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The Determinants of Digital Entrepreneurship by Informal Micro and Small Enterprises (MSEs) in Egypt

RESEARCH PAPER

The Determinants of Digital Entrepreneurship by Informal Micro and Small Enterprises (MSEs) in Egypt

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ABSTRACT

PURPOSE: This study examines the determinants of engaging in digital entrepreneurship (DE), focusing on women and male youth entrepreneurs who are owners of informal MSEs in Egypt.

DESIGN/METHODOLOGY/APPROACH: The study combines the theory of planned behaviour with the diffusion of innovation theory as a conceptual framework. It tests whether an entrepreneur's characteristics, attitudes, goals, and the innovation attributes of social media, in terms of perceived relative advantage, trialability, and observability, have resulted in DE adoption. Data were collected through phone interviews with 408 Egyptian women and male youth entrepreneurs who are residents of Greater Cairo and who own informal MSEs that only operate online.

FINDINGS: Results of the statistical analysis reveal the significantly negative impact of self-confidence and boredom on DE adoption. In contrast, making money, connectivity, self-actualisation, and minimising direct costs positively affect DE adoption.

PRACTICAL IMPLICATIONS: The findings will be useful to future entrepreneurs and educators. It should also benefit policy-makers who target economic development through MSE creation and the inclusion and empowerment of women and youths.

ORIGINALITY/VALUE: This research contributes to the scant literature by providing a modified theoretical framework for future academic studies.

KEYWORDS: *Digital entrepreneurship; Social media; MSEs; Informal sector; Youths; Women; Egypt*

INTRODUCTION

Digital entrepreneurship (DE) is becoming an essential trait in new venture creation, more so after the ramifications of the COVID-19 pandemic. It is defined as "a subcategory of entrepreneurship in which some or all of what would be physical in a traditional organisation has been digitised" (Hull *et al.*, 2007, p.5). It is also defined as the process of creating a digital start-up as a new business or within an established firm (Zaheer *et al.*, 2019). It can also be seen "as the reconciliation of traditional entrepreneurship with the new way of creating and doing business in the digital era" (Le Dinh *et al.*, 2018). Research on Internet adoption by businesses has been limited in developing countries (Alam, 2009), especially for small firms/enterprises (Mandal and McQueen, 2012). Social media applications are simple, generally free, web-based, and depend on user-generated contents; therefore, these are adopted by businesses primarily to communicate with customers (Mandal and McQueen, 2012). As of 30 September 2020, Facebook had 42.5 million active users in Egypt (Internet World Stats, 2020); according to Kemp (2021), this number reached 45 million users in 2021. Instagram has also recorded a rising number of 14 million active accounts (Kemp, 2021).

DE has been tackled by only a few research studies (Kraus *et al.*, 2019). However, it has gained increasing attention among scholars (Hansen, 2019), mainly because it enables new venture creation, creates new sources of value and wealth (Soltanifar *et al.*, 2021) and it positively impacts job opportunities and economic growth (Sahut *et al.*, 2021). It is believed to have progressed from the terms "Internet entrepreneurship" (a term used in 2000) and "cyber entrepreneurship" (used in 2004) (Zaheer *et al.*, 2019). Other articles refer to it as digital venture, digital innovation, digital enterprise, or digital business (Kraus *et al.*, 2019). The use of several terminologies, and the fact that this topic is being rooted in several fields, such as management, entrepreneurship, and information systems, makes it more difficult for academic research to provide an holistic knowledge base (Zaheer *et al.*, 2019).

Studying e-commerce in developing countries is still a widely agreed-upon research gap (Rabie, 2013). Research in these areas is needed to enhance knowledge about the adoption of the e-commerce environment in less developed and developing counties (Grzeslo, 2020); it will support the development of this sector by enhancing the entrepreneurial capabilities and utilising new digital tools efficiently (Rabie, 2013). In the context of Egypt, small-scale entrepreneurs have been the key drivers for economic growth since the mid-twentieth century (Dana, 2000) up to the present (El-Said *et al.*, 2014), in which these small firms play a fundamental role in supporting the

economy (Fakhreldin *et al.*, 2020). In Egypt, micro, small, and medium enterprises (MSMEs) are dominated by micro-enterprises, most of which are in the informal sector. Conventionally, Egyptians have been risk-averse, shying away from starting their own businesses; this mindset has recently changed, especially among women and the youth, and more so with the introduction of information and communication technologies (ICT), especially social media. Nevertheless, country-specific research that studies entrepreneurs' behaviour, activity outcome (Fakhreldin and Hattab, 2019), and the adoption of e-commerce by small and medium enterprises (SMEs) is scarce (Rabie, 2013).

