

The Impact of the Covid-19 Crisis on the Health Status of the Managers of Small and Medium Enterprises in Morocco

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Abstract

The COVID-19 pandemic has posed serious threats to the physical and mental health of the managers of small and medium enterprises (SMEs) in Morocco. The health capital of leaders is the first intangible capital of the SME, in addition, the physical and mental health of the entrepreneur is reflected in the health of the company. It has also triggered a wide range of psychological reactions such as panic, anxiety, and depression. The main objective of this study is to investigate the impact of the Covid-19 pandemic on the health status of SME managers in Morocco, which will hopefully contribute to informing the intervention policies to address this challenge efficiently and effectively. So, the main question this study addresses is: what is the impact of the current crisis (pandemic Covid-19) on the health status of our entrepreneurs? In terms of methodology, two questionnaires were used, the first one concerns the measurement of the burn-out of SME managers during the covid-19 pandemic, using a version of Maslach burn-out inventory, and the second questionnaire "The COVID-19 Peritraumatic Distress Index (CPDI)", the questionnaire was adapted from the Shanghai Mental Health Centre. The data processing was carried out by SPSS, using the method: Analysis in Principal Components. The results of our study show that the risks of burnout have increased during the Covid-19 crisis, which might lead to the failure of SMEs. The Covid-19 has an impact on SME managers' health, according to our research's main findings. The burnout scale reached a mean of 26.55, with 30% representing very burned-out leaders. We found that the average depersonalization score was 11.6, which means that 45 percent of managers have mild burnout. The results of burnout are confirmed by the high personal achievement score.

Keywords: SMEs, Managers, Executive health, Pandemic Covid-19.

JEL Classification: M20, M21, I10

Paper type: Empirical research

Résumé

La pandémie de COVID-19 a fait peser de graves menaces sur la santé physique et mentale des dirigeants de petites et moyennes entreprises (PME) au Maroc. Le capital santé des dirigeants est le premier capital immatériel de la PME, de plus, la santé physique et mentale de l'entrepreneur se répercute sur la santé de l'entreprise. Elle a également déclenché un large éventail de réactions psychologiques telles que la panique, l'anxiété et la dépression. L'objectif principal de cette étude est d'étudier l'impact de la pandémie de Covid-19 sur l'état de santé des dirigeants de PME au Maroc, ce qui contribuera, nous l'espérons, à éclairer les politiques d'intervention pour relever ce défi de manière efficace et efficiente. La question principale de cette étude est donc la suivante : quel est l'impact de la crise actuelle (pandémie de Covid-19) sur l'état de santé de nos entrepreneurs ? En termes de méthodologie, deux questionnaires ont été utilisés, le premier concerne la mesure de l'épuisement des dirigeants de PME pendant la pandémie de covid-19, en utilisant une version de l'inventaire d'épuisement de Maslach, et le second questionnaire "The COVID-19 Peritraumatic Distress Index (CPDI)", le questionnaire a été adapté du Centre de Santé Mentale de Shanghai. Le traitement des données a été effectué par SPSS, en utilisant la méthode : Analyse en Composantes Principales. Les résultats de notre étude montrent que les risques d'épuisement professionnel ont augmenté pendant la crise du Covid-19, ce qui pourrait conduire à la faillite des PME. Le Covid-19 a un impact sur la santé des dirigeants de PME, selon les principaux résultats de notre recherche. L'échelle d'épuisement professionnel a atteint une moyenne de 26,55, avec 30 % représentant des dirigeants très épuisés. Nous avons constaté que le score moyen de dépersonnalisation était de 11,6, ce qui signifie que 45 % des dirigeants souffrent d'un léger épuisement professionnel. Les résultats de l'épuisement professionnel sont confirmés par le score élevé d'accomplissement personnel.

Mots clés: PME, Dirigeants, Santé des dirigeants, Pandémie Covid-19.

Classification JEL: M20, M21, I10

Type de l'article: Recherche appliquée

1. Introduction

The health of SME managers is a topic of great importance for a number of reasons, including the importance of SMEs to the Moroccan economy, the crucial role that managers play in SMEs, the small size of these businesses, the significance of the proximity concept as a management strategy for SMEs, and the manager's intense dependence on the company when the latter is very small. The World Health Organization (WHO) defines health as a condition of total well-being that takes into consideration the physical, mental, and social well-being of an individual. Furthermore, according to Torres, the relationship between pathogenic and salutogenic elements determines the health of leaders (2013)'' The health of entrepreneurs is subject to permanent conflict between pathogenic factors, which have a negative impact on health, and salutogenic factors, which are beneficial''.

