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The effects of working out of the office on employees' productivity in the Palestinian high-tech companies

اثر العمل خارج المكتب على إنتاجية الموظفين في شركات التكنولوجيا الفلسطينية

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This Thesis was submitted in Partial Fulfillment of the Requirements for the Degree of Master in Business Administration, from the Faculty of Business and Economics at Birzeit University, Palestine.



Faculty Of Graduation Studies

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إهداء

إلى روح المعلم الأول ... أشرف الخلق ... سيدنا محمد صَلَّى اللهُ عليه وسلَّم

إلى أبي العطوف.... قدوتي، ومثلي الأعلى في الحياة؛ من علّمني كيف أعيش بكرامة وشموخ

إلى أمي الحنونة..... لا أجد كلمات يمكن أن تمنحها حقها، فهي فرحة العمر، ومثال التفاني والعطاء

إلى إخوتي علاء و فداء ولانا ومحمد واحمد سندي وعضدي ومشاطري أفرحي وأحزاني

إلى عمتي الحبيبه صباح ... إلى أبناء اختي حسين ومصطفى وكريم أحبة القلب

إلى جميع الأخلاء؛

أهدي إليكم بحثي العلمي في إنتاجية الموظفين اثناء العمل عن بعد.

شكر

في بداية رسالتي العلمية، لا بد لي من أتوجه اولاً بالشكر لله عزّ وجلّ الذي وفقني للوصول الى هذه المرحلة العلمية ومهد لي الطريق لأن أكون بينكم اليوم لأناقش رسالتي في الماجستير.

كما أتوجه بالشكر والامتنان لكل من الدكتور طارق عاشور والدكتور سمير بيضون ، فقد كان لإشرافهما ومنحهما الكثير من الوقت لي اليد الأولى في خروج هذه الرسالة العلمية بالشكل الذي ظهرت عليه، كما كان لتوجيهاتهما ونصائحهما دور أساسي في إتمام دراستي العلمية.

والشكر موصول لأعضاء لجنة المناقشة الكرام الدكتور نجود حبش والدكتور سماح أبو عصب على تفضلهم بقبول مناقشة رسالة الماجستير هذه.

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Chapter One

This chapter is addressing the problem statement, research introduction, research objectives, questions, variables, and research significance.

1.1 Introduction

High-tech nowadays is a prominent sector, and it's mostly being part of almost everything, from the low level up to the end-users application of mobiles and desktops. (What Is Telecommuting and What Are the Benefits, 2020) Telecommuting is the ability to work from home, the beach, and coffee shops using telecommunications tools such as email, phone, chat, and video apps. Telecommuting comes with a lot of benefits for both workers and the company they work for, for instance, employees would enjoy a more flexible schedule, as they can do their tasks without pressure, and may not experience the distractions of the workspace. Employees would also save on transportation costs. With telecommuting, companies can also save money, and cut off costs, for instance, the cost of renting buildings, equipment, and offices will be minimized. However, telecommuting also comes with its challenges, as it may affect the social life at the company offices, and some employees may have more distractions in the telecommuting environment, and also, telecommuting could mean reduced security for the organization. Companies' sites were the traditional place where the employees would work, do

their tasks, meet the team members, and socialize, this is the common working style. However, with the recent dramatic change in the technologies and the infrastructure, a new working style started to appear; telecommuting. The high-tech industry had been observed to be a dominant sector; many small firms and startups started to grow, and some world-leading giant high-tech companies started expanding and working across their national borders. With this growth, some companies started to outsource their high-tech posts globally. The high-tech field in Palestine is also observed to grow, some international companies started to establish their foundation in the West Bank and Gaza, for instance, Nvidia corporation had established a stand-alone branch in Rawabi city. Although Palestine is considered a developing country, the global high-tech market started to be exposed to the local Palestinian market via the outsourcing idea; where the global companies started to export\outsource part of their business tasks to the engineers in Palestine. As a result, many contingent companies started to appear and sign outsourcing contracts (e.g. ASAL, Exalt, and ProGineer). Studying the effects of telecommuting on high-tech employees' productivity is considered key; the Palestinian market should be ready to adapt or find alternatives. During the COVID-19 pandemic, and especially during the lockdown period in Palestine, high-tech engineers had to commit to their tasks remotely, especially from home. The alternatives were so limited, so the adaptation of telecommuting was mostly the only available option for both high-tech employers and employees. Post lockdown, things were flipped upside-down; some engineers asked to continue working completely out of the office, and others asked to continue working in the rotation style (mix of in-out).

