurship and financial inclusion

Many studies show that financial inclusion of individuals is closely related to their active participation in the workforce. In other words, a person's employment status and income level influence their usage of financial services (Abel, Le Roux, & Mutandwa, 2018; Demirgüç-Kunt, Klapper, Singer, & Oudheusden, 2015; Franklin, Demirguc-Kunt, Klapper, Peria, & Soledad, 2012; Sinclair, 2001; Kempson, Whyley, Caskey, & Collard, 2000; Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). It is in this sense that female entrepreneurship could promote financial inclusion. Female entrepreneurship has been recognized as an important source of economic growth and empowerment (Premalatha, 2010; Bulsara, Chandwani, & Gandhi, 2014).

Female enterprises boost employment levels and contribute to the prosperity of the economy. A female entrepreneur could be identified as "a confident, innovative and creative woman capable of achieving self-economic independence. . . , generates employment opportunities for others though initiating, establishing and running the enterprise [. . .]" (Ganesamurthy, 2008). Naturally female entrepreneurship should come hand in hand with financial inclusion. Nevertheless, the equation is not this simple. Many barriers halt the financial inclusion of female entrepreneurs. Many individuals still have negative attitudes towards formal financial institutions and they find the products costly and not tailored to their needs (World Bank, 2014). In addition, many studies suggest that women entrepreneurs lack confidence to study their own ventures, (Hemantkuman, Jyoti, & Shailesh, 2014) have difficulty accessing financing (Avis, 2017), are financially dependent and lack control over their money (Hashemi, Schuler, & Riley, 1996). They also admitted experiencing discrimination by bankers (Singh, 2008).

That being said, women entrepreneurs prefer working off grid and using cash transactions. Nonetheless the development of female-run business requires inevitably cashless payment methods. The value chain of prospering businesses suggest that cash transactions could not be indefinitely sustained. Transactions through financial institutions will appear at some point in the life of a developing female business, however acquiring the full package of loans and saving accounts is closely related to socio-economic factors and attitudes towards formal financial services and institutions. (World Bank, 2014; Abel, Le Roux, & Mutandwa, 2018; Pi STRATEGY, 2019).

3.2 Demand side indicators of financial inclusion

Financial inclusion could be studied from the supply side as well as from the demand side. The supply side approach studies the offer of financial services by financial institutions and banks while the demand side approach studies the excluded categories, their characteristics, and their usage of financial services. Demand side approach focuses on the actual utilization of financial service from transactions, to loans, to insurance to digital finance. (Global Partnership for Financial Inclusion, 2016; L'Alliance pour l'Inclusion Financière, 2019; Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018).

In this paper, we adopt a demand-side approach, namely the financial inclusion model, highlighted in the Global Findex Database. The global Findex Database uses multiple indicators to assess the financial inclusion of the population in different countries and regions (Demirgüç-Kunt, Leora,

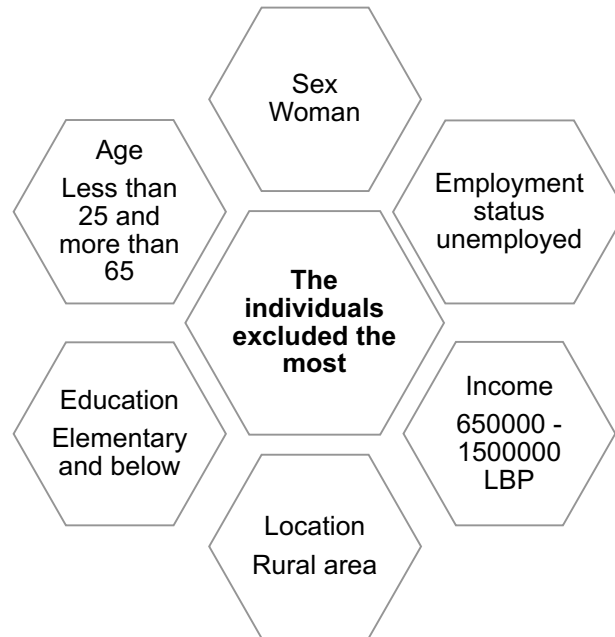


Figure 2. The socio-economic characteristics of the most excluded individuals in Lebanon presented by the Global Findex

Dorothe, Saniya, & Hess, 2018). It uses demand side surveys, thus addresses the individuals directly. The Global Findex mainly evaluates whether the individuals carry out financial transactions, whether they save and borrow and whether they use digital finance services. These aspects reflect the effective use of financial services by adults in a certain area of the world.

