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# Habits on Social Networks at Workplace: A Survey of Motivations and Behaviour

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## Abstract

This article explores the use of social networks by workers in Abidjan, Côte d'Ivoire, with particular emphasis on a descriptive or quantitative analysis aimed at understanding motivations and methods of use. More than five hundred and fifty questionnaires were distributed, highlighting workers' preferred digital channels and platforms. The results indicate that the majority use social media through their mobile phones, with WhatsApp being the most popular app, followed by Facebook and LinkedIn. The study reveals that workers use social media for entertainment purposes and to develop professional and social relationships, with 55% unable to live without social media at work for recreational activities. In addition, 35% spend on average 1 to 2 hours on social networks, mainly between 12 p.m. and 2 p.m. It also appears that 46% believe that social networks moderately improve their productivity. These findings can guide marketing strategies, training, technology development and government policies related to the use of social media in the workplace.

## Keywords

Social Network, Social Media, Applications, Poisson's Law, Statistics, Digital Supports, Workers Productivity

## 1. Introduction

The development of electronic devices and the advent of the internet during the

last decades has spurred the emergence of the information and communication technology (ICT). The ICT has tremendously changed every aspect our life, not only personal, or professional, but on a larger scale [1]. Indeed, the ICT sustains the digital economy that holds a non-neglected part in the modern economies. As an example, the digital economy represents more than 3% of the GDP of Cote d'Ivoire [2]. The digital devices have penetrated all the economical sectors such as finance, economy, education, agriculture, entertainment, science and technology, factories, and so on. Prevision shows that the number of connected devices reach 30 billion whereas the number of mobile subscription will exceed 6 billion by 2023 [3].

Nowadays, the use of ICT at workplace grows exponentially, mainly since the COVID-19 crisis. Indeed, one of the consequences of the COVID-19 crisis has been an increased use of ICT by workers and professionals from all sectors for remote meetings, seminars, teaching... It is noteworthy to mention that people use the ICT at their workplace not only to compensate the need to gather and meet, but also to increase their productivity and efficiency. Elsewhere, the development of social media websites, and the advent of the Web 2.0 wherein the users are active by interacting with the platforms they use have fueled the use of the ICT, not only for work purposes but for entertainment and relax purposes as well. It has been shown that users go on social network sites (SNS) at workplace to escape from the stress generated sometimes by intense cognitive works [4]. The social network can be defined as the relatively stable relationship system formed between individuals members of the society due to interaction [5]. We extend this sociological definition by defining the social network as the interaction between individuals, between individuals and organizations, and between organizations by the use of digital platforms [6]. Students and professional workers also use the SNS and applications to learn, work, share, and collaborate online [5] [7] in order to improve their performances.

Researchers have investigated the impacts of social media on users performance at their workplace [8]. Studies such as [9]-[12] have investigated the impact of the SNS and applications on the habits, health, and work performances of the users in several regions (Zambia, Ghana, Taiwan, Europe, ...). Unrestricted use of social media at workplace has negative impact on the productivity [13] [14]. Social media have both negative and positive impact on the mental health of the users depending on the usage and the amount of time spent there [8]. The study also shows that majority of the organization do not have any policy regarding the use of SNS at workplace [5].

Organizations and companies are facing hurdles to ensure the effective use of SNS that can improve their employees' performance during working hours [8]. Most of the researches focused on the assessment of the impacts of the social media and network on the worker's performances. However, at the best of our knowledge, only few studies have addressed the usage or habits of the users on the SNS at workplaces. The objective of this study is to fill this gap. More specifically we investigate the usage and frequency use of the social network sites and

applications by professionals during their working hours.

