

Impact of Work from Home During the Pandemic in Saudi Arabia

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Abstract—The unprecedented health situation in the year 2020 and to some extent 2021 has forced most businesses to operate online with people working from home (WFH). Like almost all countries in the world, Saudi Arabia has suffered from the shocking unstable health situation facing the COVID-19 pandemic. This study investigates different WFH impressions and behaviors that Saudi employees have built during the pandemic and how that has changed over time. We have conducted surveys in two different phases among Saudi employees that have come from varied personal and job-related demographics, including different gender, marital status, cities, managerial roles, job sectors and company sizes. Our data provides a good comprehensive coverage along different demographics. Key findings includes that for 75% of the people it was a brand new experience especially for big companies employees, people's performance and satisfaction depended on the sector that they work for and their marital status, while life work split was the top challenge and flexibility was the top advantage.

Keywords— *Remote, Work from Home, Saudi Arabia, Behavior*

I. INTRODUCTION

The unprecedented health situation in the year 2020 and to some extent 2021 has forced most businesses to operate online with people working from home (WFH). Given the novelty and the challenges of working from home, employees have responded to and coped with the situation in many different ways. This transition from working on-site to working from home has been sudden (first time ever) for a large number of people and has certainly impacted not only their working style but also their health and wellbeing. The main goal of this paper is to gain a better understanding of how work-from-home caused by the COVID pandemic has impacted the personal and professional lives of people. Such an understanding will aid the government organizations and the industries to make appropriate changes in rules and working procedures to improve both business productivity and the quality of life of the people.

Since culture and nationality are likely to play a major role in how this sudden transition to work-from-home has impacted the personal and professional lives of the people, we have focused our research on the impact in Saudi Arabia in particular. The main reason for focusing on Saudi Arabia is that one of the researchers has a very good understanding of the culture and national rules and regulations of Saudi Arabia. We discuss later how the findings of our study could be extended to other countries. Like almost all countries in the world, Saudi Arabia has suffered from the shocking unstable health situation

facing the COVID-19 pandemic. As of the date of the writing of this paper, there are 496,516 confirmed cases in Saudi Arabia, 1.6% of which have resulted in deaths [1]. This study investigates the different WFH impressions and behaviors that Saudi employees have built during the pandemic and how that has changed over time. In particular, our goal is to answers to the following research questions:

- How did COVID-19 impact remote work in Saudi Arabia?
- How much is WFH a new experience for the Saudi employees?
- How satisfied were the Saudi employees with WFH during the pandemic?
- How did people behave when working from home compared to working on-site?
- What were the top WFH challenges for the Saudi employees?
- How did impacts of WFH change over time as people got used to it?
- How did the impact of WFH vary over different demographics?

To answer these research questions, we have conducted two surveys in two different phases among Saudi employees that come from varied personal and job-related demographics, including different gender, marital status, cities, managerial roles, job sectors and company sizes. The first phase of the survey was conducted during April-May 2020 (beginning of the pandemic) and the second phase of the survey was conducted during January-February 2021 (when the pandemic had somewhat subsided). Analysis of survey results from these two phases has given us a good insight into the initial impact of WFH as well as how this impact has changed over time.

II. RELATED WORK

This study is concerned with Saudi employees WFH behaviors during the pandemic. We categorize the literature into the following: Work From Home Worldwide and Work From Home in Saudi Arabia.