In the Global Findex report, demand-side data from around the world has been gathered and analyzed under three categories: making and receiving payments, saving and borrowing, and using digital finance. Every category is divided into indicators. For example, transactions category includes government payment, receiving foreign remittance, and work payments. Data gathered from around the world helped to identify indicators of usage.

3.2.1 Socio-economic characteristics of the financially excluded individual in Lebanon

The Global Findex Database determines socio-economic variables that affect financial inclusion. These characteristics are defined after gathering data from around the world. Account ownership differs according to gender, geographical location, employment, income level, age and economy level (Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). In Lebanon, the Central Bank used the framework set by World Bank's Global Findex Data base. The following figure summarizes the results of the study and shows, for each socio-economic variable, the individuals who are excluded the most from the formal financial system (Banque du Liban, 2018).

In the findings of the central bank of Lebanon regarding the excluded individuals, the income level and the employment status are important characteristics. This paper studies women who work in social commerce. It targets females who are entrepreneurs. It hypothesizes that the entrepreneur employment status which inevitably affects the income level, impacts financial inclusion. In other words, we wish to study whether female-run business incites the entrepreneur to use more financial services and resort to banking transactions. Evidence from Bangladesh shows that when female social commerce businesses develop, women are more inclined to turn to the formal financial systems in order to pay suppliers and partners and receive money from customers (Islam & Humam, 2019; Pi STRATEGY, 2019).

3.2.2 Demand side indicators applied to social commerce

In order to evaluate financial inclusion, we applied the global Findex three areas of assessment to social commerce: incoming and outgoing transactions, saving and borrowing, and using digital finance. The first area of assessment includes a set of indicators; they are mainly government payments, salaries and pensions, remittance from relatives abroad and work payments, salary domiciliation and transfers. The second area of assessment includes saving and borrowing. The indicators are individuals saving accounts and saving patterns and loan possession. The final area of assessment is the usage of digital finance. The indicators are the usage of mobile money and internet banking.

In the following figure, the top two rows show the original areas of assessment and indicators retrieved from the Global Findex model (Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). The third row presents the indicators used in this study.

Table 1. Financial services usage indicators applied to female entrepreneurship in social commerce

Areas of assessment	Making and receiving payments	Saving and borrowing	Using digital finance	(Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018)
Original Indicators	-Government payments	- Saving for the future	- Mobile Money	(Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018)
	- Remittance from abroad - work payment	- loan	- Internet banking	
Female entrepreneurship in social commerce indicators	- paying suppliers and partners - receiving money for the sale of products - receiving money from delivery company	- having a saving account to keep a part of the sales revenues - borrowing to expand business or pay suppliers	- using cashless transactions through internet banking or mobile money ²	(Pi STRATEGY, 2019) (Islam & Humam, 2019)

When female entrepreneurs establish their businesses, their activity does not always require complex transactions with suppliers, partners, clients and or employees. Some women start by using cash on delivery and making all transactions in person (Pi STRATEGY, 2019). In this paper, we will study whether the flourishing of the business motivates a higher use of financial services by female entrepreneurs in social commerce taking into account the economic, financial and sanitary crisis in Lebanon.

2. In Lebanon, there are no mobile money applications. The digital finance is limited to online banking via mobile phone applications or internet browsers (Demirgüç-Kunt, Klapper, Singer, & Oudheusden, 2015). Furthermore, the usage of digital finance is very low among adults. Women digital finance usage is less than 5% (Clark & Garbis, 2016; Banque du Liban, 2018).

3.3 The hypotheses

This section presents the hypotheses of this research. Female entrepreneurs on social media operate in the informal economy, through their personal pages and blogs, to sell products and goods. Whether they take their business to the next level of cashless transactions, saving, borrowing and using the digital technology in finance, is hypothesized to be affected by the Lebanese crisis which kept worsening after October 17, 2019 events. Hereafter, are three hypotheses which cover the 4 areas of assessment adopted from the global Findex model and adjusted to the Lebanese social commerce model.