Recently some Palestinian high-tech companies started to develop their off-site work policies. This requires investigating the effect of telecommuting on employees' productivity.

Hence, this study examines the effects of telecommuting on employees' productivity in Palestinian high-tech companies.

1.2 Problem Statement

While Palestinian high-tech companies are growing and being exposed to the global market via outsourcing; telecommuting is observed in this field, and some Palestinian high-tech companies started to develop their off-site work policies. This study addresses the following question:

What are the effects of telecommuting on employees' productivity in Palestinian high-tech companies?

1.3 Research Objectives

This study aims to meet the following objectives:

1. To analyze the main factors that control telecommuting in Palestinian high-tech companies.
2. To recommend to the high-tech companies what to consider while developing their off-site work policy
3. To direct the Palestinian high-tech engineers on how to be more productive while telecommuting.

4. To recommend to the Palestinian high-tech companies how to build up more productive high-tech telecommuting engineers.

1.4 Research Questions

This study is going to address the following questions:

1. How does the trust between Palestinian high-tech employees and employers influence productivity when telecommuting?
2. To what extent do the social activities of Palestinian high-tech companies affect the productivity of telecommuters?
3. What are the effects of the seniority of Palestinian high-tech employees on their productivity when telecommuting?
4. How does the availability of equipment affect the Palestinian high-tech employee's productivity when telecommuting?
5. To what extent does the age of the Palestinian high-tech employees affect their productivity when telecommuting?
6. What are the effects of the marital status of Palestinian high-tech employees on their productivity when telecommuting?

1.5 Research Significance and Importance

Since telecommuting is something new to the Palestinian market, and as it's something recently observed to be prominent in the high-tech sector (especially during the COVID-19 spread and lockdown), it's important to study and investigate its effects on the high-tech engineer's productivity. As the high-tech sector is observed to be a growing sector in Palestine,

this study will be helping both the high-tech employers and high-tech employees in advance productivity. This study will also be helping in boosting the high-tech sector in Palestine, which as result, will be boosting up the Palestinian economy.

Limited to what the researcher reviewed in the literature, while many global studies consider productivity; **few** of them are highlighting telecommuting and also, according to our best knowledge, none are targeting the local high-tech market in Palestine. This study will enrich the knowledge of the Palestinian high-tech companies about their telecommuting employees' productivity.

1.6 Variables

This section lists the independent variables and the dependent variable.

1.6.1 Dependent Variables

1. Employee Productivity.

1.6.2 Independent Variable

1. Organization Trust.
2. Social Activity.
3. Equipment Availability.
4. Employee Seniority.
5. Employee Age
6. Employee Marital Status.

Chapter two

This chapter is addressing the literature review, conceptual framework, research hypothesis, research methodology, research tool, population, sample selection, and Questionnaire Arbitration\Mediation

2.1 Literature Review

Rupietta and Beckmann (2018) studied the effect of working from home on the employees' effort and showed how the effort is affected by working from home, they empirically analyzed an already recorded data for employees who are always working from home and presented descriptive statistics compared to records that are generated for employees who are always working from the office. They concluded that employees, who can work from home, provide substantially higher work effort, and the more effort spent the more productive the employees are. They also deduced that the work from home frequency matters, where the more frequent the employee is working from home, the more work effort they will provide. They also extrapolated that employers can benefit from the implementation of working from home, as they may save operating costs due to reduced office space. Thorstensson (2020) furthermore examined the effects of telecommuting on employees' productivity, he reviewed five research articles published in 2000 and 2019\2020 to figure out the factors having effects on productivity.

He listed out two main forces, the first one is the organization's trust, where employees trust their employers are productive. The second one is the suitability of the telecommuting workplace in terms of quiet, no interruption, no distraction, and availability of equipment like healthy desks and chairs. The quieter, less distracting environment the employees have, having access to the appropriate equipment; the more productive they will be. Based on multi-case study research involving six Australian organizations, Kurnia et al. (2017) concluded that appropriate IT support is a key factor in increasing telecommuter productivity. IT support includes fast machine and internet connection, accessories like quality microphones, and video conference stuff. They furthermore highlighted that trust is also a key to the employee's productivity when working from home.