## 2. Statement of the Problem

The study has been carried out in Abidjan, Côte d'Ivoire. Abidjan is the biggest city of Côte d'Ivoire with more than 5.61 millions of inhabitants according to the last general population census from 2021 [15]. Abidjan concentrates more than 19% of the total population of the country [15], which amounts to more than 29.38 millions. According to [16], the work flow in Côte d'Ivoire amounts to 61.3% of the total population with an average age of 35.7 years old. The unemployment rate is about 12.9% [16] and we assume that this rate is lower in Abidjan as it is the economic capital and concentrated thereby most of the workplaces. According to the latest report from AIP (Agence Ivoirienne de la Presse), Côte d'Ivoire has around 5.1 million social media users, corresponding to 17.9% of the total Ivorian population [17]. In line with the diagnostic study of the digital economy of Côte d'Ivoire carried out by the World Bank in August 2021, this rate of social networking users is strongly influenced by the populations of cities with high economic potential, such as Abidjan, where the majority of people with an introduction to ICTs in Côte d'Ivoire are concentrated [18].

Nevertheless, there are very few studies aimed at understanding the impact on productivity of this high penetration of social networks in the daily lives of the Ivorian population in general and workers in the city of Abidjan in particular. To remedy this deficiency, the main aim of this study is to analyse the social networking habits of workers in the city of Abidjan, their motivation, and the impact of social networking on their productivity. There are two main paradigms for analyzing workers' use of social networks [19]. One aims to understand the impact of social network use on workers' mental health [19], the other to determine their impact on workers' productivity [19]. We limit our study to the second paradigm by seeking to determine the average time spent by workers on social networks during their working hours and its overall impact on their productivity.

## Objectives of the Study

Nowadays, social networks occupy an essential place in the interconnection of people. However usage habits vary from one population to another, so the main aim of this work is to study the behaviour of workers when using social networks. This will be done by analyzing workers' activities on social networks, and the impact of social networks on workers' performance. More specifically, this study will provide answers to the following questions:

- How much time do workers spend on social networks during working hours?
- Which social networks do workers prefer?
- Which media do workers use most to spend time on social networks?
- What are the reasons for using social networks (to relax, to spend time, to pass on work-related information, to chat with friends, etc.)?

- Do they think that social networks can improve their productivity?
- How do they think social networks impact their behaviour at work?

### 3. Methodology and Environment

Social networks have redefined the interaction, entertainment and work habits of populations in general. However, the specific uses that individuals make of them are strongly influenced by their living environments [10]. For our study we focus on the city of Abidjan. So to find out the behavior of workers on social networks in the city, forms containing each 14 questions were distributed to 504 respondents. We collected back the forms where in 417 were collected filled in, representing 82.74%. The results were collected by three investigators using web platforms set up specifically for the purpose. The platforms used are JotForm and Google form, they were chosen for their ease of creating, organizing, and analyzing professional forms. For our study we first looked at the different social networks used by workers and their favorite ones. They had the possibility to choose mainly between nine networks namely Facebook, Instagram, LinkedIn, Snapchat, Telegram, Tik Tok, Twitter, WhatsApp and YouTube. We focused on these specific social networks because an initial study carried out by [20] revealed that they were the social networks mainly used by the Ivorian population. Then we were interested in the media they used to access the social network. The commonly used media are mobile phones, tablets and computers. To find out the time spent on social networks, we offered them five time intervals, namely: less than 1 hour, between 1 hour and 2 hours, between 2 hours and 3 hours, between 3 hours and 4 hours, more than 4 hours. Finally, the other questions concern their habits on social networks and the idea they have of the influence of social networks on their productivity.

### 4. Results and Discussions

This section describes the results of our analysis. For this study, of the 504 people interviewed we had a proportion of 68% men and 32% women from different sectors of activity and divided into different age groups.

#### 4.1. The Age Range

For this study, out the 504 people interviewed we had a proportion of 68% men and 32% women from different sectors of activity (23% from the public sector and 77% from the private sector) and divided according to different age groups of 5 years and based on the potential number of year of experience. Age classification allows for a finer understanding of social media users, making it easier to personalize marketing efforts, content, platform security and user interfaces to better meet the specific needs and behaviors of each demographic group.

For this study the age ranges of workers considered are: 20 to 24 years (trainees), 25 to 29 years (new workers), 30 to 34 years (workers with on average less than 5 years of experience), 30 to 34 years old (workers with on average 5 years

of experience), 35 to 39 years old (workers with an average of between 5 years and 10 years of experience), 40 to 44 years old (workers with an average of between 10 years and 15 years of experience), 45 to 49 years (workers with on average between 15 years and 20 years of experience), 50 to 54 years (workers with on average between 20 years and 25 years of experience), 55 to 59 years (workers with on average between 25 years and 30 years of experience), 60 to 64 years (workers with on average between 30 years and 35 years of experience), 65+ years (workers with over 35 years of experience).