Although Egyptian women comprise around 50% of the population, they are only 18% of the labour force (World Bank, 2019) and encounter numerous challenges in the labour market owing to adverse economic, regulatory, and social climates (El-Ashmawy, 2016). Youth endure analogous challenges and face high unemployment rates, reaching 34% in 2016 (Statista, 2021). This unpropitious employment environment augmented women and youth entrepreneurship (Ismail *et al.*, 2018), the bulk of which exist in the informal sector (MTI, 2017). Nevertheless, they still face substantial challenges. Women still suffer from social norms that expect them to adhere to their gender roles of taking care of the household chores and the family. This is in addition to their constrained mobility and limited access to financial resources, as well as their restricted experience, skills and social networks that are a result of their confined labour force participation rates (Ojediran and Anderson, 2020). Concerning youth, they also lack business skills and suffer from financial institutions' rigid lending requirements (OECD, 2017). Given these predicaments, social media loomed as a promising platform for many women and youth to initiate their online businesses or to adopt digital entrepreneurship.

The objective of this study is to investigate the determinants of digital entrepreneurship by Egyptian women and male youth entrepreneurs. This is carried out through a self-assessment questionnaire conducted via phone interviews with entrepreneurs in Greater Cairo whose MSEs were operating online only for no less than a year. A stepwise multiple regression model was then used.

The remainder of this study has six more sections. The next section reviews the literature and ends with the proposed research framework used. This is followed by a discussion of the methodology, a section presenting the findings, and a further section that discusses the results. The final section concludes, sheds light on the limitations of the study, and gives ideas for further research.

REVIEW OF THE LITERATURE

DE is described as the opportunities made possible to entrepreneurs and SMEs by the worldwide web, social media, and mobile technology (Grzeslo, 2020). In the era of the digital economy in which we are currently living, a growing number of entrepreneurs are engaged in the sharing and exchange of information, knowledge, data, and physical goods (Le Dinh *et al.*, 2018). This provides a great incentive to explore and understand the conditions and challenges facilitating

or hindering this digital transformation (Hansen, 2019) and the rise of DE. The literature reports various factors that enhance the adoption of social media by entrepreneurs. Alam (2009) showed that owner/manager characteristics have a significant effect on Internet adoption in businesses. Individual personalities (Mandal and McQueen, 2012) and attitudes (Folorunso *et al.*, 2010) of the entrepreneurs who launched micro-businesses play an important role in the adoption of social media. Moreover, several findings have suggested that prior experience, resistance to change, education level, and training are all critical factors affecting Internet adoption (Woodcock and Chen, 2000). These findings were also confirmed by Oliveira and Martins (2011), who determined that the most dominant construct for social media adoption is the owner's characteristics, rather than external and organisational characteristics. A similar study was conducted to investigate the factors influencing the SMEs' adoption of e-commerce in Egypt (Rabie, 2013).

Previous research has highlighted several characteristics that also play a significant role in social media adoption: self-esteem, self-confidence, self-efficacy (Adam *et al.*, 2016), and autonomy. Self-esteem has been described as the pride of having a sense of self-worth (Cyr, 1992). It is a critical indicator of core self-evaluation as it is the overall value that an individual will place on themselves (Williams *et al.*, 2006). Moreover, the literature has suggested that entrepreneurs with a high perception of their skills, talents, and abilities will have a strong feeling of self-worth and self-esteem (Roberts and Robinson, 2010). Meanwhile, self-confidence refers to the individual's conviction about their abilities to achieve a specific task successfully within a certain context (De Jorge Moreno *et al.*, 2007). It is the human feeling of trust in one's qualities, abilities, and judgement (Gelaidan and Abdullateef, 2017). Within entrepreneurship studies, self-confidence has been equally related to other characteristics such as risk-taking, capacity to tolerate uncertainty, and locus of control (Dinis *et al.*, 2013). Moreover, self-confidence, together with the need for positive attitude and achievement, has been proven to affect entrepreneurial intention (Ferreira *et al.*, 2012). High levels of self-confidence help individuals sustain effort until goals are achieved (De Jorge Moreno *et al.*, 2007).

Meanwhile, it is to be noted that individuals are more involved in activities in which they have a high level of self-efficacy (Adam *et al.*, 2016). Self-efficacy has also been associated with technology adoption by Hsu and Chiu (2004), who demonstrated that self-efficacy is positively linked to the owner's intention to use the Internet. Moreover, Hocevar *et al.* (2014) determined a positive relationship between self-efficacy over social media and the reliability of online information. Mohd *et al.* (2014) also showed that individuals who have a high level of self-efficacy have the potential to take risks and be innovative. The last characteristic is autonomy; this refers to the amount of freedom and decision rights regarding what, when, and how work is done (Gelderen, 2016). Autonomy is a primary motivator for entrepreneurs (Shane *et al.*, 2003) to start and run their own ventures (Alstete, 2008).

