Employability status of female university graduates under the Covid pandemic 19: case Hassan I University Settat Morocco

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Merieme El-Aouachi
PhD Student in Economics and Management
Institution: Faculty of Economics and Management, Hassan the First University, Research Laboratory in Economics, Management and Business Management (LAREGMA)
Address: Casablanca Road, Settat, Morocco, BP: 539
E-mail: m.elaouachi@uhp.ac.ma

Zakaria Benjouid
Doctor in Economics and Management
Institution: Faculty of Economics and Management, Hassan the First University, Research Laboratory in Economics, Management and Business Management (LAREGMA)
Address: Casablanca Road, Settat, Morocco, BP: 539
E-mail: benjouid@uhp.ac.ma

Zineb Aboulhouda
PhD Student in Economics and Management
Institution: Economics and Management Faculty of Economics and Management, Hassan the First University, Research Laboratory in Economics, Management and Business Management (LAREGMA)
Address: Casablanca Road, Settat, Morocco, BP: 539
E-mail: z.aboulhouda@uhp.ac.ma

Mehdi Leghguar
PhD in Economics and Management
Institution: Actuarial Research Laboratory Financial Crime and International Migration (ARLFCIM), Hassan II University Casablanca, Morocco
Address: Casablanca Road, Settat, Morocco, BP: 539
E-mail: lechguar.mehdi@gmail.com

ABSTRACT
A previous study on the dynamics of employability and professional integration of young graduates during the COVID-19 period revealed significant gender disparities. Focusing on graduates of Hassan I University in Settat, the study found that female graduates were more adversely affected than their male counterparts. The study found that women were disproportionately likely to lose their jobs compared to men, prompting a closer examination of the employability status of female graduates. This current research examines the impact of the pandemic on the job prospects, employment rates, and career trajectories of female graduates. By identifying these variables, the research seeks to offer a thorough understanding of the distinct obstacles faced by female graduates in the midst of this unprecedented era, with the ultimate goal of providing valuable perspectives for decision makers and academic institutions to improve support and ensure fair job prospects in the aftermath of the pandemic.

Keywords: Covid-19 Pandemic, Unemployment of Women, Gender Disparity, Hassan First University of Settat.
1 INTRODUCTION

The world has experienced an unprecedented shock during the period of confinement due to Covid 19 and the various restrictions on mobility and activities. This situation has created a climate of economic and social recession. Studies and reports from organizations interested in socio-economic affairs have highlighted the negative impact on income and in particular on the hiring and employability of young people in general. Among these studies, many of them have pointed out the negative effect and the relative precariousness of women's work and the obvious difference with men, with a worsening of the unemployment situation. If it is well known that there is a gap between men's and women's work that persists throughout the countries of the world, even those that are well developed, these surveys have shown that this situation has worsened during the period of Covid 19. “According to the research report, "the impact of covid-19 on the employment of women\(^1\).”

This study is part of study of monitoring the future of graduates of the university Hassan first and their ability to integrate into the socio-economic fabric conducted by the university since 2011. The results of these surveys are used by university managers to adapt training to the specific needs of employers both public and private. They are also used to review the vocations and missions of the university's institutions.

In this study, we are particularly interested in the role of gender in the employability of female graduates under the particular conditions of the covid. The focus is on female graduates during the pandemic period, trying to highlight the proportions of hiring and female job losses during the pandemic.

2 LITERATURE REVIEW

The COVID-19 pandemic profoundly disrupted the global economy, exacerbated existing inequalities, particularly in the employability of female university graduates. This literature review examines the role of gender in the employability of female graduates during the pandemic, highlighting the proportions of female hires and job losses during this period.

The employability of female university graduates is a key indicator of economic and social development. Human capital theory, developed\(^2\), postulates that education and training improve the productive capacities of individuals, thereby increasing their employability. However, the pandemic showed that skills alone are not enough to guarantee employment, especially for women who often had to juggle increased work and family responsibilities during the confinements\(^3\).