Having collected the data, before proceeding with a descriptive analysis, we carried out an analytical study in order to determine the probability law that our set of responses might follow. After inserting the data into Matlab and applying the approximate law search function, we found that two main laws could be used to model the evolution of the distribution of workers by age group: the binomial law and the Poisson law [21]. The binomial law is the most precise law that the system offers us, then comes the Poisson law. However, let's opt for the Poisson law because it offers the best ratio of simplicity and precision [22]. And these two laws are validated by the Smirnov Kolmogorov test. Indeed, the binomial law works with two parameters which make the manipulation of the function quite cumbersome. In contrast, the Poisson law models the system with a single parameter and simplifies it. In the following, we relied on the choice of the Poisson law to analyze our data. The function used to model the events in the Poisson law is given by Equation (1) [22]:

$$p(k) = \frac{\gamma^k}{k!} e^{-\gamma} \quad (1)$$

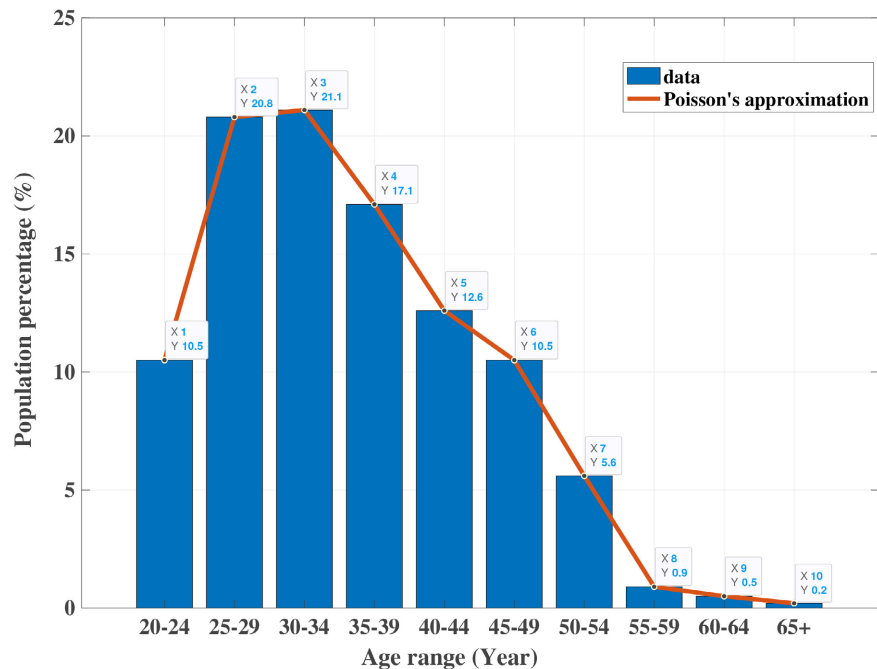
where  $p(k)$  describes the behavior of the number of events occurring in a fixed interval,  $\gamma$  is the number of fixed occurrences, and  $k$  is the number of possible occurrences, in our case  $k = 33.19$ . In order to determine the age of the greatest number of users, we analyze the cancellation point of the derivative of  $p(k)$ . The derivative of the function is given by Equation (2),

$$\frac{d(p(k))}{d\gamma} = \frac{1}{k!} [k\gamma^{k-1} + \gamma^k (-\gamma e^{-\gamma-1})] \quad (2)$$

This shows that the derivative cancels for  $\gamma = \sqrt{e \times k} = 9.49$ . The value 20 years representing the starting point of our classification, we therefore analytically find  $20 + 9.49 = 29.49$  is the workers age using the social network at work with the highest likelihood.