Toscano and Zappala (2020) scrutinized the effects of social isolation on remote workers' productivity, they conducted an online survey on Italian employees who had to work from home during the spread of COVID-19. The responses of 256 workers emphasized that social isolation has negative effects on workers' productivity. Similarly, Misap (2017) noticed that lack of social interaction causes employees to feel more isolated and lonely, especially those who work from home, as there are not many daily social activities to do when working from home compared to the socializing daily activities the employee enjoys in the office. Moreover, he noted that socializing in the workplace and face-to-face interaction increases the employee's productivity, as social interaction in the workplace is fundamental to an overall sense of well-being for employees. He finally recommended that managers and leaders should consider arranging social activities outside of work to break the isolation and loneliness. Likewise, employees working

from home may feel a disconnect from their colleagues and the organization, also, more informal and social catch-ups would help in getting rid of isolation feelings (*Advantages and Disadvantages of Employees Working at Home*, 2019).

Nakoi (2011) investigated the effects of employee senioritis on the overall firm productivity, it's a descriptive study based on data panel analysis of Japanese firms between the years 1977–2008, he concluded that the firm productivity will be increased as its employee's seniority and employment age increases. Similarly, Blakemore and Hoffman (1989) empirically tested the implications of seniority rules on productivity, and they figured out that seniority roles have a statistically significant positive impact on productivity, where senior employees are expected to be productive. They. Likewise, Der Rijst and Garg (2015) showed that professionals' productivity would increase while they are working from home, but on the other hand, there is a danger of having the professionals isolated.

Moreover, based on exploratory research, der Rijst and Garg (2015) pointed out the benefits and pitfalls of employees working from home. They distributed a questionnaire to a population of 1612 employees, and 320 out of them were randomly selected to fill up the questionnaire. Based on the 48 responses that had been answered, the study showed that interpersonal trust had a weak positive relation to the experience of working from home. They also found that greater employee productivity and an improved work-life balance are among the most common improvements of working from home. On the other hand, midwifery et al. (2012) figured out there is a significant correlation between organizational trust and productivity in the

nursing sector. They noticed that the metrics of organization trust like loyalty, competence, honesty, and stability were above average, and the nurse's productivity was also more than average. Similarly, Setiawan et al. (2016) also concluded that there is a significant direct effect of trust on job performance, it's a case study on employees at the university of Ternama The study showed that employees who believe in the organization will produce optimal output. They also studied the effect of organizational structure on job performance, and it turns out that organizational structure and job performance are not related.

Skirbekk (2004) studied the effects of age on the employee's productivity, where he surveyed supervisors' ratings, and employee-employers datasets to estimate how the individual productivity variation varies with the age. The study showed that employees' productivity will start to decrease as the employee becomes older, especially when the job requires strong problem-solving and learning skills. The study also showed that earnings will continue to increase until late in the employment age, while employee performance tends to increase in the first few years of joining the labor market. Skirbekk (2021) also recommended a better age mix in the workplace, allowing older and younger individuals to benefit from their comparative advantages. Based on empirical analysis of datasets for Dutch manufacturing covering the period 2000–2005, Stoeldraijer (2011) showed that the effect of age on both wages and productivity converges, where there is no gap between productivity and the wages the ages changes, as they examined the relationship between age, wages, and productivity, this study is exploratory research. As reported by Cardoso et al. (2011), who also studied and compared the age-wage and age-productivity profiles over 22 years using longitudinal employer-employee

datasets, productivity increases until the age of around 50, while wages peak around the age of 40. They also concluded that older workers are worthy of their pay, as their contribution to productivity is much more than their contribution to the wage bills. Using data from 27 European and non-European countries, Boring and Grogard (2021) studied the effects of age on employees' productivity and concluded that age is associated with a significant reduction in activities that promote or enhance potential productivity, where they found that the oldest employees have lower productivity scores compared to the middle-aged employees.