A. *Work from home worldwide*

Remote work has been studied from many aspects such as meetings [2], collaboration [2]–[4], teams [3], [5], crowdsourcing [4], [6], intercultural communication [10] and well-being [3], [4]. For instance, Cao et al. [2], have studied multi-tasking in behaviour in remote meetings by analysing a large telemetry dataset and 715-person diary studies of Microsoft Employees. Their results show that there are multiple factors that lead people to multitask such as meeting size, length time and type. They have also found that multitasking has good outcomes such as boosting productivity, and bad outcomes like mental fatigue, loss of attention and being disrespectful. Another study by Cao et al. [5], have tried to understand team viability through building a classification model from a dataset of 669 10-minutes text conversations of online teams. Their findings suggest that the most viable teams are the ones that engage with others' ideas most. Another study about remote collaboration [2] has investigated the consistency of team fracture reasons by conducting an online experiment where each team member was given some tasks to accomplish and then given a chance to blacklist teammates. They have found that for certain tasks, early team interaction could be a reason for team fracture, but not for other tasks. Retelny et al. [4] have introduced an idea of expert crowdsourcing which they call Flash Teams. Supported by an online system, Foundry, these kinds of teams have accomplished complex projects in a short amount of time unlike traditional self-managed teams. Moreover, Valentine et al. [4] have built on top of Flash Teams [4] to introduce the idea of Flash organizations where crowds are structured like organizations to achieve complex open-ended goals. He & Huang [6] have studied intercultural communication tension in face-to-face workspaces vs remote communication. Their findings suggest that the cultural challenges are independent of the communication medium.

B. *Work from home in Saudi Arabia*

Few studies have looked into the Saudi employees working from home. Ahmed & Khalil [7] surveyed 300 Saudi Employees from different companies to understand if they and their organizations adjust to WFH and what motivates them to continue working online even after the pandemic. Their results show that the intentions to adopt working from home are influenced by employees' attitudes, subjective norms, and self-efficacy. Another study by Alshehri et al. [8] during the COVID-19 pandemic was conducted at a college in Saudi Arabia. This study investigated the experiences and the effects of the pandemic on education and suggested some lessons and how to mitigate the negative effects related to the crisis. Aburas [9] conducted an online survey study to reflect on the perceptions of the environment of the workplace during the pandemic. The results show that during COVID-19, most of the participants were working in individual offices and that women were more concerned about workplace health safety than males [9].

III. DATA COLLECTION

Our study is mainly concerned with assessing the impact of WFH on the personal and professional lives of people in Saudi

Arabia, and thus we conducted an online survey (Phase 1) at the beginning of the pandemic that asks Saudi employees about their remote work behavior during the pandemic. We are also interested in understanding how this impact has changed over time as people got more accustomed to WFH. So, we conducted a second survey with one additional question (Phase 2) about ten months later. Google forms were used in both the phases, the survey was administered in Arabic language, and social media platforms were used to recruit survey participants. The first phase was conducted in April-May 2020 (beginning of the pandemic) and the second phase was conducted in January-February 2021 (when the pandemic had mostly subsided). The total number of Saudi employees who answered our surveys is 411: 151 survey participants in the first phase and 260 survey participants in the second phase. All participants took the survey on a completely voluntary basis, i.e. they were not paid to take the surveys.

The survey consisted of 23 questions, divided into three different categories: three personal questions, four job-related questions, and sixteen WFH related questions. The additional question in the second phase was "Do you still work from home now?". The demographic questions included inquiries about gender, marital status and the city of residence. The goal was to understand how the impact varied over these three demographic characteristics. The job-related questions were concerned about the characteristics of the industries (number of employees; job sector – government, private or business; and job field - health, finance, education, etc.). The reason for including these questions is that there is a high chance that the impact of WFH would be dependent on the characteristics of the industries that employees work in. Finally, the WFH-related questions queried working schedule, number of hours worked per day as well as health and wellbeing.

IV. SURVEY RESULTS

This section summarizes the results of the survey and draws conclusions based on the data collected.

A. *Participant Demographics and Workplace Characteristics Distribution*

The gender distribution among the participants is 70% males and 30% females. Marital status distribution is 50.7% married with children, 10.6% married with no children, 35.4% singles living within a group, and 3.2% singles living alone. Finally, Cities distribution is 32.8% from Riyadh - The capital city of Saudi Arabia, 14.6% from Khobar, 13.9% from Dammam, 9.2% from Dhahran, 7.7% from Jeddah, and the remaining 21.8% from 22 other cities in Saudi Arabia. Overall, we observe that our data provides a good comprehensive coverage along the three personal characteristics we measured.