\(^1\) (Fondation des femmes, 2021)
\(^2\) (Becker, 1964; Schultz, 1961)
\(^3\) (Aloan et al., 2020)
The data show a significant drop in the employment rate of female graduates in 2020 compared to previous years. An analysis by the Pew Research Center shows that young women in particularly have suffered from a decline in their employment rate and labor force participation as a result of (COVID-19)\(^4\). For example, the employment rate for female graduates aged 20-29 fell from 78% in October 2019 to 69% in 2020.

The pandemic has also exacerbated gender gaps in the labor market. According to the (OIT)\(^5\)(2021), female employment fell by 4.2% globally in 2020, a sharper decline than that of male employment, which was 3% in the same year. Women's jobs were found to be almost twice as vulnerable to the pandemic as men's, leading to a significant increase in female unemployment compared to men\(^6\).

Finally, economic policies and government support measures played a crucial role in mitigating the negative effects of the pandemic. Countries that have implemented specific programs to support women have succeeded in limiting job losses and maintaining the employability of female graduates, underlining the importance of targeted interventions to support women in the labor market in times of crisis\(^7\).

3 METHODOLOGY

The methodology used has been widely explained in subsequent works "Employability and dynamics of professional insertion, gender effect, case of the laureates of the Hassan I University of Settat. It is worth remembering that with regard to the choice of individuals involved in this survey, we have recommended the choice of a database of a total population of 4421 graduates in the 2017/2016 class who are currently working, studying or unemployed. The survey was conducted on a representative sample of 604 graduates of 7 institutions of different degrees (www.uh1.ac.ma) at the University Hassan I (UH1) Settat, Morocco.

In this study, we extracted the results related to women from the global survey on the integration of the Hassan I University graduates in Settat, Morocco, to identify the determinants of women hiring in during the pandemic. The survey is based on a methodology in force in the field validated in previous studies by the national evaluation body of the Higher Counsel for Education, Training and Scientific Research « INE_CSEFRS ».

\(^4\)(Parker et al., 2020)  
\(^5\)(OIT. 2021)  
\(^6\)(Mckinsey & Company, 2020)  
\(^7\)(UN Women, 2021)
4 RESULTS AND DISCUSSIONS

We begin our analysis of the collected data with an exploratory\textsuperscript{8} descriptive approach, a method of analyzing a data set by summarizing its main characteristics, usually using a visual approach. Indeed, descriptive statistics gathers methods whose main goal is to describe the studied data, and this description is done through their presentation (as complete as possible), their graphic representation, and the calculation of numerical summaries.

From this point of view, we do not use probabilistic models. Note that the terms descriptive statistics, exploratory statistics and data analysis are almost synonymous\textsuperscript{9}. Our goal is to provide a complete description of the sample we studied and to provide a basis for further in-depth analysis.

![Figure 1. The analysis of gender differences in various aspects related to employability](image)

We begin by reading the profile of our sample, which includes 245 respondents, 42.9\% of whom are females. In terms of employment, 78\% declared that they had maintained their job during the Covid-19 periods against 22\%. As we can see in Figure 1.

4.1 TYPE OF CHANGE BY GENDER

<table>
<thead>
<tr>
<th>Q3-Type of change</th>
<th>Gender</th>
<th>In minus</th>
<th>In more</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>73%</td>
<td>26.7%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>64.2%</td>
<td>35.8%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>68.4%</td>
<td>31.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

chi2 = 0.95, ddl = 1, 1-p = 67.00\%.
Dependence is not significant. chi2 = 0.95, ddl = 1, 1-p = 67.00\%. Odd ratio: 1.54 of variance explained (Cramer's V): 0.39\%.

Source: Prepared by the author.

\textsuperscript{8} Exploratory Data Analysis (EDA) was promoted by John Tukey to encourage statisticians to explore the data, and eventually formulate hypotheses that could lead to the collection and experimentation of new data. EDA is different from initial data analysis (IDA).

\textsuperscript{9} (Baccini; Besse, 2007).
For respondents who have maintained their employment minority (7%) who have had a change in responsibility the effect was mainly on salary. 31% stated that their salaries were affected, the majority of whom (68.4%) suffered a downward. As we can see in Table 1 and Figure 2.