Xie and Shauman (1998) empirically examined the effect of gender differences on research productivity, they did a systematic and detailed analysis for a cross-sectional survey of postsecondary facilities in four years 1969, 1973, 1988, and 1993. They found that the sex differences in research productivity declined over that period, with the female to male ratio were increased from 60% to 80% in the early 1990s. They also found the difference in female-male productivity in research is mainly due to differences in personal characteristics, structural positions, and marital status. Backes-Gellner and Veen (2013) also investigated the effect of age diversity in a company on its productivity, they introduced a theoretical framework that helps integrate results from diversity research to derive empirically testable hypotheses of the benefits of costs and diversity derives the company productivity, assuming the age as a moderator variable. They concluded that age diversity has positive effects on productivity only if the company engages its employees in creative tasks more than routine tasks.

Mehay and Bowman (2005) investigated the effects of the men's marital status on the employees' performance, they analyzed quasi-longitudinal data that track the marital status and job productivity for employees of a large company, including promotion and performance reviews. They concluded that married men are more likely to be promoted and are more productive than single men. However, the size of the marriage affects productivity, but eventually, their productivity remains robust. Similarly, Korenman and Neumark (1991) figured out that married men are more likely to be engaged in higher-paying jobs, and also will receive higher ratings and performance evaluations compared to single men, the study investigated if married men are more productive than single men.

Bloom et al. (2015) also discussed if working from home in terms of work performance works or not. They followed the survey methodology, a satisfaction survey, and a work attitude survey on the care unit in the telecommunication industry. Two groups were involved, the treatment group of employees who were working 5 days a week from home for 9 months, and a control group of employees who worked 5 days a week from the office. After analyzing the survey responses, they found that working from home led to a performance gain of 13%, and also they found that home workers showed improved work satisfaction and experienced less turnover. They then applied the experiment to the whole firm, and the results showed a performance gain of 22%. Caramela (2021) too discussed the productivity of employees while working from home, she conducted a survey that targeted 1,004 full-time employees, and among that group were 505 people who worked from home. The study signified that working from home benefits both employees and employers. Employees-wise, it eliminates their daily

commutes and leads to healthier lifestyles, and employer-wise, it increases the employees' productivity. She also found that working from home can be more stressful than working at the office, and the most effective way for employees to stay productive is to take longer breaks. They also concluded that working from home can be more difficult for employees to connect with their co-workers.

Palumbo (2020) also investigated the implications of working from home on the ability of telecommuting employees to manage the work-life interplay. It's an empirical quantitative research, the effect of working from home is being investigated directly, and also through two mediating variables; work engagement and work-related fatigue. The study was applied during the COVID-19 spread when most of the sectors including the public sector had to work from home. He found that employees working from home suffer from conflicts between life and work. He also found that working from home triggers more work-related fatigue. Goyal and Malhotra (2021) also qualitatively analyzed the tweets that are related to working from home during the COVID-19 pandemic, and a random sample of 8509 tweets was downloaded using the package "twitteR" in R studio software. Then the sentiment in these tweets was analyzed and mapped to those categories; joy, trust, disgust, positive, anger, surprise, fear, sadness, and negative. They found that the majority of the tweets mapped are full of optimism, positivity, and trust toward working from home. They also figured out that some employees show negative intent toward working from home, where their working hours are increased and they encounter difficulties while balancing work and life.

In conclusion, the researcher found many factors that may affect high-tech employees' productivity while working from home. Some of the previous studies highlighted seniority as a major controller of the employee's productivity, where the retained employee with longer employment age is expected to be more productive. This is also considering the researcher's best knowledge in the Palestinian high-tech industry, which is considered a major factor too, especially the retained employees where whose responsibilities grow, and thus require higher productivity. Some of the studies also highlighted the availability of the equipment in the telecommuting environment as a key controller too, which also looks like a significant productivity factor, also with respect to the researcher's best knowledge in the industry, having quality equipment like PC, internet connection, and suitable accessories is very important, where most of the work was done through virtual private networks connected to the employer's side, and it's where for instance, having good internet connection makes a difference.

Also, other studies showed that age, marital status, and organization's trust are also controllers of the employees' productivity, Studies that highlighted the ages as a key looks also worthy to experiment, as it's common that especially with the later ages, manpower will start to decrease and in general, people become weaker as they become older. For marital status, many studies highlighted its direct effect on productivity, where married men are expected to be more productive. However, limited to what the researcher observed in the industry, this is not expected to be a key factor, as marriage implies more responsibility and thus, consumes more time during the working hours' account, it may imply more emergencies, duties, and family commitments.