Many well-established theories are related to technology adoption, such as the theory of planned behaviour (TPB) (Taylor and Todd, 1995), the diffusion of innovation theory (DOI) (Rogers

et al., 2009), the technology acceptance model (TAM) (Venkatesh and Davis, 2000) and Iacovou *et al.*'s (1995) model. TPB is a popular theory in social sciences (Ajzen, 1991) and is an extension of the theory of reasoned action (TRA). TPB proposes the three constructs used to predict an intention to use a certain innovation: attitude, subjective norms, and perceived behavioural control. Attitude describes a person's (favourable/unfavourable) evaluation of the behaviour; subjective norms constitute the social pressure that leads to performing the target behaviour; and perceived behavioural control is the extent to which a person feels able to enact the behaviour (Idris *et al.*, 2017). TPB fulfils the goal of explaining human behaviour, not merely predicting it, by studying attitudes, subjective norms, and perceived behavioural control, to determine both intentions and actions (Ajzen, 1991). It has been applied empirically to explain technological adoption, such as e-commerce adoption in Botswana (Uzoka *et al.*, 2017), where attitude seems to outweigh the subjective norm and perceived behavioural control. TPB was also used to explain the intentions and behaviours of SMEs regarding social media adoption (McLaughlin and Stephens, 2015), by studying the owner or manager's decision-making process. Therefore, the owner/manager's own attitude towards social media best explains their decision to incorporate it within business activities (McLaughlin and Stephens, 2015). Therefore, studying their attitude and motivations becomes crucial in this context, and employing TPB fits the purpose of this research.

Mandal and McQueen (2012) highlighted that the desire to achieve goals was also an important indicator of social media adoption in micro-businesses, consistent with the findings in the literature (Bagozzi, 2008). Goals reflect several attitudes, including escaping boredom, looking for job opportunities, reaching wider connectivity, making more money, achieving self-actualisation, and pursuing a work-life balance (Alkhowaiter, 2016; Beninger *et al.*, 2016; Cesaroni *et al.*, 2017; Ukpere *et al.*, 2014).

Findings confirm a positive relationship between the management's attitude, innovation characteristics, and e-commerce adoption; other factors, such as individual e-readiness, government support, and other organisational characteristics (e.g., firm activity, size, and employees' IT knowledge), are also influential. Of the few researchers investigating the adoption of e-commerce within Egyptian SMEs, Rabie (2013) concluded two different sets of benefits that encourage micro-enterprises to start as an informal online business (Devaraj *et al.*, 2008). These are direct perceived benefits, which include reduced transaction costs and developed information quality, and indirect perceived benefits, such as improved customer service and a strengthened ability to compete (Beatty *et al.*, 2001). Other factors include growth of the Internet, organisational culture, technical compatibility, and overall cost (Alam, 2009). Based on the DOI, these factors can be summarised in perceived benefits (minimising direct and indirect costs), trialability, and observability.

TPB has previously been criticised for ignoring SMEs' contextual nature; therefore, Parker and Castleman (2009) suggested that researchers should seek to combine it with other explanatory theories to capture a fuller perspective of technological adoption. Idris *et al.* (2017) supported the view that TPB on its own cannot be used to understand e-commerce adoption in SMEs in

developing countries, as it ignores factors such as readiness, infrastructure, and SME resources. Meanwhile, Oliveira and Martins (2011) indicated the importance of combining more than one theoretical model in future studies to better understand the adoption of complicated innovation technologies.

DOI is a popular and frequently used theory to study technology adoption (Alam, 2009) and explains the way in which new technology creates its way from creator to user (Javed *et al*., 2021). Based on broad psychological and sociological theories, it evaluates the reason, the way and the rate at which new ideas and technology are communicated and adopted (Rahayu and Day, 2015). Through a "process-oriented" perspective (Yu and Tao, 2009), DOI suggests that an individual's decision about an innovation is not an immediate act but a process of innovation decision passes from first knowledge of an innovation to forming an attitude towards the innovation (persuasion) that occurs over time (Peslak *et al*., 2010). It also includes taking a decision of adopting, rejecting and implementing a new idea to ensure this is the right decision. The individual/organisation evaluates whether to adopt the new idea and make it an ongoing process (Rogers, 1983).