At the end of the questionnaire, we asked an open-ended question about the impact of Covid-19 on the employability of Hassan I University graduates, and after a qualitative analysis of the various responses collected, we found that the various impacts affected. As we can see Figure 3, were based on the following elements:

- Of these, 74% (16% of the total workforce) found another job and only 26% experienced a period of unemployment during the Covid-19 period, declared no.
The impacts of covid-19 on employability

- Psychological stress at work
- Wage and bonus cuts
- Lack of job opportunities
- Change in working conditions
- Work stoppages lasting from one month to one year
- Rising prices for building materials
- Distance learning
- Lower purchases
- Increase the risk factor during work
- Increased workload
- No impact

Source: Prepared by the author.

The descriptive analysis described above. As we can see in Figure 4, even if it shows differences in the effects of Covid-19, does not allow us to assert the possible overlap between the characteristics studied, which we will try to explain through an in-depth analysis that will be the subject of this section.

We now turn to the Chi-square test, which will be used to confront the null hypothesis of the absence of a relationship between two variables with the alternative hypothesis of the presence of a relationship. In other words, this test verifies the hypothesis of independence of the study variables.

Therefore, we will work with proportions and occurrences obtained in each cell of the cross-tabulations.

4.2 JOB RETENTION BY GENDER

Table 2. Job retention rates for men and women surveyed during covid 19

<table>
<thead>
<tr>
<th>Job retention</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>27.6%</td>
<td>72.4%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>17.1%</td>
<td>82.9%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>21.6%</td>
<td>78.4%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 3.88, \text{ddl} = 1, 1-p = 95.13\% . \]

Dependence is significant. \[ \chi^2 = 3.88, \text{ddl} = 1, 1-p = 95.13\% . \] Odd-ratio: 1.84% of variance explained (Cramer's V): 1.59%.

Source: Prepared by the author.

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The boxes framed in blue (pink) are those for which the actual number of students is significantly higher (lower) than the theoretical number.
Comment 1:
According to the Chi2 test, we find that there is a significant dependence between job retention and gender. During the covid19 period, 21.6% of respondents were unable to maintain their jobs, of which 27.6% were females and 17.1% were males. As we can see in Table 2 and Figure 5.

Thus it is clear that job loss was more evident among females than among males (27.6% among females versus only 17.1% among males).

4.3 HAVING ANOTHER JOB BY GENDER

Table 3. This table displays the unemployment rates among by gender

<table>
<thead>
<tr>
<th>1-Another job Gender</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>24.1%</td>
<td>75.9%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>29.2%</td>
<td>70.8%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>26.4%</td>
<td>73.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Dependence is not significant. \( \chi^2 = 0.17, \text{ddl} = 1, 1-p = 32.06\% \).

Source: Prepared by the author.

Comment 2:
According to the Chi2 test, we find that the dependence is not significant between gender and other employment. In fact, during the Covid19 period, 26.4% of the respondents did not use another job, of which 24.1% were females and 29.2% were males. As we can see in Table 3 and Figure 6.

The recourse to other employment is more significant for males than for females (29.4% of males against 24.1% of females).
4.4 UNEMPLOYMENT BY GENDER

Table 4. This table displays the unemployment rates among by gender

<table>
<thead>
<tr>
<th>Q1-Unemployment Gender</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>79.3%</td>
<td>20.7%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>70.8%</td>
<td>29.2%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>75.5%</td>
<td>24.5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\[ \text{chi}^2 = 0.51, \text{ddl} = 1, 1-p = 52.48\% \]

Dependence is not significant. chi2 = 0.51, ddl = 1, 1-p = 52.48%. Odd-ratio: 1.58. % of variance explained (Cramer’s V): 0.21%

Source: Prepared by the author.

Comment 3:

According to the Chi2 test, we find that the dependence is not significant between unemployment and gender. During the Covid19 period, 75.5% of the respondents were not affected by unemployment, of which 79.3% were females and 70.8% were males. As we can see in Table 4 and Figure 7. In fact, the job retention rate for females is higher than for males (79.3% of females versus 70.8% of males).