However, as many studies highlighted this factor, it is also worth experimenting with it in the Palestinian high-tech industry.

Some other studies highlighted the effects of telecommuting on the employee's work-life balance and their psychology, where some of them concluded that telecommuting will make the employees' life balance harder, on other hand, other studies highlighted that telecommuting will give them the flexibility to better manage their time and day. Some of the studies concluded that telecommuting will lead to social isolation, and recommended doing team or company social activities to break this isolation, and thus, increase productivity.

In a nutshell, The researcher believes the main factors that control the high-tech employees' productivity in Palestine while telecommuting are employee seniority, equipment availability, organization's trust, and social activities. Employees' marital status and age are considered keys too, but not as important as the other variables.

The literature review is summarized in the below table:

Researcher Name	Variables\Discussion	Publish Year
Boring & Groggaard	Age	2021
Caramela	Effects Of Working From Home, Stress, and Work Breaks	2021

Goyal & Malhotra	Tweets Analysis Of WFH employees (Optimism)	2021
Palumbo	Work-Life balance Discussion	2020
Thorstensson	Trust, Equipment.	2020
Misap	Social Isolation	2017
NIBusinessInfo	Social Isolation	2019
Toscano & Zappala	Social Isolation	2020
Kurnia, Choudrie, Tsatsou	Trust, Equipment	2017
Rupietta & Beckmann	Work Frequency	2018
Der Rijst & Garg	Seniority	2015
Shinada Nakoi	Seniority, Age	2011
midwifery, Hodhodineghad, Aghahosseni, Rajaeepour, Bahrami	Organization Trust	2012
Setiawan, Murni, Ghozali	Organization Trust, Organizational Structure	2016

Bloom	Highlighted that telecommuting really works	2015
Skirbekk (two studies)	Age	2004, 2021
Cardoso	Age	2011
Van Ours & Stoeldraijer	Age	2011
Mehay & Bowman	Marital Status	2005
Xie & Shauman	Gender, Marital Status	1998
Korenman & Neumark	Marital Status	1991

Table 1. Literature Review Summary (Source: Author)

2.2 Conceptual Framework

2.2.1 Glossary

Telecommuting

Telecommuting is a working style that allows employees to work outside the traditional office environment. It is a fact that work does not necessarily need to be done in the office, it can also be done elsewhere (TechTarget, 2020). it's also called *Telecowrking*, and it's when an individual performs their job from outside a company's office (*What is Telecommuting*, 2021).

WFH (OSW) Policy

It's an acronym for Work-From-Home Policy (aka. Telecommuting Policy), Sarma and Medhi (2021) defined it as an agreement between the employer and the employees who prefer to have work from home privileges. The policy defines the expectations, duties, eligibility, and other work-from-home guidelines. In brief, it assures that all workers understand what is required of them when they choose to work from home.

It's also an outline of which workers are qualified to work remotely, for instance, those who can competently complete the work depending on themselves, with the tiniest supervision (*What is a work from home policy, 2020*).

Equipment Availability

It's the telecommuting essentials and home office equipment needed for telecommuters to complete their work. Telecommuting essentials are computer and internet connection, faster internet and higher data caps, and communication accessories (*Remote Work Equipment Checklist, 2021*).

Home office equipment is the requirement a worker needs to feel comfortable while working from home, for instance, a proper office chair and desk, and sometimes an additional monitor. Also, Kratz (2017) defined it as the instrument needed by the telecommuter to do their tasks, for instance, machines, and internet access, including a laptop, phone, printer, chair, and disk space.

Organization Trust

(Otto, n.d.) is defined it as the confidence of the employees in the actions of their employer company. This includes confidence in managers or individual team members. It can be characterized by the company's mission, the organization's culture, and values, ethics and fairness of the company processes, loyalty, competence, honesty, and stability of organization.

Working from home

It's a term used to describe the workplace of an employee who previously worked in a traditional office. Instead of sitting in an office with colleagues, the employees set up their workplace at home but still do the same work (*Working From Home: What It Means to Work From a Home Office*, 2021).