From the respondents 33.8% were holding managerial roles and 66.2% did not. The job sector distribution was 61.1% private sector employees, 26.5% government employees, 4.5% entrepreneurs, 3.5% students and the rest were freelancers, retired, unemployed and others.

The fields that the respondents came from were 27.2% information technology, 21.4% education, 12.5% energy, 6.2%

manufacturing, and the rest were finance, health, telecommunication, professional services, retail, construction, automobiles, supply, food, hotels, delivery, agriculture, entertainment, real estate, media, sports and others.

The distribution of companies/organizations sizes were 34.7% who have more than 5000 employees, 18.8% had from 11-50 employees, 14.9% had from 1001 - 5000 employees, 12.4% had from 51 - 250 employees 11.1% had from 251 to 1000 employees, and 5.9% had from 1-10 employees.

Table 1: Survey Participants Analysis

Gender	70% Male; 30% Female
Marital Status	50.7% Married with children; 10.6% Married with no children; 35.4% Singles living with in a group; 3.2% Singles living alone
City	32.8% Riyadh; 14.6% Khobar; 13.9% Dammam; 9.2% Dhahran; 7.7% Jeddah; 21.8% others (22 cities)
Job Roles	33.8% Managerial; 66.2% Non-managerial
Job Sector	61.1% Private; 26.5% Government; 4.5% Entrepreneurs; 3.5% Student; 4.6% freelancers
Job Field	27.2% Information Technology; 21.4% Education; 12.5% Energy; 6.2% Manufacturing; 32.3% Other (finance, health, telecommunication, etc.)
Company Size (Number of employees)	34.7%: More than 5,000; 14.9%: 1000-5000; 11.1%: 251-1000; 12.4%: 51-250; 18.8%: 11-50; 5.9%: 1-10

Overall, we note that our data reflects a very good coverage of participant demographics as well as different characteristics of the workplace in Saudi Arabia.

B. How did COVID-19 impact remote work in Saudi Arabia?

In our survey, 62.3% of the participants said that some of the employees of their companies have moved to remote work while 32.3% said that all of the employees of their companies have worked remotely. Moreover, 1% (4 respondents) said that their work has stopped completely. However, 4.4% said that none of the employees from their company have worked remotely.

We have looked after that into the differences among each group. To test the difference, we have used Kruskal–Wallis test [10]. If the p-value is less than 0.05 then we consider the difference to be significant. If the value is greater than 0.05 then we assumed no significant difference and do not report the results, unless for some cases where there are differences between individual characteristics which will be mentioned in each case.

When we look from a sector lens, we see clearly that there is a difference in the distribution ($p\text{-value} = 2.3 * 10^{-25}$), where the technology sector was leading in allowing its employees to work remotely, where 54% of tech sector employees said that all of the employees have worked remotely. On the other hand, in the energy sector, only 4% of the employees have reported that all of their employees have worked remotely. This might be caused by the fact that energy companies in Saudi Arabia are mostly huge companies that have many departments that are impossible to move remotely, especially the ones who work in the field.

Another difference in the impact was among company size ($p\text{-value} = 3.04 * 10^{-6}$). Data shows that as companies get larger, the percentage of employees who work remotely decreases. For instance, 62% of companies of sizes of 1-10 have reported that all of their employees have moved to remote work, while in contrast, only 22% of companies of sizes more than 1000 have all worked remotely.

Finally, if we look at it from a city angle, we can see that Jeddah and Riyadh were at the top, where all of their employees worked remotely compared to cities in the eastern province such as Khobar, Dammam, Jubail and other eastern cities ($p\text{-value} = 1.96 * 10^{-07}$). We can refer to that again to the size of the companies in the east.

C. How much is WFH a new experience for the Saudi Employees?

Remote work is a new experience in Saudi Arabia. For about 75% of the participants, it was a new experience. The only category that differed was companies with size ($p\text{-value} = 0.035$), where it is worth noting that this was neutral for small companies (1-10). About where half of the employees from these companies reported that it was a new experience and half said it was not. This might be due to the fact that some of these companies started in the period of the pandemic. There is no significant difference among other categories.