4.5 JOB CHANGE BY GENDER

Table 4. Chart related to job changes by gender

<table>
<thead>
<tr>
<th>Q1- Changes Gender</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>20.7%</td>
<td>79.3%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>29.2%</td>
<td>70.8%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24.5%</td>
<td>75.5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\[ \text{chi}^2 = 0.51, \text{ddl} = 1, 1-p = 52.48\% \]

Dependence is not significant. chi2 = 0.51, ddl = 1, 1-p = 52.48%. Odd-ratio: 0.63. % of variance explained (Cramer’s V): 0.21%

Source: Prepared by the author.
Comment 4:
According to the Chi2 test, we find that the dependence is not significant between job change and gender. During the Covid19 period, 24.5% of respondents did not change their jobs, of which 20.7% were females and 29.2% were males. As we can see in Table 5 and Figure 8. It is clear that males were able to maintain their jobs more than females.

4.6 CHANGE OF RESPONSIBILITY ACCORDING TO GENDER

Table 5. The changes in job responsibility experienced by gender

<table>
<thead>
<tr>
<th>Q1- Have you changed responsibility? Gender</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>81.9%</td>
<td>18.1%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>85.7%</td>
<td>14.3%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>84.1%</td>
<td>15.9%</td>
<td>100%</td>
</tr>
</tbody>
</table>

chi2 = 0.65, ddl = 1, 1-p = 58.01%
Dependence is not significant. chi2 = 0.65, ddl = 1, 1-p = 58.01%. Odd-ratio: 0.75. % of variance explained (Cramer's V): 0.27.

Source: Prepared by the author.

Comment 5:
According to the Chi2 test, we find that the dependence is not significant between change in responsibility and gender. During the Covid19 period, 84.1% of the respondents did not change their responsibilities, of which 81.9% were females and 85.7% were males. Thus, it appears that males manage to maintain their responsibilities more than females (85.7% of males and 81.9% of females). As we can see in Table 6 and Figure 9.
4.7 CROSSING OF THE VARIABLE COVID AS A CAUSE OF CHANGE AND THE GENDER VARIABLE

Table 6. The percentage of individuals attributing changes in their responsibilities to the pandemic by gender

<table>
<thead>
<tr>
<th>Covid 19 causes change Gender</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>42.1%</td>
<td>57.9%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>70.0%</td>
<td>30.0%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>56.4%</td>
<td>43.6%</td>
<td>100%</td>
</tr>
</tbody>
</table>

chi² = 3.08, ddl = 1, 1 - p = 92.09%.
Dependence is not significant. chi² = 3.08, ddl = 1, 1 - p = 92.09%. Odd-ratio: 0.31. % of variance explained (Cramer's V): 1.26.

Source: Prepared by the author.

Comment 6:
According to the Chi2 test, we find that there is a low significant dependence between gender and Covid19 as a cause of change. During the Covid19 period, 56.4% of respondents say that Covid19 is not the cause of change in their responsibilities, of which 42.1% are females and 70% are males. As we can see in Table 7 and Figure 10.

4.8 CHANGE IN SALARY BY GENDER:

Table 7. The changes in salary among male and female respondents during the Covid

<table>
<thead>
<tr>
<th>Salary change Type</th>
<th>No</th>
<th>Yes</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>57.1%</td>
<td>42.9%</td>
<td>100%</td>
</tr>
<tr>
<td>Male</td>
<td>62.1%</td>
<td>37.9%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60.0%</td>
<td>40.0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

chi² = 0.62, ddl = 1, 1 - p = 57.08%.
Dependence is not significant. chi² = 0.62, ddl = 1, 1 - p = 57.08%. Odd-ratio: 0.81% of variance explained (Cramer's V): 0.26.

Source: Prepared by the author.
Comment 7:

According to the Chi2 test, we find that the dependence is not significant between the change in salary and gender. During the Covid19 period, 60% of the respondents stated that their salaries had not changed, of which 57.1% were females and 62.1% were males. As we can see in Table 7 and Figure 11. Moreover, it appears that males manage to maintain their salaries without change more than females (62.1% of males against 57.1% of females).