Although the pandemic has affected every country in the world, yet the impact triggered by COVID-19 does not affect everyone equally and especially businesses. With fewer resources to deal with this health crisis, SMEs have been particularly vulnerable to the repercussions of the crisis, given their particularities in terms of management style and financial resources. Along with having an effect on public health, COVID-19 also had a significant economic shock. This article examines COVID-19's effects on Morocco's small business environment with a specific focus on how the epidemic has affected small and medium-sized business executives' well-bein.

The COVID-19 pandemic has been posing significant threats to people's health and well-being worldwide. Because of its huge impact on the economy and business, there has been a particular concern with the threats it poses on the physical and mental health of SME managers. This unprecedented crisis has definitely brought about a wide range of psychological reactions. With a high rate of infection and deaths, COVID-19 can lead to many psychological problems including stress, anxiety, depression, fear (Arslan, Yıldırım, Tanhan, et al., 2020), and possibly burnout.

The main objective of this study is to investigate the impact of the Covid-19 pandemic on the health status of SME managers in Morocco, and consequently, to provide a concrete basis for adapting and implementing relevant mental health intervention policies to address this challenge efficiently and effectively. Thus, the main question this study tries to approach is: what is the impact of the current crisis (Covid-19 pandemic) on the health status of Moroccan entrepreneurs?

Several researchers have recently highlighted the need to investigate the issue of entrepreneurs' health status, which remains an under-researched area despite its importance (Torrès, 2009; Volery and Pullich, 2010; Torrès and Hiroki Ogyu, 2011; Vanepps and Hayes, 2012; Ben Tahar and Torrès, 2013; Pollack, Torrès and Chabaud, 2013; Lechat, 2016; Torrès and Thurik, 2018; Torrès and Kinowski-Moysan, 2019; Dominika Wacha and Ute Stephan, 2020).

The health capital of leaders is the first intangible capital of the SME, (Stephan, 2018; Torrès, 2012; Torrès & Thurik, 2019), and even though the death of the leader of a multinational company such as Apple and Total have no impact on the continuity of these companies, the vulnerability of SMEs is noticeable in the case of illness or death of their leaders. Thus, the study of the health status of the leaders of SMEs is deemed necessary to know how to prevent the risk of an entrepreneurial burn-out and an eventual business failure (Amankwah, 2018; Ait Ali, 2022).

The study is divided into three sections in addition to the introduction and conclusion. A review of the literature on the state of SME leaders' health is included in the study's first

section. The methodology, sample, and variables of this study are explained in the second part. The study's empirical findings and conclusions are presented in the third section.

2. Literature Review

The health of leaders is an understudied topic, especially in terms of the entrepreneurship component, (Lechat & Torrès, 2016; Alphonse-Tilloy & Scoyez-Van Po, 2013; Torrès, 2012; Bournois & Roussillon, 2011). "The health of managers remains little studied from the perspective of real work .This leads to a more fundamental question: does the absence of a formal subordination link make the leader a stranger to the sphere of work, escaping the tensions and paradoxes to which employees and middle managers are subjected and which weigh on their health?" (Gentil, S., Grimand, A., Journé, B. & Michel, X.2019).

2-1. Health capital:

A substantial body of research has been carried out to explore and justify the important roles leaders and SMEs play in the economy . Yet, little attention has been given to the health of the company and its leader. In fact “ the SME is well known - even scrutinized - while the human is absent from the picture"(Degeorge and Chabaud, 2013). Torres, Guiliani, (2017), states that there is an almost universal lack of information about the many components of SME leaders' health, and sleep is no exception. Torrès (2016) emphasizes the importance of occupational health which “nowadays seems to be distant from the employer, craft, entrepreneurial world, that is, the world of employers and self-employed or independent workers”.

Significantly, The death of leaders of multinational companies such as Total’s presidents in 2014 or Apple’s CEO; Steve Jobs in 2011 has not much affected their businesses (at the level of organizational stability, financial stability, brand image, turnover...). On the other hand, the death of a leader of an SME always has an impact on these companies, since in most cases such businesses are doomed to failure and bankruptcy, and as Torrès O, Thurik Roy (2019) points out: "The health capital of the owner is the most important immaterial capital of a small firm. The smaller the firm the bigger its vulnerability in case of a health problem of the owner, be it physical or mental ”.