The DOI theory has been previously used to explain the adoption rate of innovations, such as automatic teller machines (ATM) in Nigeria (Olatokun and Igbinedion, 2009), 3G mobile phones in China (Zhenghao *et al*., 2009), developing electronic social entrepreneurship in Pakistan (Javed *et al*., 2021), adoption and use of e-commerce activities by SMEs (Idris *et al.*, 2017), as well as explaining social media usage among users and SMEs (Peslak *et al.*, 2010; Ainin *et al*., 2015).

Within the context of this study, DOI is applied at the individual level (entrepreneur) in micro-enterprises, where the decision to use social media represents the readiness to adopt DE. Three characteristics of DOI theory (Rogers, 1983) are integrated into the proposed framework, namely, perceived benefits, trialability, and observability. Perceived benefits refer to the relative advantage of, or the degree to which, the entrepreneur perceives social media to be positively related to the efficiency/effectiveness of the business compared to the existing processes. Meanwhile, trialability refers to the extent it can be tried out before actual adoption. Lastly, observability refers to the ease and relative advantage with which the technology can be explained, portrayed, and seen to possible adopters thereof.

Based on the above literature, this present study combines the DOI theory and TPB and the owner's characteristics (Mandal and McQueen, 2012), and examines the determinants that have a significant effect on DE adoption by women and male youths MSE owners in Egypt, as shown in the framework in Figure 1.

The following hypotheses are tested:

H1: The personal characteristics of the entrepreneurs significantly affect the adoption of DE.

H2: The attitudes and goals of the entrepreneurs significantly affect the adoption of DE.

H3: The perceived relative advantages and benefits of social media significantly affect the adoption of DE.

H4: The trialability attribute of social media significantly affects the adoption of DE.

H5: The observability of social media significantly affects the adoption of DE.
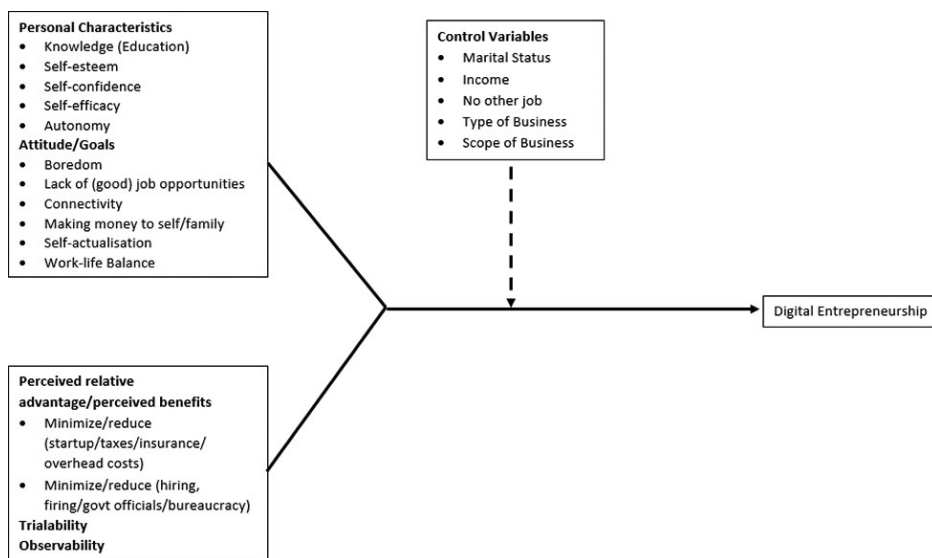

Figure 1: Proposed Research Framework

Source: Constructed by authors

METHODOLOGY

A self-assessment questionnaire was constructed, and data were collected (before the COVID-19 outbreak) through phone interviews with 408 Egyptian women and male youth entrepreneurs who own informal MSEs that only operate online. The self-assessment survey is a technique well-respected in the SME literature (Ahmad and Alaskari, 2014). The questionnaire was divided into four sections reflecting the framework of the study, based on the literature, the DOI and the TPB:

(1) personal characteristics of the entrepreneur (measuring self-esteem, self-confidence, self-efficacy, and autonomy);

(2) attitudes and goals;

(3) the perceived relative advantages and perceived benefits, the trialability, and the observability of DE; and

(4) biographical information (as shown in Table 1).

The survey questionnaire was created in English, translated into Arabic, translated back to English by a professional translator, and reviewed by the research team to avoid misinterpretation and ensure

its accuracy (Brislin, 1970). A professional firm conducted the interviews with the sample of digital entrepreneurs to guarantee the efficiency of the data collection process. The choice of participants was based on purposive sampling (a non-probability sampling technique) with a pre-determined criterion (Alvi, 2016). MSEs that had been operating online for at least one year were selected. The owners were Egyptian females or male youths living in Greater Cairo and were willing to engage in the survey (Fraenkel and Wallen, 1996). The data were analysed using SPSS version 20.