Employee Productivity

Employee Productivity (aka. workforce productivity) is an evaluation of the output of a worker. Productivity is evaluated in terms of output per time (*TechTarget Contributor*, 2014). Typically, As much of the business goals of any organization relies upon the productivity of its workforce, employee productivity is an important consideration for businesses.

Employee Seniority

Heathfield (2019) defined it as the length of time that a person has served in a position or worked for an organization. Seniority can bring higher status, rank, or precedence to an employee who has served for a longer period of time. Also, it's a term used to describe the employment age of an employee in a certain company, it's a privileged rank based on continuous employment with a company. Companies use benefits seniority in determining the employee's expected outcome, distributing the training opportunities, and salary advancement too (What Is Seniority in the Workplace, 2021).

Workplace Isolation

guide (2019) defined it as the lack of connection, friendships, and social connections at work. Employees working in such a workplace are less motivated to do more than the minimum, and as a result, their productivity is suffering.

Social Activities

M.S.(2020) defined it as events or pursuit that brings members of the community together, anything that brings members of a community together to interact like games and street parties. Examples of social activities that can be done with teams, like work sports days, escape rooms, and go-karting (*10 Work Social Event Ideas Your Team Will Actually Enjoy*, 2020).

2.2.2 Conceptual Framework

In this section, theories and past studies models used to analyze the productivity, and the significance and shortcomings with respect to the Palestinian market will also be addressed, and finally the adapted model will be shown as part of the framework.

Employee Age VS Employee Productivity:

Employee age effects on productivity were discussed in many previous studies, and it was the main key in the models used for factoring the productivity in those studies, where most of them highlighted especially the negative effects on older employees' productivity compared to young ones. The relationship between the age of the employee and employee productivity has been discussed in many previous studies. van Ours and Stoeldraijer (2011) While a significant number of researchers concluded the relationship between age and productivity is not clear to be negative, quite a number of researchers concluded that this relationship is mainly controlled by the type of industry of the company, and the nature of the tasks the employee is usually assigned to, for instance, Skirbekk (2004) figure out that the relationship between the age and the employees productivity is quietly not related firms that work in routine and regular tasks, and where the challenges in the task itself are not significant, while in firms where the nature of tasks implies problem-solving and analysis, it's expected to notice productivity degradation for older employees. As working in the high-tech field requires problem-solving skills, and implies meeting many challenges; where it needs special analytical skills, this variable will be tested in this study as below:

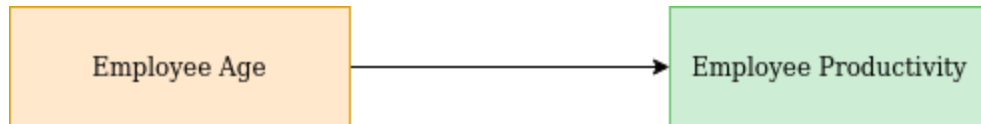


Figure 1. Employee Age to Employees Productivity (Source: Author)

As some of the previous studies showed that age is affecting productivity, it's also worthy to experiment, as it's common that especially with older ages; manpower will start to decrease and in general, humans become weaker both as they become older, also, as the high-tech field is a challenging field, and where the nature of the tasks is challenging and needed problem-solving skills, it's expected that the relationship between age and employee productivity is negative, where the older engineers will be less productive. Also, Boring and Groggaard (2021) believe that the age of employees mainly resulted in significant degradation in the productivity of the oldest employees.

With respect to the field of high-tech, as a challenging field that requires special analytical and problem-solving skills, the age factor will be considered in this study model, and the relationship will be tested by direct questions about this relationship, including both directions of the relation, younger and older productivity questions, where employees at the age of 50s and 60s, for example, are expected to be less productive than those in the age of 20s, 30s, and 40s.

Social Activity VS Employee Productivity

Telecommuting and working from home implicitly implies a lack of social & team non-technical activities, where the team members are working geographically apart from each other. Also, working from offices includes face-to-face meetings, socializing during the work itself, and not only between the team members but also with colleagues from other teams and departments. Some studies highlighted that Social Isolation is one of the drawbacks of telecommuting, and also models of some studies considered social isolation as an influential variable on employee productivity while telecommuting. Employees in the private sector in Palestine nowadays spend around 9 hours of their day at work, and now telecommuting means the employees would spend these hours away from their teammates, social interactions, face-to-face meetings, and the other daily activities they usually do in the office. This is expected to leave the employee with isolation & loneliness feeling, which, Misap (2017), and Toscano and Zappala (2020) expected to take their productivity down. Misap (2017) also suggested that managers and leaders should consider arranging social activities outside of work to break the isolation and loneliness.