The impact of the death of a CEO is different for small and medium-sized companies. Henry Mintzberg (1979) Clarifies that "the Simple Structure is also the riskiest of structures, hinging on the health and whims of one individual. One heart attack can wipe out the organization's prime coordinating mechanism”. About the theory of magnification effects (Mahé de Boislandelle, 1996), the smaller the size of the organization, the greater the consequences of a manager's burnout, even catastrophic (risk of bankruptcy). (Torrès and Kinowski-Moysan, 2019).

2-2.The Mental Health of the Entrepreneur in the Covid-19 era

During the Covid-19 pandemic, the situation at the national and international level was marked by the disturbance of the economic environment resulting in the closure of borders and the blockage at the level of supply and global logistics. The future of the world economy and business has become uncertain and unpredictable. Fear of the unknown is probably one major stress factor which affects leaders and aggravate the certainty that they might lose the businesses they have been devoting their lives and names to.(Bourginaud V,M, 2016). At the level of companies and especially SMEs, several studies have found a cognitive overload on leaders and an impact on the mental and physical health of the entrepreneur. (Murat Yıldırım & Fatma Solmaz ,2020. Arslan, Yıldırım, Tanhan, et al., 2020, Brooks et al., 2020).

The concept of mental health has grown very significantly, especially in psychology, through the use of measurement tools such as the Maslach Burnout Inventory (Jamal, 2007, 2009; Taris et al., 2008; Wincent et al., 2008) or the Goldberg Depression Scale (Parslow et al., 2004) to measure burnout. Others use the Caplan Job Stress Questionnaire (Aitken et al., 1999), the Rizzo, House and Lirtzman Job Stress Scale (Jamal, 1997), or the Perceived Stress Scale (Kriv, 2008) to measure stress (Cynthia Ann Sheehan, Etienne St-Jean, 2014).

The stress event theory (SET) which was developed by Lerman et al. (2020), suggests that entrepreneurs interpret and react to events based on event characteristics (strength and duration), the accuracy of interpretation, and developed resources and assessment coping mechanisms. The theoretical lens of SET can be useful to understand entrepreneurial behavior during the event of the COVID-19 pandemic, particularly the entrepreneur's perception of burnout. (Torrès, O., Benzari, A., Fisch, C. et al. (2021).

Maintaining positive mental health is as crucial as maintaining physical health during a pandemic. Given the possibility of adverse outcomes of COVID-19 on people's psychological health, it is important to study psychological factors affecting the mental health of individuals such as depression, stress, and anxiety. (Murat Yıldırım & Fatma Solmaz , 2020).

The physical and mental health of the entrepreneur is reflected in the health of the company. The presence of stress in the professional setting is a breeding ground for the development of burnout (Ben Tahar, 2011). Burnout begins with exhaustion, followed by depersonalization, and loss of efficiency. As a result, WHO (2019) has recognized burnout as a work-related phenomenon and defines it as "a syndrome resulting from chronic work stress that has not been properly managed", (Torrès and Kinowski-Moysan 2019).

According to health specialists, burn-out is composed of three essential components: emotional exhaustion, depersonalization, and loss of a sense of accomplishment. For Maslach (1982), it is "a syndrome of emotional exhaustion, depersonalization, and loss of a sense of self-efficacy, which may occur in individuals who work in any way with other human beings. It is a reaction to the chronic emotional burden of caring for others over a long time, especially when they are in need or have problems"(Maslach, 1982).

Maslach and Leiter defined burnout as "an indication of the disconnect between who people are and what they need to do. It represents an erosion of values, dignity, spirit, and will - an erosion of the human soul. It is a suffering that gradually and continuously builds up, sucking the person into a downward spiral from which it is difficult to escape. What happens when burnout overtakes you? Three things happen: you feel chronically exhausted; you become cynical and detached from your work; and you feel increasingly ineffective in your job"(Maslach and Leiter, 1997).

3. Methodology

The measurement of burnout is dominated by the Maslach Burnout Inventory (MBI), which has reached almost 90% of the scientific literature. Many other scales, sometimes more recent, offer interesting theoretical and practical alternatives to the MBI. (Philippe Zawieja, Franck Guarnieri, 2013). The variables that can be studied and concerning the physical and mental health of the SME manager: sleep quality, work overload, stress, eating habits (consumption of coffee, alcohol, tobacco), the practice of sport. (Buysse D.J., Reynolds III C.F., Monk T.H., Berman S.R., Kupfer D.J., 1989; Malach-Pines, A. 2005).