**Figure 1** shows the distributions of the percentages of workers who use social networks by age group. **Figure 1** shows that the poisson distribution can be used to approximate the distribution of the percentage of workers using social networks at work by age group. It appears that it is for the age groups of 25 to 29 years (20.8%) and 30 to 34 years (21.1%) that we observe the greatest number of workers using social networks. Which seems to correlate with the analytical results presented above. These age groups represent the proportions of new workers and workers with less than 5 years of experience, generally not having man-

agerial positions, they generally have more time to connect to social networks between two tasks. The age groups of 55 to 59, 60 to 64 and over 65 represent the age groups with the lowest proportions of workers using social networks, they represent respectively 0.9%, 0.5%, and 0.2% of our study population. This result could be explained by the low proportion of workers of this age due to their lack of mastery of technologies generally observed in people of this age [23].



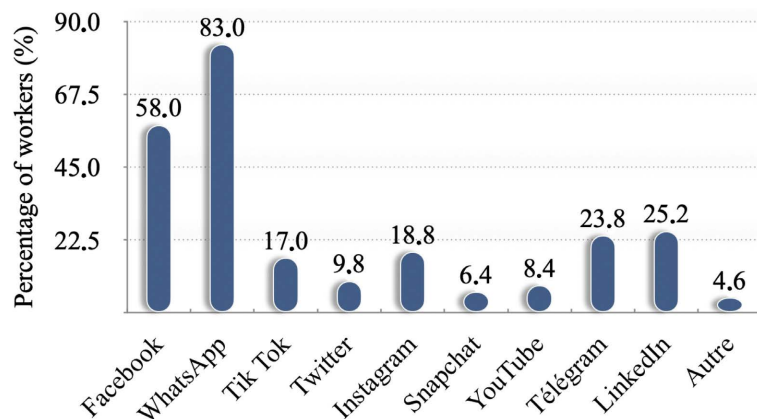
**Figure 1.** Range age of the social networks' workers users.

## 4.2. The Most Popular Social Networks

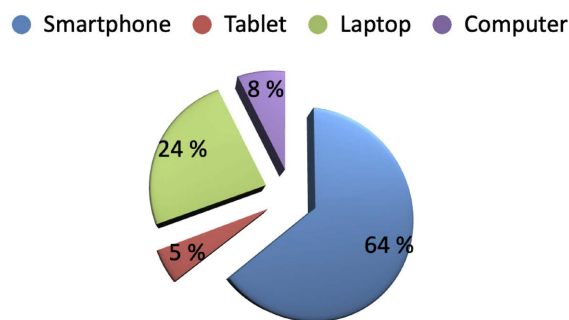
The knowledge of the most used social networks by a population may allow the concerned stakeholders to better understand their audience, optimize their communication, marketing and product development strategies, and remain competitive in a constantly evolving digital landscape. Our study shows that the top 3 favorite social networks among workers are WhatsApp, Facebook, and LinkedIn. These three social networks are generally oriented towards developing social relationships (WhatsApp & Facebook) and professional relationships (LinkedIn) [4]. According to [4] [24] their development within the population can be explained by a need for both professional and social balance, especially in high-pressure environments.

**Figure 2** shows the number of users per social network among workers. It shows that 83% of the workers interviewed use WhatsApp social network. This is explained by its ease of use, and the presence of certain features such as voice notes, video and voice calls at lower costs which facilitate interaction between people [25]. Also features such as group messages make it a quick way to share information, both professional and private [25] [26]. We are also interested in the media people use to access the social networks. Respectively as shown by **Figure**

3 smartphones, tablets, laptops, and office computers are considered [20].