Table 1: Questionnaire Variables

Variables	Explanation	References
Personal Characteristics		
Self-esteem	I feel that I have a number of good qualities	(Lombardini *et al.*, 2017)
	I am able to do things as well as most other people	
	I am equal to my peers (e.g., sisters, friends, colleagues, etc.)	
Self-confidence	I often trust others' decisions over mine concerning my life	
	I am capable of overcoming challenges and achieving my goals	
	I am not afraid of asking for support when I need it	
Self-efficacy	I can always manage to solve difficult problems if I try hard enough	
	It is easy for me to stick to my aims and accomplish my goals	
	I can usually handle whatever comes my way	
Autonomy	I do not have problems in sharing my opinion in front of other people	
	I have full control in making personal decisions that affect my every day activities	
Goals (Reasons for starting an online business)		
Boredom	Boredom or desire to fill my time with something beneficial	(Ukpere *et al.*, 2014; Alkhowaiter, 2016; Beninger *et al.*, 2016; Cesaroni *et al.*, 2017)
Lack of job opportunities	I did not find a job	
	My other job options were unsatisfactory	
Connectivity	It started by wanting to interact with people then it turned into a business	
Making money	Making money for myself	
	Making money for my family	
Self-actualisation	Self-actualisation	
Work-Life Balance	Better work-life balance	

(continued)

Table 1: Questionnaire Variables *(continued)*

Variables	Explanation		References
Innovation Attributes			
Minimise direct costs	Low start-up and running cost		(Abd El-Fattah, 2012)
	Avoid paying high taxes		
	Avoid paying workers' insurance and other un-needed costs		
	Avoid paying a lot of overhead costs		
Minimise trans. costs	Allows me to hire and fire workers if I feel the need to		(Angel-Urdinola and Semlali, 2010; Abd El-Fattah, 2012; World Bank, 2013, 2016)
	Spares me from dealing with the corruption of government officials		
	Spares me too much paperwork and bureaucracy		
Trialability	I wanted to try first if it is going to work and be profitable		(Rogers, 1983; Rogers *et al.*, 2009)
Observability	I saw other people do it so I thought I could do that myself		

Note: All questions are rated from 1 (strongly disagree) to 5 (strongly agree)
Source: Constructed by authors

As indicated in Table 2, the internal consistency coefficient (Cronbach's alpha) reflects the reliability of a scale. The coefficients of Cronbach's alpha ranged from 0.675 to 0.916, indicating good reliability of the questions. Moreover, the inter-item correlation for all items is greater than 0.5, supporting the questionnaire's intrinsic validity. Table 3 shows the correlation across concepts; this determines the degree of internal correlation vs. external correlation.

Table 2: Reliability and Validity of Variables

Variable	Reliability Measure (Cronbach Alpha)	Intrinsic Validity
Personal Characteristics	0.677	0.567
Self-Esteem	0.806	0.581
Self-Confidence	0.675	0.509
Self-Efficacy	0.818	0.600
Autonomy	0.816	0.609
Attitude/Goals	0.783	0.584
Social medial perceived benefits	0.679	0.640

Source: Constructed by authors

Table 3: Correlations Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 DE	1																			
2 Education	.287***	1																		
3 Selfesteem	-.090	.184***	1																	
4 Selfconf	-.151***	.238***	.586***	1																
5 Selfeffic	.257***	.414***	.169***	.201***	1															
6 Autonomy	-.019	.438***	.375***	.405***	.253***	1														
7 Boredom	-.266***	-.180***	.190***	.270***	-.250***	.137***	1													
8 Lack_of_job	.427***	.722***	.045	.055	.432***	.240***	-.275***	1												
9 Connectivity	-.204***	-.176***	.180***	.270***	-.220***	.162***	.710***	-.261***	1											
10 Makin_money	.410***	.552***	.029	-.024	.198***	.231***	-.224***	.655***	-.204***	1										
11 Self-Actualisation	.337***	.083	-.104**	-.201***	.240***	-.225***	-.433***	.233***	-.438***	.154***	1									
12 Work-Life_Balance	.328***	.410***	-.009	-.047	.309***	.018	-.313***	.455***	-.342***	.462***	.451***	1								
13 min_direct_cost	.519***	.679***	.017	.026	.478***	.205***	-.341***	.783***	-.366***	.615***	.281***	.511***	1							
14 min_transa_cost	.119**	.525***	.273***	.435***	.310***	.423***	.207***	.382***	.177***	.293***	-.129***	.132***	.469***	1						
15 Observability	-.095	-.039	.104**	.135***	-.021	-.015	.375***	-.075	.408***	-.052	-.221***	-.183***	-.104**	.143***	1					
16 Trialability	.266***	.255***	-.123**	-.144***	.305***	-.126**	-.420***	.355***	-.365***	.297***	.458***	.410***	.421***	.088	-.099**	1				
17 Marital_status	-.007	.093	.203***	.392***	.166***	.145***	.149***	.081	.233***	-.027	-.147***	-.100**	.082	.274***	.255***	.021	1			
18 income	.235***	.143***	-.208***	-.248***	.171***	-.173***	-.349***	.271***	-.405***	.199***	.401***	.317***	.243***	-.113**	-.254***	.241***	-.212***	1		
19 activity	.210***	.588***	.242***	.150***	.287***	.610***	-.055	.467***	-.059	.422***	-.026	.268***	.473***	.338***	-.287***	.032	-.020	-.047	1	
20 Type of Business	.170***	.347***	.007	.068	.210***	-.013	-.149***	.382***	-.094	.309***	.037	.123**	.391***	.251***	.200***	.239***	.247***	.116**	-.048	1