3. 1. Data

The COVID-19 Peritraumatic Distress Index (CPDI) questionnaire was adapted from the Shanghai Mental Health Centre. Qiu J, Shen B, Zhao M, et al (2020). The first part of the questionnaire consists of a set of control variables (gender, level of education, sector of

activity, number of employees, and professional status). The second part of the questionnaire (Table 1) concerns the Maslach Burnout Inventory, which consists of 22 questions that explore three scales (Maslach and Jackson, 1981): emotional exhaustion (9 items), depersonalization (dehumanization or cynicism) (5 items), and a sense of personal accomplishment (8 items).

One of the most used methods for assessing burnout in various settings is the Maslach Burnout Inventory (MBI). Three components are identified by the MBI tool as indicators of the dimensions of burnout, depersonalization, and personal achievement.

Table 1: Measurement items (Maslach Burnout Inventory)

Items	Questions
Burnout	
BUR 1	I feel emotionally exhausted because of my work
BUR 2	I feel worn out at the end of a working day
BUR 3	I feel tired as soon as I get up in the morning and see a new working day stretched out in front of me
BUR 4	Working with people the whole day is stressful for me
BUR 5	I feel burned out because of my work
BUR 6	I feel frustrated by my work
BUR 7	I get the feeling that I work too hard
BUR 8	Being in direct contact with people at work is too stressful
BUR 9	I feel as if I'm at my wits' end
Depersonalization	
DEP 1	I get the feeling that I treat some clients/colleagues impersonally, as if they were objects
DEP 2	I have become more callous to people since I have started doing this job
DEP 3	I'm afraid that my work makes me emotionally harder
DEP 4	I'm not really interested in what is going on with many of my colleagues
DEP 5	I have the feeling that my colleagues blame me for some of their problems
Personal Achievement	
PAC 1	I can easily understand the actions of my colleagues/supervisors
PAC 2	I deal with other people's problems successfully
PAC 3	I feel that I influence other people positively through my work
PAC 4	I feel full of energy
PAC 5	I find it easy to build a relaxed atmosphere in my working environment
PAC 6	I feel stimulated when I been working closely with my colleagues
PAC 7	I have achieved many rewarding objectives in my work
PAC 8	In my work I am very relaxed when dealing with emotional problems

Source: Authors

The third part of the questionnaire adapted from The COVID-19 Peritraumatic Distress Index (CPDI) (Table 2), on the other hand, includes questions on the current COVID 19 pandemic (24 questions) with a five-point Likert scale ranging from 1: "Never" to 5: "Always", which will allow the score to be interpreted as follows: A total score; 0-28 is normal; >28 and ≤ 51 indicates mild to moderate distress; ≥52 indicates severe distress. Shrestha, D.B., Thapa, B.B., Katuwal, N. et al (2020). Thus the fourth part of the questionnaire is composed of the questions, namely physical, mental health status and sleep quality, and risk of bankruptcy filing during pandemic Covid-19.

Table 2: Measurement items (Stress & information)

Items	Questions
<u>Information</u>	
Info 1	I feel insecure and bought a lot of masks, medications, sanitizers, gloves and/or other home supplies.
Info 2	I can't stop myself from imagining myself or my family being infected and feel terrified and anxious about it.
Info 3	I feel helpless and angry about people around me, governors, and media.
Info 4	I collect information about COVID-19 all day. Even if it's not necessary, I can't stop myself.
Info 5	I will believe the COVID-19 information from all sources without any evaluation.
Info 6	I would rather believe in negative news about COVID-19 and be skeptical about the good news.
Info 7	I am constantly sharing news about COVID-19 (mostly negative news).
Info 8	I have frequent awakening at night due to my dream about myself or my family being infected by COVID-19.
<u>Stress</u>	
Stress 1	Compared to usual, I feel more nervous and anxious.
Stress 2	I feel helpless no matter what I do.
Stress 3	I am losing faith in the people around me..
Stress 4	I avoid watching COVID-19 news since I am too scared to do so.
Stress 5	I am more irritable and have frequent conflicts with my family.
Stress 6	I feel tired and sometimes even exhausted.
Stress 7	When anxious feelings, my reactions are becoming sluggish.
Stress 8	I find it hard to concentrate.
Stress 9	I find it hard to make any decisions.
Stress 10	During this COVID-19 period, I often feel dizzy or have back pain and chest distress.
Stress 11	During this COVID-19 period, I often feel stomach pain, bloating, and other stomach discomforts.
Stress 12	I feel uncomfortable when communicating with others.
Stress 13	I talked with my family members very rarely.
Stress 14	I have changes in my eating habits
Stress 15	I have constipation or frequent urination.