H1: Female social commerce entrepreneurs made and received more transactions through banks before the pivotal point of the Lebanese crisis

H2: Female social commerce entrepreneurs had more saving accounts and loans before the pivotal point of the Lebanese crisis.

H3: Female social commerce entrepreneurs use less digital banking services after the pivotal point of the Lebanese crisis.

4 Methodology

4.1 Data collection

In Lebanon, little study has been conducted on social commerce especially female social commerce. The size of the population is vague because the market studied takes place in the informal economy. In order to reach the female social commerce entrepreneurs, the survey has been administered in a Facebook group³ which hosts around 2300 women. Female merchants who sell online were invited by the admin to fill the survey and motivate their friends in the same line of business to do so as well. In addition to this Facebook Group, the link of the survey was broadcasted via social media applications to all whom it may concern. The Data collection took about two months to reach the desired number of respondents. At around 6% of margin of error and 95% confidence level, the sample size stands at 229 female entrepreneurs (Hardwick Research, 2021) (Smith, 2013).

4.2 Questionnaire design

The questionnaire was designed to spot financial behavioral changes before and after the first palpable signs of financial crisis in the banking sector in Lebanon. The survey covers all dimensions of financial inclusion. It has questions on financial transactions, on saving account ownership, on loan possession, and on digital finance. The respondents were asked to answer the same questions before and after October 17, 2019. This date was chosen because it represents the first sign of palpable repercussions of the financial and economic crisis⁴ on the banking sector. As of October 17, 2019, banking regulations became harsher, restrictions increased, and the monetary devaluation began its rampage.

The first two questions of the survey defined our sample because they helped exclude social commerce entrepreneurs who started their business after October 2019 as well as those who do not reside in Lebanon. We have come to notice that almost two thirds of the respondents started their social commerce business after October 2019. We excluded these individuals from our research,

3. The Facebook Group is called Sabaya-Capital Arabian Beirut.

4. The central Bank of Lebanon, in its circular 158 set October 2019 as the reference date for computing the USD saving balance for customers in order to organize a process to gradually give depositors their foreign currency deposits.

but their number gives us an insight on the effect of the Lebanese crisis on such a market. It is also important to note that all questions were mandatory so there are no missing values in the data collected.

5 Data analysis and findings

5.1 Methods

This article studies the difference in the financial behavior of a group of female social commerce entrepreneurs before and after the pivotal point of the Lebanese financial economic and sanitary crisis. The aim is to see the effect of the crisis on the financial inclusion of these female entrepreneurs. The study has one group of individuals tested before and after the occurrence of an event. For this type of variable, a paired sample test is used. The questionnaire has two types of variables; therefore, we will need two types of paired sample tests. The table below shows the tests used.

Table 2. Variables and statistical tests

Questions in the survey	Answers	Variable	Test
Questions number 13, 14, 15, 16, 19, 20, 25, 26, 28	Yes or No	Dichotomous	McNemar test
Questions number 1,2,3,4,5,6,...	Choosing between 4 types of payment methods	Categorical with more than 2 possible answers	Chi-square: for signification and Cramer's V: for correlation
	Choosing between Yes, No and I don't want to		

These tests reveal whether or not there is a significant effect of the crisis on the usage of financial services by female entrepreneurs. They help detect the difference between the before and after results, and determine whether the difference is statistically significant.

5.1.1 McNemar test for dichotomous variables

The McNemar test is used to determine whether there is a difference on a dichotomous dependent variable between two related groups. This test is similar to the paired-samples t-test which are used in the case of continuous variables, but this one is specific for dichotomous dependent variables (Glen, 2015).

The assumptions for the application of this test are the following:

Table 3. Assumptions and validation

Assumption	Validation
The dependent variable is nominal, categorical with two categories, and there is one categorical independent variable with two related groups.	The questions have two types of answers (yes or no), the independent variable is the Lebanese financial and monetary crisis. The same group of people is tested before and after the crisis.
The categories of the dependent variable must be mutually exclusive.	The participants cannot, for example, have and not have an account at the same time, meaning that the categories are mutually exclusive.
The cases constitute a random sample from the population of interest	The sample has been gathered randomly from all regions of the Lebanese territory

The McNemar test value is represented by the following formula. A continuity correction is applied to this equation:

$$Q_c = \left(\frac{(|n_{ij} - n_{ji}| - 1)^2}{n_{ij} + n_{ji}} \right)$$

If the estimated test value Q_c is greater than the χ table value of 3.84 at 95% confidence interval, then it can be concluded that the difference in the results gathered in the before and after event is statistically significant. Therefore, the independent variable is considered to have an effect on the dependent variable (Kavzoglu, 2017). The table below shows the McNemar test computed by SPSS. The results are shown below.