D. How satisfied were the Saudi employees with the WFH during the pandemic?

People who liked remote work were clearly more than those who did not, where 54.7% rated their satisfaction as 4 or 5 out of 5. On the other hand, 20% of them chose 1 or 2. Between these two groups we have 25.4% who were neutral about it.

Among different marital status groups there were some differences ($p\text{-value}: 0.001$). Married people with no children were the most positive people about the pandemic with a positive percentage of 76%, then comes singles who live alone with 61% positive satisfaction ratio. The last two groups, who both live with groups, had almost equal positive percentages for about 50%. It looks like people who live with a large group had some issues in remote work.

We asked them another question about whether they would recommend working from home to others. About two thirds

agreed; (28% said strongly and 36.6% said yes). Moreover, about one third of them said they might recommend (28.5%). Only (5.9%) said they will not recommend it. Married people who live alone and singles who live with a group were the top people who would recommend work from home (p-value: 0.04).

E. How did people behave compared to working in the workplace?

We asked participants three questions to understand their work from home behavior. Two questions about the number of working hours, followed by one about when do they start working, and finally a third about where they usually work from while working remotely.

1) How much time do they work?

In terms of average working hours per day, people varied. There are high (34.7%), low (35.1%) and average performers (30.2%). Specifically, 12.1% reported working more than 10 hours, 22.6% worked 8-10 hours, 30.2% worked 5-7 hours, 26.1% worked 2-4 hours and 9% worked less than two hours. And this is consistent with the question after it where we asked them to compare their working hours now with the in-person working hours. Their responses were 37.9% saying they were working more hours, 37.4% saying they were working less hours, and 24.6% saying they were working about the same.

A very clear difference was between married people with children and singles who live alone in the number of working hours (p-value= $3.68 * 10^{-7}$). About 16% of the first group reported working less than two hours on average versus near zero for the other groups. On the other hand, about 30% of singles who live alone reported working more than 10 hours versus at most 16 % for the other groups.

It is so clear that the singles who live alone were the highest people in working hours.

Another significant difference was among government vs private employees ($2.5 * 10^{-9}$). Data shows that government employees worked less than private employees where about 45% of government employees reported working two to four hours on average versus only 17% private sector employees. One reason for this would be that the required number of working hours for government employees is less.

Supporting that is when we looked at sector differences (p-value: $5.9 * 10^{-11}$), it was clear that the employees in the education sector were working less number of hours during the pandemic. For instance, more than 50% reported that they've been working for two to four hours on average. Compare that to only 10% and 11% for the sector of energy and information technology, which are mostly private sectors. On the other hand, less than 10% of employees from education reported working more than 8 hours versus about 40% and 50% for energy and information technology respectively.

2) When do they start working?

Then we asked them about when they start working during the day. The answers show that more than 60% were morning people, where the majority of them start working from 9 AM-12 PM. However, 21.8% did not have a specific time to start. Finally, only a few people (5.5%) start at night.

During morning hours, it looks like employees from the energy sector were the most active people (p-value= 0.0002). Data shows that more than 60% of people start working before 9 AM. On the other hand, we see that most of the IT sector starts much later. And finally, Education employees starting time was well distributed throughout the day.

Aligned with sectors, we see that large companies work early most of the time (p-value: 0.04). About 40% of the employees start before 9 AM and about 26% start before 12 PM. The majority of mid-size companies, on the other hand, start between 9 AM and 12 PM. Unlike others, smaller company employees were most flexible in starting work time.

There are also some differences between cities (p-value=0.0002). Data shows that employees of the east side of Saudi Arabia start earlier than other cities. This might be due to the fact that large companies are in the east. Interestingly, less than 15% of Riyadh, the capital city of Saudi Arabia started before 9 AM. On the other hand, Al-Madinah had the most people that work at non-specific time during the day.

3) Where do they work from?

The last question we asked them about where they work while working from home. Three locations were the most dominant, home office 38.1%, living room 37.3% and bedroom 18%. The rest were kitchen, backyard, and no specific place.