Source: Authors

3.2. Analysis of Data

For our analysis of the impact of the Covid-19 pandemic on the health of SME managers, we used two datasets of Moroccan entrepreneurs that were collected during the period June-July 2021. The first questionnaire concerns the measurement of entrepreneurial burnout through the use of the model (Maslach Burnout Inventory) and the second questionnaire is the CPDI (The Covid-19 Peritraumatic Distress Index) that is already validated by the Shanghai Mental Health Center. In order to analyze the data, the MBI version's score was utilized to calculate the average of the three burnout levels among SME managers: Burnout, Depersonalization, and Personal Achievement. Contrarily, we employed the principal component analysis method for the second questionnaire, a multivariate methodology known as interdependence that tries to comprehend the structure of a group of variables constructed in our questionnaire in two parts: stress and information during the Covid-19 pandemic. To finish the principal component analysis and assess the validity of this scale for measuring our data, we employed Cronbach's alpha. Also, to analyze and present the findings of our study on the effect of the Covid-19 pandemic on the health of SME managers, we employed SPSS software (version 21).

4. Findings

Table 3 presents the social-demographic profile of our sample (composed of 20 companies), 50% of the people have a higher level of education (Bachelor's degree and doctorate) and the rest have a baccalaureate and baccalaureate+2 level. On the other hand, the service sector represents 50% of the sample, with only 15% respectively for the construction and trade sectors. 85% of the samples are founders of their own companies.

Table N°3: Social-demographic profile

Level of study	Business sector		Professional status		
Baccalaureate	30,0%	Construction	15%	Manager	15%
Baccalaureate + 2/3	20,0%	Trade	15%	Founder	85%
Bachelor's Degree	45,0%	Industry	5%		
Doctorate	5,0%	NTIC	10%		
		Services	55%		
Total	100%	Total	100%	Total	100%

Source: Authors

In our sample (Table 4), we found that the burnout scale reached a mean score of 26.55, with a percentage of 30% representing leaders with a very high level of burnout, and a rate of 50% with a moderate degree of burnout. On the other hand, for the second scale (depersonalization), we found that the average score was 11.6, which represents a rate of 45% of the managers who have a moderate degree of burnout and the same rate of 45% who have a high degree of burn-out. For the third scale (personal fulfillment), the score is high, which confirms the results obtained for the first two scales (depersonalization and burnout). The MBI (Maslach Burnout Inventory) does not allow the scores obtained on the three scales to be added together, so no value can be used to determine that the person is in burnout.

Table 4: Maslach Scale: Assessing level of bourn-out

	Burnout	Depersonalization	Personal Achievement
Average	26,55 Moderate	11,6 Moderate	24,45 High

Source: Authors

The results of the Maslach Burnout Inventory (MBI) were confirmed by a detailed factor analysis for the three levels that make up the MBI, namely: Personal Achievement, depersonalization and burnout. The correlation matrix shows that there is a strong correlation between most of the eight variables that make up Personal Achievement, as in the case of variables 1 and 7, with a Cronbach's alpha score of 0.841 and a composite reliability score of over 0.70 (Table 5). The total variance explained for the Personal Achievement construct is represented by two components that represent the two most representative factorial axes with a cumulative percentage of information in the order of 68.59 percent, allowing the results obtained at the MBI score level to be validated, confirming that SME managers are at a high risk of burnout during the Covid-19 pandemic period.

Table 5: Reliability analysis (Personal Achievement, Burnout, depersonalization)

Construct	Measurement items	Factor loading	Cronbach alpha	Composite reliability
Personal Achievement	PAC 1	0,770	0,841	0,850
	PAC 2	0,654		
	PAC 3	0,595		
	PAC 4	0,587		
	PAC 5	0,697		
	PAC 6	0,726		
	PAC 7	0,831		
	PAC 8	0,627		
Depersonalization	DEP 1	0,836	0,888	0,888
	DEP 2	0,775		
	DEP 3	0,663		
	DEP 4	0,796		
	DEP 5	0,425		
Burnout	BUR 1	0,874	0,939	0,941
	BUR 2	0,870		
	BUR 3	0,924		
	BUR 4	0,835		
	BUR 5	0,739		
	BUR 6	0,746		
	BUR 7	0,831		
	BUR 8	0,776		
	BUR 9	0,787		

Source: Authors

The five variables of the construct (depersonalization) showed a very strong correlation, especially between items 1, 3 and 4, with a score ranging between 0.730 and 0.800, following the same analysis pattern (table 5). Cronbach's alpha score (0.888) validated these findings, as did the composite reliability score.