**Figure 2.** The most popular social networks.



**Figure 3.** Media used to access social networks.

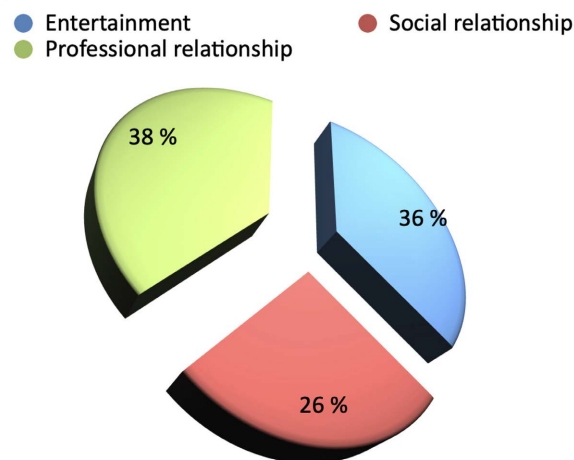
**Figure 3** reveals that the most used media is the smartphone. This is because the combination of mobility, small size, ease of use, constant connectivity and smartphone-specific features makes these devices very attractive for accessing social networks. They provide an instant, immersive and personalized social experience that meets user needs [27]. However, according to [27] [28] this ease of access to social networks can lead to an addiction to these networks, which can have detrimental impact on people both on a personal (physical health, mental stability, relationships with others, etc.) and a professional (productivity, efficiency, integration, etc.) level. Determining workers' preferred social network provides businesses with valuable insights to optimize internal communication, facilitate collaboration, strengthen their online presence, and improve employee engagement and satisfaction. This knowledge can be part of a global approach aimed at creating an efficient work environment conducive to productivity [29]. In a country like Côte d'Ivoire's, where the cost of telecommunications services is increasingly high, and the Internet infrastructure is expanding, a social network like WhatsApp coupled with smartphones offers an excellent all-in-one alternative to meet people's communication needs [30]. As for LinkedIn and Facebook, they present themselves as excellent means of information and sharing of professional experience for workers [4] [31], making them increasingly attrac-

tive to them. It turns out that the social networks with the least popularity among workers are mainly Snapchat, Twitter, and TikTok.

### 4.3. Workers' Social Media Habits?

In this section we want to understand the habits of workers on social networks. We also present the answers to the questions “*Why do you use social networks?*”, “*Do you think you can do without it?*”, and “*How do you think social networks impact your habits?*”.

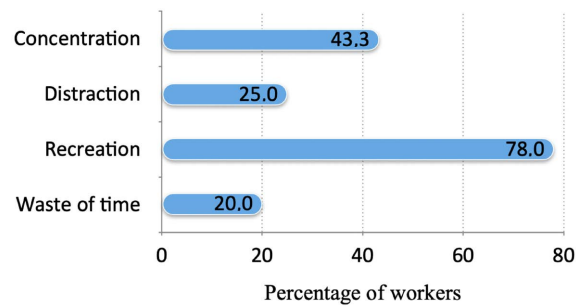
The results are shown in **Figure 4** where it appears that 38% of workers use social networks for the development of their professional relationships, 36% for entertainment and 26% for the development of their social relationships. These fairly balanced results on the whole could reflect a desire on the part of workers to strike a balance between their professional and personal lives [32]. The heavy use of social networks for entertainment may be motivated, according to the authors [30], by a desire to release the pressure accumulated as a result of carrying out certain stressful professional activities. As elsewhere the investigation shows that 55% of the respondents believe that they cannot do without the social network. This is consistent with studies [28] [33] which present the development of a new dependence of workers on networks, which can lead to an influence of their habits by social networks. According to [33] [34] this dependence can have negative effects on workers ranging from reduced performance at work to depression due to the pressure induced by social comparisons on social networks.



**Figure 4.** Use of social networks by workers.

The answers to the question “how do you think social networks impact your habits” are given in **Figure 5**. For this question 43.3% of workers think that social networks allow them to concentrate better at work, 25% of workers think that social networks allow them to distract themselves, 78% of respondents believe that the workers use social networks recreationally at work, and 20% of workers think that social networks allow them to waste time. These results lead us to wonder about hours workers are connected to social networks and how

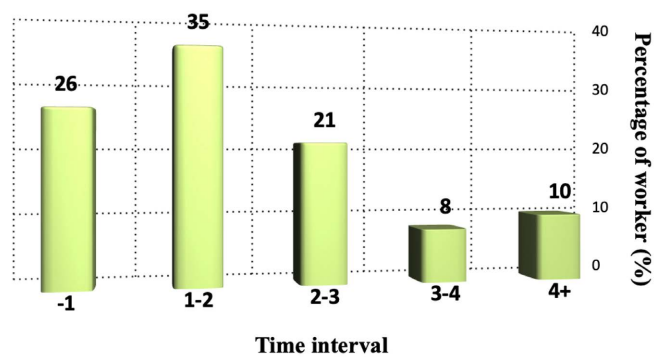
much time they spend there. The answers to these questions will be the subject of the next section.