Note: *** and ** represent significance (2-tailed) at 1% and 5%, respectively

Source: Constructed by authors

FINDINGS

Figure 2 displays the demographic variables (education and control variables, gender, and age). To include these variables in the regression model, this study made some changes to allow them to be added as categorical variables, where the category with the most responses took the value of 1, and the other category took the value of 0. The type of business has three categories, and each category on its own might be important to understand how it affects DE. Therefore, they are not grouped. Instead, the category of make and sell products is taken as the reference category, and two dummy variables are created for the remaining two categories; each took the value of 1 if the business type belonged to its own category, and 0 otherwise.
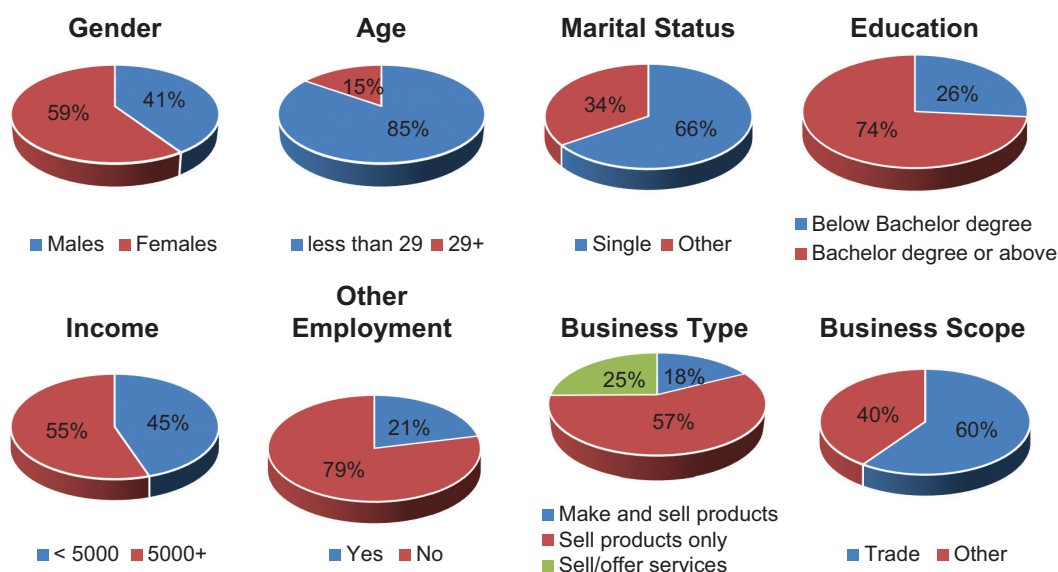

Figure 2: Descriptive statistics for categorical demographic variables
Source: Constructed by authors

DESCRIPTIVE STATISTICS

Table 4 shows the descriptive statistics of the independent variables, where attitude/goals, perceived benefits, observability, and trialability are all based on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The personal characteristics, except for education, are based on Lombardini *et al*. (2017).