Among demographics, the noticed difference was among gender (p-value= $6.5 * 10^{-6}$ by looking at only bedroom and living room) and marital status (p-value=0.0006) Both genders were almost equal in having a home office. However, females were working more in bedrooms (33% females and 14% males) and less in living rooms (26% females and 45% males) than men.

Next we looked into the marital status where singles who live alone are almost not working in their bedroom at all versus singles who live with a group (42%). The other groups were well distributed among working in the living room and home office.

F. What were the top WFH challenges for the Saudi employees?

We gave the participants a list of challenges that they faced while working from home, and asked them about which ones they consider applicable. The top challenge was the inability to split between life and work (46.7%). Then comes communicating with the team (37.8%), weak internet connection (33.2%) and being able to focus (32.7%). After that comes the inability to stop working (28.4%), finding the right place to work (27.4%) and feeling loneliness (21.3%). The least three problems were managing the team (17.5%), family don't like to see the employee working at home (14.5%) and staying motivated for a long time (14.2%).

We've got other challenges that some of the participants have mentioned. Couple of them were related to the unorganized work-life time and that the company asked for work during non-working times. Others were not able to manage sleep, a lot of meetings and easy to fake excuses by employees.

Among genders, challenges were almost the same except for three (p-value: 0.027). First is the separation between work and life, where almost 60% of females reported it to be a challenge, whereas only 40% of males reported it as a challenge. Second is the inability to stop working, where also 40% of females mentioned it as a challenge, while only about 22% of males reported it. Finally, the ability to manage the team was reported by almost 20% of males and only 5% of females as a challenge.

When we looked at challenges and differences between marital status, it was so clear that singles who live alone were facing more than others in five challenges (p-value= 7.29×10^{-6}). The first challenge was separation between work and life where almost 70% of them reported as opposed to less than 50% for the others. The second most two challenges were the feeling of loneliness and the inability to stop working, which almost 53% reported it. The fourth challenge that 30% of singles who live alone reported was the ability to stay excited for a long time. The final challenge was that their families did not like seeing them working at home.

Another question was about interruptions during working from home. Almost half of the participants rarely get interrupted (38.8%) or do not get interrupted at all (19.3%), while one-third sometimes get interrupted (28.5). Finally, almost one-fifth of the participants do not get interrupted at all.

G. What were the top WFH advantages for the Saudi employees?

When we asked the participants about the top advantages of remote work, three advantages were the most dominant: flexibility of time (66.2%), spending more time with family (62.2%) and not commuting to work (61.2%). Then comes two advantages that about one third of the participants reported, which are being more productive (38.3%) and the ability to focus more (29.4%). And the least advantages were less

micromanagement (19.1%) and more confidence in expressing myself (19.3%).

No clear difference in advantages was found among different genders, however among different marital status there were some (p-value=0.0001). For instance, more than 45% of singles who live alone reported that their focus increased versus less than 30% for the other groups. Likewise, 50% of them reported that their productivity also increased versus less than 40% for the other groups. In terms of spending more time with family, singles who live alone reported the least (~40%) and married people who don't have children reported the most (~80%).

Some other advantages reported were less cost, more learning, and new ways of presentation.

H. How did impressions change with time?

If we look at satisfaction in general, we can see that there was no significant change. However, when we start looking at satisfaction from the gender perspective, we can see that there is a clear change in satisfaction for women (p-value=0.003). For instance, in 2020 40% of women reported a positive satisfaction rate. This percentage increased to 68% in 2021.

V. CONCLUSION

Work from home was a new experience for a lot of people around the world, and for about 75% of the people in Saudi Arabia, especially those who work in large companies. In this paper, we have reported our observations about the WFH impressions and behaviors that Saudi employees have built during the pandemic and how that has changed over time based on two surveys we conducted with 411 employees. We observed that people's performance and work satisfaction have changed in both positive and negative ways. A lot of factors played a role such as marital status and job sector. On one hand, the WFH experience came with several challenges like life-work separation, the ability to focus, and the feeling of loneliness. On the other hand, people had more flexibility, appreciate the time they get to spend with their families, not have to commute to their work place, and for some, increase in performance.

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