Table 4. McNemar Test for dichotomous variables

Category	Responses before and after the pivotal point of the crisis on banking sector ⁵				Exact sig.	Meaning
	Y _{Before} / Y _{After}	Y _{Before} / N _{After}	N _{Before} / Y _{After}	N _{Before} / N _{After}		
Opening a saving account	22	96	6	105	0.0001	significant difference
Keeping a saving account	19	20	6	55	0.009	significant difference
Having a loan	5	99	4	121	0.0001	significant difference
Having a Credit Card	41	69	2	117	0.0001	significant difference
Using digital finance	31	36	6	156	0.0001	significant difference
Using a credit card	24	51	4	150	0.0001	significant difference

Category	Responses before and after the pivotal point of the crisis on banking sector ⁵				Exact sig.	Meaning
	Y Before / Y After	Y Before / N After	N Before / Y After	N Before / N After		
Banking regulation negatively affecting digital finance usage	49	11	68	101	0.0001	Significant difference
Banking regulation negatively affecting account ownership	23	13	94	99	0.0001	Significant difference

Taking a look at the frequencies, it is clear that the majority of female social commerce entrepreneurs do not use any kind of banking services neither before nor after the crisis. But for the those who have contracted loans, opened saving accounts, and used credit cards before the crisis, their behavior has changed significantly after the crisis. The statistical test shows a shift in behavior. The change in the results indicates that the crisis affects the usage of banking products and services. As for the assessment of the impact of banking regulations on their decision to use the product, the female entrepreneurs stated that in the period following the uprising, the new rules affected their decision to open an account. As for digital finance, its usage is closely related to the usage of the primary products and services, so the usage of mobile banking and online banking has dropped as well following the crisis.

5.1.2 Chi-square and Cramer's V tests for categorical variables

The Chi-square helps determine the relationship between two categorical variables. It determines whether the variables are dependent (Kearney, 2017). In the case of this research, it helps determine whether payment method usage is dependent on the Lebanese crisis. The null and alternate hypotheses are the following:

H1: The two variables Payment method before crisis and Payment method after crisis are independent of each other.

H2: The two variables are related to each other.

Cramer's V test following the Chi-square helps determine the strength of the correlation between the variables. It gives a value between 0 and 1. When the answer is close to 1, the correlation is at its strongest and vice versa. The value of Cramer's V is computed as following:

$$V = \left(\sqrt{\frac{X^2}{n \cdot df}} \right)$$

Where df is the minimum of $(r - 1, c - 1)$, and r is the number of rows and c is the number of columns in the contingency table (Select Statistical Services, 2020).

The following table shows Chi-square and Cramer's V tests applied on the categorical variables:

Table 5. Chi-square test and significance

Variable Tested	Chi-sqValue	Chi-sq Asymp. sig	Cr V Value	Cr V Sig.
Most frequently used payment method by clients before and after crisis	89.157	0.0001	0.441	0.0001
Most Payment method used to pay suppliers before and after crisis	68.698	0.0001	0.316	0.0001
Most Payment method used to pay partners before and after crisis	155.271	0.0001	0.475	0.0001
Least Payment method used by clients before and after crisis	119.724	0.0001	0.723	0.0001
Payment method used to pay suppliers before and after crisis	89.96	0.0001	0.313	0.0001
Least Payment method used to pay partners before and after crisis	131.439	0.0001	0.379	0.0001

The Chi-square test helps us find out whether the payment method used before the crisis is different from the payment method used after the crisis. The results of the Chi-square test indicate that the variables are dependent of each other. This means that payment methods used before and after the crisis are related to each other. The Cramer's V test for the least used payment method by clients is close to 1 meaning that the two variables are strongly correlated. In other words, there has not been a remarkable change before and after the crisis in the payment method least used. As for the other variables, Cramer V shows a moderate correlation, meaning that there has been some shifting in behavior but not one that can be built on.