For the third component of the MBI (Burnout), table 5 shows a very high Cronbach's Alpha score of 0.939 and a score of 0.941 for the composite reliability, which explains the very high correlation of the Burnout construct (9 items) which varies between 0.739 and 0.924. In addition, the total variance explained for the Burnout construct is represented by two components with an accumulation of 82.024%, which demonstrates that SME managers in Morocco are highly exposed to the risk of burnout following the impact of the Covid-19 pandemic.

Based on a sample of more than 5,800 small and medium-sized businesses in the United States (survey administered between the beginning of March and the end of April 2020), researchers found that many small businesses are financially fragile. The median firm with expenses over \$10,000 per month had only enough cash to last about two weeks. (Alexander W. Bartik, al, 2020). The risk of burnout among business owners exists and is magnified across industries and occupations. Craftsmen (35.3%), farmers (35.2%), and accountants (30.2%) are populations reaching a record in terms of burnout. (Torrès and Moysan, 2019).

Moreover, to complete our analysis, we used the method of the analysis in principal components (ACP) to treat the data of our third part of the questionnaire. The following table (Table N°6) gives an overview of the statistics of the twenty-four items, namely the average and the standard deviation, as well as the number of respondents. We found that for all the items measured (24 questions), the average is close to 3. This means that the participants have on average the same answers to their attitudes for the pandemic covid19.

Table N*6: Factor Analysis:Descriptive Statistics

Items	Mean	Std. Deviation	N	items	Mean	Std. Deviation	N
QO1	3,15	,875	20	QO13	2,40	,598	20
QO2	3,00	,649	20	QO14	2,95	,759	20
QO3	2,85	,489	20	QO15	2,65	,671	20
QO4	2,80	1,005	20	QO16	2,85	,671	20
QO5	2,90	,968	20	QO17	3,10	,718	20
QO6	2,75	,550	20	QO18	3,00	,562	20
QO7	2,95	,945	20	QO19	2,95	,605	20
QO8	2,75	,550	20	QO20	2,55	,686	20
QO9	2,75	1,070	20	QO21	2,60	,598	20
QO10	2,65	,988	20	QO22	2,70	,571	20
QO11	2,25	,786	20	QO23	2,25	,716	20
QO12	2,40	,754	20	QO24	2,85	,813	20

Source: Authors

We note that the value of Cronbach's alpha is 0.959, which is excellent, as it exceeds the minimum threshold of 0.70. Stafford, J. Bodson, P, (2006). Therefore, we can say that we obtain, for this scale composed of twenty-four items, a satisfactory internal consistency.

Table N 7: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,959	,961	24

Source: Authors

Before proceeding with the principal component analysis, it is necessary to ensure that the items are minimally correlated with each other. The following table (Table 8) is the matrix of correlations between the variables in the matrix, so this inter-correlation matrix has many different coefficients. In the correlation matrix, some correlations are stronger than others (Items 1, 2, 4, 6, 9, 14) but overall most of the variables seem to be slightly correlated. And we see through the mean and standard deviation that there is a correlation between each item and the total scale.

Table N*8: Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
QO1	62,90	147,779	,852	,955
QO2	63,05	152,787	,840	,956
QO3	63,20	157,537	,725	,957
QO4	63,25	145,882	,815	,956
QO5	63,15	147,082	,795	,956
QO6	63,30	155,379	,802	,956

QO7	63,10	147,568	,794	,956
QO8	63,30	156,747	,699	,957
QO9	63,30	143,589	,856	,955
QO10	63,40	147,621	,753	,956
QO11	63,80	159,011	,356	,961
QO12	63,65	153,082	,699	,957
QO13	63,65	154,555	,791	,956
QO14	63,10	150,726	,825	,956
QO15	63,40	152,989	,798	,956
QO16	63,20	154,800	,685	,957
QO17	62,95	156,261	,552	,958
QO18	63,05	156,261	,719	,957
QO19	63,10	156,621	,640	,958
QO20	63,50	154,368	,694	,957
QO21	63,45	158,997	,486	,959
QO22	63,35	161,924	,305	,960
QO23	63,80	155,326	,607	,958
QO24	63,20	153,642	,614	,958

Source: Authors

In Table 9, the first factor alone explains 58.96% of the total variance of the 24 variables in the analysis, while the first four values account for over 87% of the total variance.