Table 4: Descriptive Statistics of the Dependent and Independent Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Digital Entrepreneurship	408	1.00	5.00	4.59	0.756
Self-Esteem	408	1.34	3.00	2.42	0.29
Self-Confidence	408	1.34	3.00	2.31	0.39
Self-Efficacy	408	1.00	3.00	2.78	0.38
Autonomy	408	1.00	3.00	2.73	0.43
Boredom	408	1.00	5.00	2.53	1.47
Lack of job opportunities	408	1.00	5.00	4.08	1.16
Connectivity	408	1.00	5.00	2.50	1.49
Making money	408	1.00	5.00	4.61	0.70
Self-actualisation	408	1.00	5.00	4.60	0.60
Work–life balance	408	1.00	5.00	4.41	0.83
Minimise direct costs	408	1.75	5.00	4.32	0.80
Minimise transaction costs	408	1.00	5.00	3.52	0.82
Tribality	408	1.00	5.00	4.30	0.80
Observability	408	1.00	5.00	3.22	1.55

Source: Constructed by authors

THE MODEL AND ANALYSIS

Based on the above, the regression model can be written as

$$
\begin{aligned}
Digital\ Entrp. = {} & \beta_0 + \beta_1 * education + \beta_2 * self\ esteem + \beta_3 * self\ confidence + \beta_4 * self\ efficacy \\
& + \beta_5 * autonomy + \beta_6 * boredom + \beta_7 * lack\ of\ job + \beta_8 * connectivity \\
& + \beta_9 * making\ money + \beta_{10} * self\ actualisation + \beta_{11} * work\ life\ balance \\
& + \beta_{12} * min.direct\ cost + \beta_{13} * min.trans.cost + \beta_{14} * trialability \\
& + \beta_{15} * observability + \beta_{16} * marital\ status + \beta_{17} * income \\
& + \beta_{18} * type\ of\ bussiness + \beta_{19} * scope\ of\ business + \varepsilon
\end{aligned}
$$

The dependent variable is proxied by a question asking the participants to rate the following statement on a 5-point Likert scale: "If it were not for social media, I would not have started my business". Before estimating the regression model, the normality of the dependent variable is checked by employing the one-sample Kolmogorov test; this showed that it is not normally distributed. However, a sample size of 30 to 50 participants can be used to run parametric tests, especially in multivariate research (Sekaran, 2003); the present study's sample size is 408. Therefore, the regression results will still be precise and accurate.

Stepwise multiple regression is applied to categorise the independent variables according to their significant effect on the dependent variable. The limitations of stepwise regression were considered through the variance inflation factor (VIF) test; this assured no collinearity problem (Chatterjee and Hadi, 2013) since all VIF values are less than 10. Therefore, the stepwise multiple linear regression analysis is appropriate to test the hypotheses (Sekaran, 2003).

As shown in Table 5, the adjusted R^2 is 0.34, indicating that the model could infer 34% of the total variance in the DE variable. Meanwhile, the probability F-statistic is 0.00, signalling the model's soundness and better predictability of the dependent variable than the intercept-only model. Moreover, the value of Durbin Watson is close to 2, indicating no serial autocorrelation between residuals.

Table 5: Regression Coefficients of Included Variables with Their VIF

	Coefficient (Std. Err.)	VIF
Constant	1.443*** (0.403)	
Min direct cost	0.392*** (0.052)	1.861
Self-actualisation	0.278*** (0.058)	1.283
Self-confidence	-0.141*** (0.042)	1.12
Making money	0.149*** (0.055)	1.618
Connectivity	0.057** (0.025)	1.43
No. of Obs.	408	
R-Squared	0.35	
Adjusted R-Squared	0.34	
F-Statistic	42.44	
Prob > F	0.00	
Durbin Watson	1.80	

Note: *** and ** represent significance at 1% and 5% levels, respectively
Source: Constructed by authors

DISCUSSION

For the included variables, self-confidence has a negative and significant effect on DE with a coefficient of -0.141. This might seem surprising, as it is in contradiction with previous studies that concluded that self-confidence is an antecedent of entrepreneurial intention (Macredie and Mijinyawa, 2011). It is understandable, however, as social media usage adds a new dimension to

entrepreneurship; this is the "online" aspect that implies changes in entrepreneurial behaviour. This also suggests that technology encourages individuals with low self-confidence to have the courage and motivation to be "digital" entrepreneurs. This expands the opportunities for job creation and income generation (Aljuwaiber, 2021). In contrast, minimising direct cost, self-actualisation, making money, and connectivity positively and significantly affect DE with coefficients 0.392, 0.278, 0.149, and 0.057, respectively. This agrees with previous literature that proposes that the goals and attitudes have a positive and significant effect on DE (Alkhowaiter, 2016; Beninger *et al.*, 2016). All other independent variables are insignificant, as the p-values associated with these variables are greater than 5%. Similarly, all control variables are also insignificant.