In order to visualize the results and to understand the shifts in behaviors, the frequencies have been put in a 5x5 contingency table. All payment methods variables have been put in the table below in order to compare and contrast results.

Table 6. The payment method used the most by clients, suppliers and partners before and after the crisis⁶

			After					
			Bank transfer	Cash	Cheque	Credit Card	Money transfer	Result
Before	Bank transfer	C	0	0	0	0	0	0
		S	2	12	0	0	2	16
		P	0	7	0	0	2	9
	Cash	C	0	211	0	0	0	211
		S	2	167	0	2	4	175
		P	0	173	2	4	0	179

6. C: Clients, S: Suppliers, P: Partners

			After					
			Bank transfer	Cash	Cheque	Credit Card	Money transfer	Result
Before	Cheque	C	0	2	0	0	0	2
		S	0	5	0	0	0	5
		P	0	16	2	0	0	18
	Credit Card	C	0	6	2	2	0	10
		S	0	16	0	2	4	22
		P	0	9	0	9	0	18
	Money transfer	C	0	6	0	0	0	6
		S	4	5	0	0	2	11
		P	0	3	2	0	0	15
	Result	C	0	225	2	2	0	229
		S	8	205	0	4	12	229
		P	0	208	6	13	2	229

The contingency table shows an increasing reliance on cash. For clients, the primary payment method used, before and after crisis, remains cash. Even more individuals are using cash, 14 additional respondents answered that their clients chose cash transaction after the crisis, for a total of 225 respondent out of 229. No one reported the usage of bank transfers or money transfers, neither before nor after the crisis. Less than 10% of female entrepreneurs admit receiving payment from clients in cheques or credit cards.

As for paying suppliers, the results show that there is a high dependency between the answers before and after the crisis. When viewing the contingency table, it is clear that the majority of respondents used cash transactions before the crisis and continued doing so after it. The few entrepreneurs who used credit card as their main means of payment have almost all shifted to cash, the same with cheque and bank transfers. The statistic tests, used above, acknowledged the similarities in the payment method before and after the crisis. Although the small shifts from cashless transactions to cash, detected with the frequency analysis, could not be brought by chi-square and Cramer's V test. Overall, 28 respondents changed their payment method to cash, and 167 out of 229 kept with cash before and after the disruption of the banking activity caused by the crisis.

It is clear that the social commerce economy is based primarily on cash. When dealing with partners, delivery, and packaging companies, the female social commerce entrepreneurs rely mostly on cash. This fact has not been affected by the crisis, because 173 out of 179 female entrepreneurs who used cash before the crisis continued to do so afterwards. A shy number of respondents used cashless transactions, but they almost all shifted to cash after October 17, 2019. The second payment method used, after cash, in the period following the uprising, is credit card. However, 16 is a negligible number in terms of frequency.

The following table shows the change in the payment method used least before and after the crisis by clients, suppliers and partners.

Table 7. The payment method used the least by clients, suppliers and partners before and after the crisis⁷

			After					
			Bank transfer	Cash	Cheque	Credit Card	Money transfer	Result
Before	Bank transfer	C	19	6	8	5	16	54
		S	18	11	17	9	3	58
		P	17	0	15	18	7	57
	Cash	C	0	6	2	6	0	14
		S	0	4	4	14	2	24
		P	0	14	11	0	0	25
	Cheque	C	9	0	36	15	6	66
		S	2	2	47	15	6	72
		P	10	9	49	4	3	75
	Credit Card	C	12	4	5	24	6	51
		S	6	4	23	16	2	51
		P	11	2	14	11	6	44
	Money transfer	C	22	0	6	5	11	44
		S	3	0	9	3	9	24
		P	10	0	4	4	10	28
	Result	C	62	16	57	55	39	229
		S	29	21	100	57	22	229
		P	48	25	93	37	26	229

Clients' least used payment method has not been significantly affected by the disruption of banking activity caused by the crisis. Frequencies are approximately the same before and after October 17, 2019. The least payment method used before, in terms of frequency, was the cheque. After the crisis, payment by cheque is still rarely used but bank transfers became even less frequent. The contingency table shows that cashless transactions remained rarely used before and after the crisis. When it comes to paying suppliers, cheques remain the least used payment method before and after the crisis. Almost half of the respondents stated that they rarely or never use cheques to pay for their merchandise. The use of credit cards for payment has dramatically decreased. Statistically, there is no apparent change in the preferences of the entrepreneurs towards the cashless payment methods.