As a result, it's expected that companies that schedule social activities for their telecommuters, would make them more productive. the relationship is shown in the figure below:



Figure 2. Social Activities related to Employees Productivity (Source: Author)

The team-building events and social workdays are an essential part of any company's overall health, he listed examples like team events, work sports days, and go-karting (*10 Work Social Event Ideas Your Team Will Actually Enjoy*, 2020). So companies gathering events are expected to influence the productivity of the telecommuters, where they will be combined at a place where they socialize and interact with each other, and thus the expectancy is that the isolation feeling will be broken, the expectancy was derived from the past studies. Winslow et al. (2019) developed a measure of informal workplace social interactions, and part of this measure will be considered for checking the status of the employee's engagement in social activities with their colleagues outside of the workplace.

As the social activities are being highlighted as a significant key for the isolation breakage, and thus the productivity will be increased, the social activities will be adapted in the model of this study, and the relationship between the social activities and the employee's productivity will be tested through direct questions about the correlation between them, where companies and teams doing social activities are expected to be more productive.

Organization Trust VS Employee Productivity:

In keeping with the models encountered in the review of the past studies, organizational trust is an emphasized factor influencing the employee's productivity. This controller of productivity is being highlighted in the previous related studies models as positively influencing one, where increasing the organization's trust level would increase the employees' productivity. the relation between the organization's trust and employee productivity is shown in the figure below:



Figure 3. Organization Trust related to Employees Productivity (Source: Author)

Thorstensson (2020) figured out that there's a positive relationship between organizational trust and organizational performance. Companies that trust their employees and believe in senior leadership are more likely to outperform those that don't. Also, employees who feel confident in the actions of companies, and confidence in the managers, are more likely to be more productive than those who don't. midwifery et al. (2012) also concluded that the employee's productivity increases as the organization's trust increases. Measurement of the employee's productivity with respect to the organization's trust will be applied in both directions, the effects of employees trusting the employer, and also the effects of employers trusting the employees. According to the researcher's best knowledge, In the Palestinian high-tech market, the researcher believes this is a key factor for increasing productivity, as the high-tech market in Palestine is experiencing extreme aggressive competition, and the market now is exposed to the global tech market, and it's where future of the company matters and loyalty, opportunities also matters. For example, companies that have rigid core competencies are more attractive than those that don't have many competencies.

The organization trust will be considered as an independent controller of productivity and will be part of the adapted model in this study, as it's been highlighted in the previous studies' theories, and most of the results showed that it's a significant controller of productivity. The

relationship between the organization's trust and the employees' productivity will be tested, and close-ended questions about organizations' trust and its factors will be considered in the questionnaires, like loyalty, company competence, honesty, and stability of the organization.

Marital Status VS Employee Productivity:

Marital status of the employee; as highlighted in the previous studies, is another determinant of employee productivity. Marital status was part of some models in the previous studies, where some of them concluded that it has a direct effect on productivity, and some others concluded it's not mainly a significant controller of productivity. For instance, that some highlighted that married men are more productive than single men, for example, Mehay and Bowman (2005) figured out that married men will most likely be paid more and will be promoted, Korenman and Neumark (1991) also concluded the same, the married men are most likely to be more productive and their promotion is more probable than single men. It's expected that married men will be more productive than single men, and for women as well, telecommuting will save their time, and give them the time for taking care of the family at home, save the transportation cost, and get a more flexible schedule. The relationship between the employees' marital status and employees productivity is shown in the below figure, where married employees are expected to be more productive than single employees.