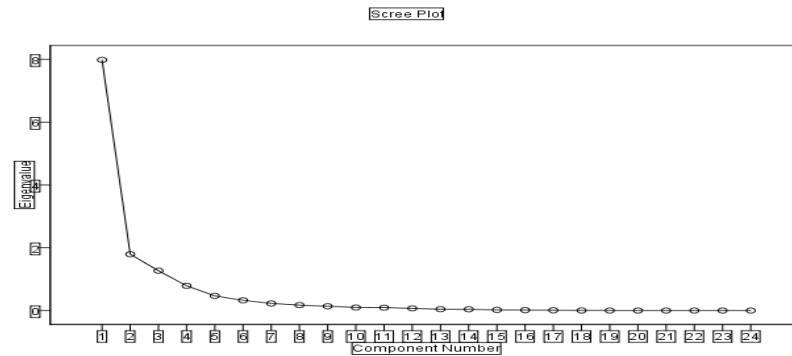
Table N°9: Total Variance Explained

Component	Initial Eigenvalues ^a			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %.	Total	% of Variance	Cumulative %.	Total	% of Variance	Cumulative %.
1	7,983	58,963	58,963	7,983	58,963	58,963	5,931	43,805	43,805
2	1,793	13,245	72,208	1,793	13,245	72,208	2,115	15,622	59,427
3	1,268	9,367	81,575	1,268	9,367	81,575	2,146	15,852	75,280
4	,787	5,811	87,386	,787	5,811	87,386	1,639	12,107	87,386

Source: Authors

This graph determines the illustration of the accumulation of variance known as the "Screen Test of Cartel"(1966). Thus the Cartel's elbow rule neglects the weak components and also provides the solution scenarios, thus, it is necessary to hold at least Q=2 (two factors). To carry out the graphic representations and to be able to interpret the results well. On the graph of eigenvalues, we see that the Cartel's bend is located at the fourth factor with an accumulation of 87.38% of the total variance.

Figure N°1: eigenvalues



Source: Authors

In order to confirm our results by the PCA method (principal component analysis), we used a multiple correspondence analysis which allows us to have a representation of the variables, to observe if there are proximities between the different variable categories. Table 10 shows the two factorial axes with an average Cronbach's Alpha of 0.937 and a total variance explained of 53.23%.

Table 10: Model Summary

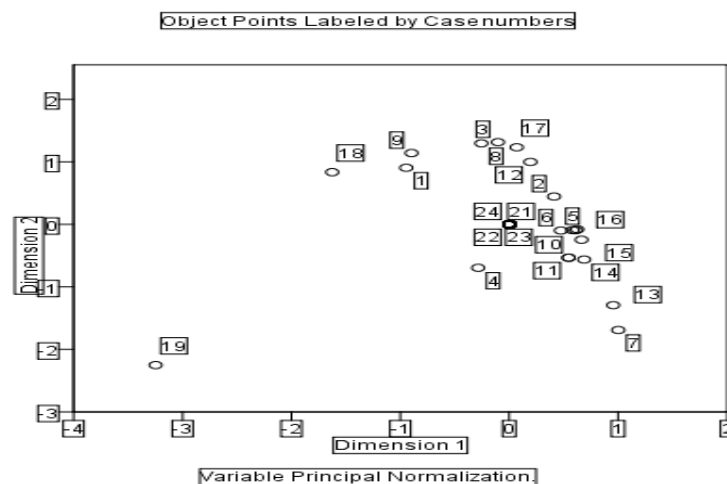
Dimension	Variance Accounted For			
	Cronbach's Alpha	Total (Eigenvalue)	Inertia	% of Variance
1	,963	9,838	,656	65,587
2	,897	6,133	,409	40,887
Total		15,971	1,065	
Mean	,937 ^a	7,986	,532	53,237

a. Mean Cronbach's Alpha is based on the mean Eigenvalue.

Source: Authors

The graph 2 confirms the correlation between the 24 items, taking into account the two dimensions of the main variable, except for item 19.