Cheques are the least used payment method for paying partners as well. The aversion to cheque, similar to that of credit cards, increased after the crisis

7. C: Clients, S: Suppliers, P: Partners

5.2 Discussion and Hypothesis validation

The aim of this research is to find out whether female social commerce entrepreneurs are financially included, whether this type of informal market paves the way for more financially included merchants. The financial and economic crisis pivotal point has been taken into account in order to detect a possible change of behavior, a counter effect on financial inclusion of these women. To do so we evaluated the three dimensions of financial inclusion: banking transaction frequency, account ownership, loan contraction, and digital finance usage.

The first hypothesis stated: *Female social commerce entrepreneurs made and receive more transactions through banks before the pivotal point of the Lebanese crisis.* This hypothesis has been rejected. Statistically, the payment methods used before and after the Lebanese crisis have not changed significantly. In terms of frequency, female entrepreneurs have always preferred cash transactions. Although the main method of payment used by clients, suppliers and partners remained cash, a few female social commerce entrepreneurs admitted using some forms of banking payment methods before the crisis. Nevertheless, the percentage of these women is not significant. Other studies show that the social commerce market remains a cash market. One study in Bangladesh suggests that the more the female merchant's income increases, the more she tends to use banking services (Pi STRATEGY, 2019).

The second hypothesis stated that: *Female social commerce entrepreneurs had more saving accounts and loans before the pivotal point of the Lebanese crisis.* This hypothesis has been validated. McNemar test shows a significant difference in financial behavior before and after the crisis. Account ownership decreased drastically after the crisis so did loan contraction and credit card usage. Lebanese implicit banking regulations made it extremely difficult to open accounts or to access loans after the crisis (Arabian Business, 2020; SawtEIFarah, 2021). Credit card usage has been further subjected to limits and currency restrictions. It is important to note that before the crisis, less than half of these women sought bank loans and opened saving accounts. In terms of frequency, the percentage of these women is high in comparison to that of other Arab female entrepreneurs (IFC and CAWTAR, 2007). The IFC report states that women in Bahrain and in Lebanon had less difficulty than other Arab entrepreneurs to access external financing (IFC and CAWTAR, 2007). Accessing financial services is one of the major challenges of female entrepreneurs (Trad, 2015; Pinkovetskai, Arbelaez, Arbelaez Campillo, & Rojas-Bahamon, 2019). Women face sexual bias and cultural barriers in conservative communities as well as lack of collateral. This study shows that these female social commerce entrepreneurs were able to access financing via banks, but the economic, financial and sanitary crisis that paralyzed the banking sector had a negative effect on them, driving them away from formal financing.

The third hypothesis stating that: *Female social commerce entrepreneurs use less digital banking services after the pivotal point of the Lebanese crisis,* has been statistically rejected. Results show that the usage of digital finance is low before and after October 17, 2019. The small variation of usage is not statistically significant. This is understandable especially because the usage of digital finance in Lebanon is exclusively related to banking services (Demirgüç-Kunt, Leora, Dorothe, Saniya, & Hess, 2018). To date, there has not been any mobile money companies or any form of financial transactions via a network without the intermediary of banks. Therefore, the lack of digital finance usage is partly related to the rare usage of banking products and services. Digital finance is limited to mobile banking and online banking. After the crisis, digital finance usage decreased further. Less entrepreneurs admitted using their credit cards or doing any transaction via the banking system. Unlike what Hattab (2012), and Sadi & Al-Ghazali (2010), suggest in their studies of the Arab region, female social commerce entrepreneurs do not lack access to ICT. All the female entrepreneurs in this line of business do not lack access to mobiles or internet.

Some studies found that female entrepreneurs in the Arab world are not effectively initiated to use ICTs (Badran, 2014).