The above analysis indicates that the findings reveal the internal and external determinants affecting the creation of online businesses. Individuals seeking more income or money, pursuing connection with others, and needing to achieve self-actualisation mainly engage in DE (Cesaroni *et al.*, 2017; Ukpere *et al.*, 2014). They are driven mostly by the desire to minimise costs, avoid taxes, and reduce overheads (Alam, 2009). Therefore, they are responding to push factors more significantly, and failure to achieve them—not making more money or not achieving self-actualisation—may discourage the formalisation of these businesses, leading these economic activities to remain in the shadow of the country's economy. Comparing the results in the case of women and youth, there is only one aspect that is different; this is the entrepreneurial behaviour support that is more significant in the case of women than for youths as a result of digital entrepreneurship. However, new venture creation does not differ.

Looking at the proposed hypotheses, the following can be concluded. H1, H2 and H3 are partially supported, since not all characteristics (only self-confidence) nor all attitudes and goals (only seeking more money, connectivity, and self-actualisation) nor all perceived relative advantages and benefits (only reducing direct cost) of social media have a significant effect on DE adoption. Neither H4 and H5 are supported.

CONCLUSIONS

This study's findings are timely as they have important theoretical, practical, and policy implications that will complement entrepreneurship theory and support the creation of micro-enterprises in these challenging times. Digital technology can provide many benefits to entrepreneurs, such as faster communication not restricted by time or location, making easy and convenient access to information and networks as well as international markets (Hansen, 2019). In a broader perspective, DE facilitates the exploration and exploitation of entrepreneurial opportunities because of leveraging digital technologies and digital business models (Soltanifar *et al.*, 2021), especially for youths and women, thus supporting similar observations in countries of the region, like Saudi Arabia (McAdam *et al.*, 2020). This entrepreneurial action, aided by digital technologies, has led to the creation and expansion of digital economies (Zaheer *et al.*, 2019) and the formation of communities of youth and women who would otherwise have no employment. Countries in the MENA region

have witnessed similar developments and have become flourishing hubs of commercial innovation and entrepreneurship; they are currently exhibiting continuous growth due to the increase in access of technology and the expansion of the digital economy (Aljuwaiber, 2021). The Arab region is pursuing the creation of the economic ecosystem necessary for entrepreneurship to thrive. There is, therefore, an increasing need for an integrated policy environment that encourages entrepreneurial ventures to start and develop (Momani, 2017).

On the theoretical side, the study contributes to the stream of research that highlights the personal characteristics differentiating entrepreneurs from other groups (Josien, 2008), leading to entrepreneurial behaviour resulting in new venture creation. On the practical side, the study identifies the determinants of DE on two levels: the internal and external level of the entrepreneur and the MSE. The internal level includes the entrepreneurs' characteristics and attitudes, whereas the external level examines the perceived benefits in the external environment. The determinants identified on the first level are self-confidence, self-actualisation, making money, and pursuing connections with more people. Self-confidence is a personal characteristic, whereas the last three are the internal goals/attitudes of the entrepreneur. In the second level, the determinant identified is minimising direct cost and therefore improving performance (Ahmad and Alaskari, 2014), which is external and refers to the perceived benefits of DE. Policy-makers should target this group of individuals and provide them with the appropriate training and capacity building to effectively pursue DE. Other players in the ecosystem (for example, the private sector, schools, universities, and NGOs), can have a supporting role in providing the necessary training and capacity building.

LIMITATIONS

There are no official statistics regarding the number of Egyptian SMEs or even the number of businesses utilising e-commerce: consequently, the relevant sample size is difficult to determine (Rabie, 2013). Therefore, despite filling an important gap in the research on informal MSEs in Egypt ignored by economists and researchers, this study is more of an exploratory study rather than one that merits generalisations. Only entrepreneurs in the Greater Cairo area were approached and this does not reflect the whole population of female and young male entrepreneurs adopting DE. Furthermore, not all types and scopes of businesses are included proportionally in the sample, as most participants were from the service and trade sectors.

FUTURE RESEARCH RECOMMENDATIONS

Future studies should target entrepreneurs from all over the country and not just in big cities. They should also involve other popular sectors such as manufacturing and the agricultural production sectors. This will give a broader view of the Egyptian entrepreneurial landscape. The government, the private sector, and NGOs in Egypt have several initiatives to provide training opportunities and support DE (e.g., Google Maharat that offers subsidised courses to train entrepreneurs on the most effective use of social media to support the creation, development and performance of their

ventures). Future research should evaluate these endeavours and examine the significance of the variables identified in this study and if other factors play a significant role. Based on the findings and the analysis, it is also recommended to examine the relationship between the push factors of entrepreneurship and the intention to formalise. It would be interesting to compare these results with research conducted in developed countries and develop common and different variables.

ACKNOWLEDGMENTS

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