**Figure 5.** Impact of social networks on workers habits.

#### 4.4. Time Spent on Social Networks by Workers

To answer this question, respondents had the choice between five time slots, namely: 1 hour, 1 to 2 hours, 2 to 3 hours, 3 to 4 hours, and more than 4 hours. The answers to this question are represented by **Figure 6**. We note that most of the workers (35%) spend at least 12.5% of their work time on social network. Keeping in mind that in Côte d'Ivoire a working day corresponding on average to 8 hours [35], this means that 35% of our workers spend 12% to 25% of their working day on social networks, compared to 26% who spend on average less than 1 hour. We have 21% of our workers who say they spend on average 2 to 3 hours on social networks, 10% spend more than 4 hours on social networks and 8% spend 3 to 4 hours on social networks. Thus around 18% of workers spend half a working day on social networks for generally non-professional reasons (distraction, recreation, loss of time) in view of the previous results. As a worker's productivity is often correlated with their working time [35], these results seem to indicate that social networks contribute to a drop in worker productivity. This can lead to a shortfall of more than millions for some companies as revealed by [36]. This high proportion of time spent on social networks for recreational activities may also be due to a desire to escape from a stressful professional environment. It is therefore essential for managers to take these factors into account in order to better guide their people management policy.

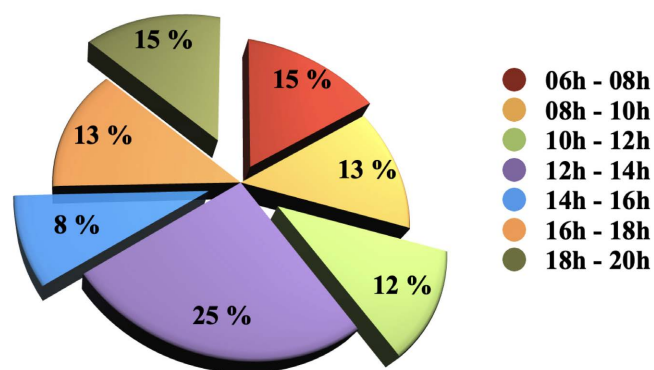


**Figure 6.** Time spent by workers on social networks.

#### 4.5. Top Connection Hours at Work

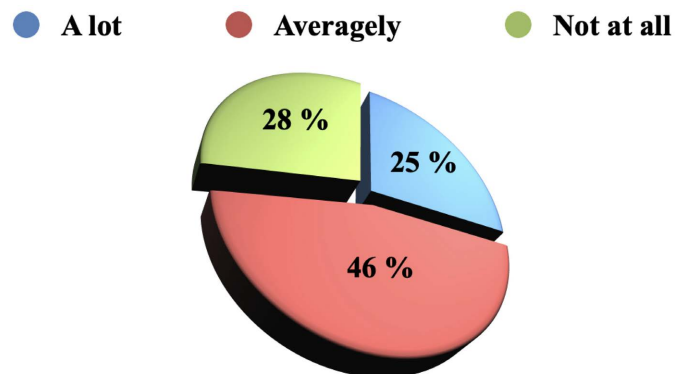
The previous analysis revealed that around 50% of workers spend on average between a quarter and a half of their working day on social networks, this finding can represent a big financial shortfall for companies [36]. As working days are generally governed by daily objectives, it seems important for managers to know the habits in terms of actual connection time on social network of their employees in order to better monitor the evolution and achievements of their workers' missions.