6 Conclusion

This study shows that there has been some change in the female social commerce entrepreneurs' financial behavior after the pivotal point of the Lebanese sanitary, economic and financial crisis. The change of behavior revealed by this study is particularly evident in the area of account ownership and loan contraction. Almost all of the respondents closed their saving accounts, stopped applying for new loans and dropped the use of their credit cards after October 17, 2019. This drastic change of behavior is mainly due to the strict rules endorsed by the banks and dictated by the Central bank of Lebanon. This research shows, as well, that the social commerce market in Lebanon is mainly cash-based. The crisis has not changed the behavior of the female entrepreneurs in this area, because cash prevails in this informal market. In addition, digital finance usage remained rare. Digital finance in Lebanon is closely related to the use of banking products and services and is used to facilitate banking transactions. When female social commerce entrepreneurs have little to no use of banking products, digital finance in terms of online banking becomes unnecessary.

This study exposes the negative effect of the Lebanese crisis on the process of financial inclusion of a group of female entrepreneurs who operate in a booming market. The comparison of the results before and after the crisis shows that the social commerce market could drive women to use more banking services and products, but the financial and economic instability eliminates the progress and drives the process backward towards financial exclusion. Female entrepreneurs were starting to get integrated in the financial system before they lost trust in the Banking sector.

This study was particularly difficult because the population of female social commerce entrepreneurs in Lebanon remains unknown. It is a booming market fueled by the Lebanese triple crisis. The data collection was hard because women were difficult to persuade to participate in this research. There is further research to be conducted in this field. For instance, the survey excluded around two thirds of the respondents because they started their business after the uprising. Future studies should visit the motives and appeals of such a market in crisis period.

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8 Appendix

The questionnaire used in this research is the following:

		Dependent variable: Lebanese crisis		
		Before oct 2019	After oct 2019	Answer
(question to make sure the respondent is an entrepreneur residing in Lebanon)	1. Have you been an online seller prior to October 2019?			Yes No
	2. Do you reside in Lebanon?			Yes No
Independent variable: Transactions <i>H1</i> : Female social commerce entrepreneurs make and receive more transactions through banks before the pivotal point of the Lebanese crisis	1. What payment method is used the most by your clients?	2. What payment method is used the most by your clients?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)
	3. What payment method is used the least by your clients?	4. What payment method is used the least by your clients?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)
	5. What method do you mostly use to pay your suppliers?	6. What method do you mostly use to pay your suppliers?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)
	7. What method do you use the least to pay your suppliers?	8. What method do you use the least to pay your suppliers?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)
	9. What method do you mostly use to pay your partners (delivery company, packaging company, marketing)?	10. What method do you mostly use to pay your partners (delivery company, packaging company, marketing)?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)
	11. What method do you use the least to pay your partners delivery company, packaging company, marketing)?	12. What method do you use the least to pay your partners delivery company, packaging company, marketing)?		Cash Cheque Bank transfer Credit card Money transfer (OMT/WU)

Dependent variable: Lebanese crisis			
	Before oct 2019	After oct 2019	Answer
Independent variable: Saving account	13. Did you have a saving account prior to October 2019?	14. Did you open a saving account after October 2019?	Yes No
	<i>H2</i> : Female social commerce entrepreneurs have more saving accounts and loans before the pivotal point of the Lebanese crisis..	15. If yes, do you still hold that account?	16. If yes, do you still hold that account?
17. Do banking regulations before 17 October 2019 affect your decision to open a saving account?		18. Do banking regulations after 17 October 2019 affect your decision to open a saving account?	Yes No I don't have a saving account
19. Did you have a bank loan before October 2019?		20. Did you take a loan after October 2019?	Yes No
21. Did you have a credit card prior to October 2019?		22. Do you have a credit card now?	Yes No
23. Did banking regulations before 17 October 2019 affect your eligibility to have a loan?		24. Do banking regulations after 17 October 2019 affect your eligibility to have a loan?	Yes No I don't want to have a loan
Independent variable: Digital finance	25. Did you use internet banking? (application or browser) before October 19?	26. Do you use internet banking? (application or browser) now?	Yes No
<i>H3</i> : Female social commerce entrepreneurs use less digital banking services after the pivotal point of the Lebanese crisis..	27. Did you make online payment using your credit card before october 2019?	28. Do you make online payment using your credit card?	Yes No
	29. Did you want to use digital banking but could not due to banks regulations?	30. Do you want to use digital banking but could not due to banks regulations?	Yes No

Biographies



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