4.9 THE IMPACT OF COVID 19 BY GENDER

Table 8. The variation gender disparities in job outcomes during the covid 19 period.

<table>
<thead>
<tr>
<th>Q4-Gender impact</th>
<th>No impact</th>
<th>Increase in workload</th>
<th>Psychological stress at work</th>
<th>Reducing salaries and bonuses</th>
<th>Increasing the risk factor during work</th>
<th>Decreasing lower purchases</th>
<th>Lack of job opportunities</th>
<th>Distance learning</th>
<th>Rising prices for building materials</th>
<th>Work stoppages lasting from one month to one year</th>
<th>Changing working conditions</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>24.8%</td>
<td>13.3%</td>
<td>3.8%</td>
<td>19.0%</td>
<td>0.0%</td>
<td>1.0%</td>
<td>1.9%</td>
<td>8.6%</td>
<td>0.0%</td>
<td>12.4%</td>
<td>3.8%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Male</td>
<td>37.1%</td>
<td>10.7%</td>
<td>0.7%</td>
<td>20.0%</td>
<td>4.3%</td>
<td>0.0%</td>
<td>2.1%</td>
<td>8.6%</td>
<td>0.7%</td>
<td>8.6%</td>
<td>1.4%</td>
<td>5.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>31.8%</td>
<td>11.8%</td>
<td>2.0%</td>
<td>19.6%</td>
<td>2.4%</td>
<td>0.4%</td>
<td>2.0%</td>
<td>8.6%</td>
<td>0.4%</td>
<td>10.2%</td>
<td>2.4%</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

chi2 = 17.32, ddl = 11, 1-p = 90.13%.
Dependence is not significant. chi2 = 17.32, ddl = 11, 1-p = 90.13%. % of variance explained (Cramer's V): 7.07
Source: Prepared by the author.
Comment 8:

According to the Chi2 test, we find that the dependence is not very significant between gender and the impact of Covid19 on employability. During the Covid19 period, 31.8% of respondents said that Covid19 had no impact on their employability, of which 24.8% were females and 37.1% were males.

In fact, during the Covid19 period, 19.6% of the respondents said that Covid19 led to a reduction in salaries and bonuses, of which 19% were females and 20% males. In the same period, 11.8% of respondents said that Covid19 had led to an increase in workload, of which 13.3% were females and 10.7% were males. Thus, 8.6% of respondents (8.6% of females and 8.6% of males) said that during the Covid19 period they used distance learning and 8.2% used telework (11.4% of females and 5.7% of males). In addition, 10.2% of the respondents stated that they stopped working for a period of one month to one year during the Covid19 period, of which 12.4% were females and 8.6% were males. As we can see in Table 8 and Figure 12.

5 CONCLUSION

In this investigation, the study delved into the repercussions of the COVID-19 pandemic on job insecurity in relation to gender. A survey was carried out on university graduates who had joined the workforce before the implementation of COVID-19 related restrictions and lockdowns. The findings from the collected responses were subjected to qualitative analysis and meticulously presented, leading to multiple deductions. The employment scenario saw a deterioration for women in comparison to men (26%) owing to specific conditions stemming from the pandemic. While a considerable number of women managed to hold onto their jobs, a significant portion encountered salary cuts (68.4%), reduction in bonuses, or a decrease in job responsibilities. A substantial percentage of women, over 68%, were impacted by increased work demands (11.8%), salary/bonus slashes (19.6%), or work disruptions lasting from one month to a year (10.2%). The incidence of job loss was higher among women (27.6%) as opposed to men (17.1%), however, women displayed a higher tendency to maintain job stability. Men marginally surpassed women in retaining roles with responsibilities (85.7% of men vs. 81.9% of women), with these roles not being linked to the effects of COVID-19 as per respondents.

Interestingly, telecommuting was scarcely adopted by women. Corroborating existing research conducted by global institutions and bodies, our findings validate the exacerbation of employability challenges faced by women due to the pandemic. This issue, prominently featured in the "Global Gender Gap Report 2021," persists as a critical concern due to its economic implications, necessitating heightened initiatives in education, regulation, and legislation for its mitigation.
REFERENCES