**Figure 7** shows the different connection time slots for workers per working day. It reveals that the majority (25%) of workers connect to social networks between 12 and 2 p.m., which can be explained by the fact that this time generally corresponds to break times. Between 2 p.m. and 4 p.m., we have 15%, also between 6 p.m. and 8 p.m. we have 15% of our workers connecting to social networks. Between 8 a.m. and 10 a.m., 13% of workers connect to social networks, the same goes for the 4 p.m. and 6 p.m. interval. Between 10 a.m. and 12 p.m. we have 12% of our workers who connect to social networks, finally between 6 a.m. and 8 a.m. we have 8% of workers who connect to social networks. When analyzing these results, we notice the hours of connection to social networks by workers are spread over the entire day. Since hours of high connection generally correspond to break times, this can help reduce the negative impact of social networks on worker productivity. In Cote d'Ivoire, the working hours are generally from 8 a.m. to 12 p.m. and from 2 p.m. to 6 p.m. for an 8-hour working day [35], we observe in our case that 52% of the workers questioned connect during their working hours which can lead to a drop in productivity during these hours [28] [33]. These results can be compared with those of [36], who present social networks as a factor in reducing worker productivity during working hours. Nevertheless, according to [8] [33] [34], they can be a way of relieving stress at work by providing positive distraction, fostering social connections, allowing creative expression, seeking support and practicing digital mindfulness. However, it is essential to use social media in a balanced way to avoid negative effects such as excessive distraction and social comparison, which can lead to a lack of productivity.



**Figure 7.** Top connection hours at work.

However, we asked the workers themselves what they thought about the influence of social networks on their productivity, the answers obtained are described in **Figure 8**.



**Figure 8.** Workers beliefs about the impact of social networks on their productivity.

It appears that 46% of workers think that social networks increase their productivity moderately, 28% think that it does not increase their productivity at all, and 25% think that it increases their productivity a lot.

## 5. Discussion

The use of social networks is a complex phenomenon influenced by a multitude of factors. As presented by [34] cultural factors play a key role, influencing the way individuals interact on these platforms. According to the “We Are Social and Hootsuite” report [37], there is evidence that in collectivist cultures, the emphasis may be on maintaining social ties, while in individualist cultures, personal expression and showcasing the self may prevail. Connection times can also vary from one region to another. As the RTBF news report shows, in countries like Japan the average time spent on social networks is 50 minutes, compared with 2 hours 17 minutes in the USA and around 3 hours on average in Côte d’Ivoire, according to our observations. What’s more, each platform has its own specific features that attract different types of user. WhatsApp, with its focus on simple conversation, is preferred for sharing information between friends and family, while Facebook, with its large number of subscribers and ease of inter-connection, is preferred by people to develop their circle of friends. According to [38], the use of these networks allows users to develop a sense of belonging which is used for their mental stability in the face of stress. Instagram, which focuses on the visual, is preferred by marketing and fashion professionals, while LinkedIn is more geared towards professional development and networking [38]. Professions also have a significant impact on the use of social networks [39]. Community managers, for example, have to navigate several platforms to create and maintain relationships with customers and followers, while media and journalism professionals use Twitter to follow trends and share information in real time. Time spent on the networks could therefore contribute to improv-

ing the productivity of certain professions. While professionals in highly technical professions such as construction and civil engineering will be less likely to connect on social networks. Finally, as [38] describes, education in good practice on social networks from an early age can also help to increase workers' productivity by helping them to manage their time and online interactions effectively.

## 6. Conclusions

During this study, we analyzed the habits of workers on social networks in Côte d'Ivoire. Analysis of our data revealed that the workers who are most likely to connect to social networks are between 25 and 34 years old, mainly using a smartphone. We found that the social network of workers in Côte d'Ivoire is WhatsApp, and that workers generally used social networks for entertainment, social relations, professional relations. Moreover 55% of workers consider that they cannot work without social networks. In addition, it appears that 35% of workers spend on average 1 to 2 hours of their working time on social networks, generally for recreational purposes. Generally, peak connection times are between 2 p.m. and 4 p.m. Finally, when asked whether they think social networks help them to increase their productivity, 46% of workers replied that they do so to a moderate degree. It should be noted that this study focuses on a descriptive analysis of the impact of the social media phenomenon on worker productivity. However, for future studies we can carry out a qualitative analysis of the impact of social networks on the mental health of workers.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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