Figure 2: Object Points Labeled by Discrimination Measures



Source: Authors

But for more results, we analysed the two components: Stress (15 items) and information (8 items) which constitute the third part of our questionnaire (Table 11). The Cronbach's Alpha score for the stress construct is 0.939, which shows the strong correlation between the 15 items that explain the degree of stress experienced by SME managers in Morocco. In the same trend, the Cronbach's alpha for the information construct is 0.849, which is above the required threshold of 0.70, which also confirms the correlation between the variables forming the information axis.

Table 11: Stress and information: Reliability analysis

Construct	Measurement items	Factor loading	Cronbach alpha	Composite reliability
Stress	Stress 1	0,948	0,939	0,942
	Stress 2	0,937		
	Stress 3	0,904		
	Stress 4	0,831		
	Stress 5	0,800		
	Stress 6	0,845		
	Stress 7	0,877		
	Stress 8	0,917		
	Stress 9	0,877		
	Stress 10	0,943		
	Stress 11	0,982		
	Stress 12	0,857		
	Stress 13	0,835		
	Stress 14	0,872		
	Stress 15	0,592		
Information	Info 1	0,856	0,849	0,868
	Info 2	0,812		
	Info 3	0,817		
	Info 4	0,768		
	Info 5	0,856		
	Info 6	0,841		
	Info 7	0,695		
	Info 8	0,504		

Source: Authors

The two axes correlate with each other given the reliability of the statistics and the strong correlation between the different variables. This confirmation is in line with the trend of results already validated by the Maslach scale for burnout, depersonalization and personal achievement.

The results obtained from the questionnaire (The COVID-19 Peritraumatic Distress Index - CPDI) are alarming, as 20% of the people are affected by moderate distress, compared to a rate of 80 who have experienced severe distress. In terms of physical health, 35% of our sample had fair physical health, compared to 60% (fair) for mental health and sleep quality, while 25% reported good mental health and also good sleep quality. This justifies the 80% rate of the sample with severe distress.

Several researches have been conducted during the Covid-19 pandemic, but few empirical researches have been reserved to the subject of the health of the leaders of the SME, (Yildirim & Solmaz, 2020; Torres & al, 2021). In the framework of a study on the risk of burnout among entrepreneurs in the French environment for Torrès & al (2021), "we can argue that

the stress level of entrepreneurs has increased in comparison to, for example, salaried workers”. We may concur with the findings of Torres & al (2021), who claim that these studies can improve the literature on entrepreneurs besides the findings of our study and taking into consideration the limits of our work. “We believe that our empirical study on entrepreneurs conducted during the COVID-19 pandemic indeed allows for a unique contribution to the literature on entrepreneurs”.

5. Conclusion:

Our study contributes to research on the general health of entrepreneurs (Torrès & Thurik, 2019) and focuses specifically on the health status of SME leaders in situations of shock and turbulence such as the case of the Covid-19 pandemic. We attempted to measure the effects of external shocks on businesses, particularly SME managers, using two questionnaires (the Maslach Burnout Inventory and the Covid-19 Peritraumatic Distress Index), in order to enrich the empirical and theoretical studies on this topic of the state of health of SME managers.

The leaders of SMEs can experience success (management style, profitability of the company, satisfaction of employees and all stakeholders) and also failures in terms of profitability, management style, but also in terms of keeping their physical and mental health. Several researchers have noted in recent years the increase in the number of entrepreneurs who have died by suicide or by accident, which pushes stakeholders to take into account the physical and mental health of managers.

Our study showed that despite the small sample size, the Covid-19 pandemic has had an impact on the health of SME managers (mental and physical health), and also in terms of sleep quality, these determinants have an impact on business management and decision making by SME managers. In addition, the very strong correlation between the twenty-four items of the questionnaire showed that there is a relationship between the information related to covid-19 (8 items) and the health of the leaders especially stress (15 items) the risk of burnout increased during the Covid-19 pandemic, which is a threat to the failure of SMEs.

One of the drawbacks of our research is that we only used the Maslach Inventory to assess the health status of SME leaders (Maslach et al., 1996). Additional studies should be supplemented with the Oldenburg Burnout Inventory (Kristensen et al., 2005), the Shirom Melamed Burnout Measure (Shirom & Melamed, 2006), or the Copenhagen Inventory. (Demerouti et al., 2001). In order to generalize the findings of this study, it is crucial to carry out a study with a sizable sample of SME managers. Given that the health of SME managers is correlated with the health of businesses, it is advised to carry out additional research on the health of SME managers in Morocco without taking into account the Covid-19, which will serve as a reference on this very interesting topic for the economy and entrepreneurship.

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