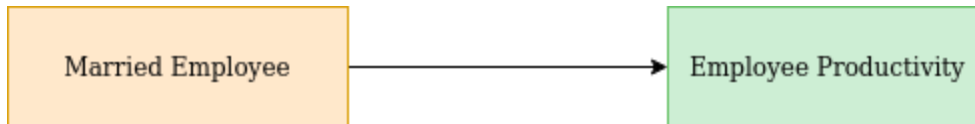


Figure 4. Married Employee related to Employees Productivity (Source: Author)

Many studies highlighted the marital status effect on productivity, where married men are expected to be more productive. However, limited to what the researcher observed in the industry, this is not expected to be a key factor, as in general, marriage implies more responsibility and thus, consumes more time on the working hours account, it may imply more emergencies, duties, and more family commitments. However, as many studies highlighted this factor, it is worth also experimenting with it in the Palestinian high-tech industry, the expectancy is that married employees are more productive than single employees when telecommuting. The marital status of the employees will be considered as part of the study model, and per the previous studies' expectancy, the assumption is to measure the positive effects of the marital status on the employee's productivity. The relationship will be measured using close-ended questions about the productivity of married and single employees, where married employees are expected to be more productive than non-married employees.

Other studies also discussed the marriage size effects on the employees' productivity, However, it was not highlighted as a key controller of the employee's productivity, where the results showed that regardless of the marriage size, employees' productivity remains robust. The

marriage size will be considered as part of the marital status using a standalone open-ended question.

Equipment Availability VS Employee Productivity:

Another variable derived from the related studies is the availability of equipment, Thorstensson (2020) figured out that a suitable workplace is affecting employee productivity, there is a positive relationship between employee productivity and a suitable telecommuting environment. Equipment availability has a significant effect on employee productivity, as Kurnia et al (2017) described, there is a positive relationship between equipment availability and employee productivity; the more available equipment at home, the more productive the employee will be. Equipment can be IT support like a fast machine and an internet connection, and also accessories like quality microphones and video conference stuff. The suitability of the workplace is also part of the equipment, like chairs, desks, additional monitors, and a quiet workplace. This controller is also subject to the industry of the firm, for instance, for high-tech related jobs, the speed of the internet is considered important for getting the job completed, as most of the work involves connecting to virtual networks on the employer side, and sometimes, connection to the networks at the contingent companies. Also, having a modern PC or laptop with good properties may affect the speed of the job execution, and in some cases, having old machines is a blocker for the telecommuter to complete the tasks. The relationship between the availability of the equipment and employee productivity is shown below, and the positive direction here represents the quality and the quantity of the equipment.

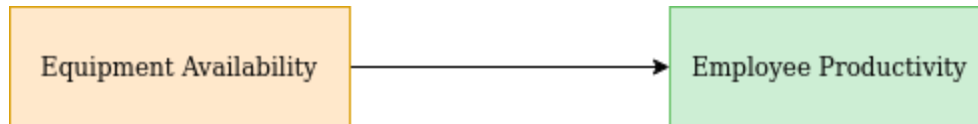


Figure 5. Equipment Availability related to Employees' Productivity (Source: Author)

Some of the studies also highlighted the availability of the equipment in the telecommuting environment as a key controller too, which also looks like a significant productivity factor, which, is also, in accord with the researcher's best knowledge in the industry, having quality equipment like PC, internet connection, and suitable accessories is very important, where most of the work was done through virtual private networks connected to the employer's side, and it's where for instance, having quality and a stable internet connection, quality telecommuting machines make a difference. Limited to the researcher's best knowledge, the offices where the high-tech engineers usually work include an additional monitor screen, which usually helps the engineers get more focus, especially when doing multi-tasks and when debugging software failures.

The equipment availability will be considered as part of the productivity model for the high-tech sector in Palestine, where the relationship will be measured using questions about the availability of the equipment, like the internet speed, IT support, chairs, monitors, accessories, and also about having the needed furniture like desks and chairs. The expectancy will be as derived as highlighted, the more available equipment in the telecommuter environment, the more productive they will be.

Employee Seniority VS Employee Productivity:

Theories in the former studies discussed the effect of employees' seniority on the employee's productivity, and it turns out that employee seniority is a key controller of the employee's productivity, for instance, der Rijst and Garg (2015) discussed how the seniority of the employees affected their productivity and how it affected other non-senior employees too. Likewise, Nakoi (2011) concluded that there is a positive relationship between the employee's seniority and productivity; where senior employees are expected to be more productive. The relationship will be measured using questions about the juniors, seniors, employees, and their productivity. For instance, junior employees are expected to be less productive, while seniors are expected to be more productive. The relationship between employee seniority and employee productivity is shown below:

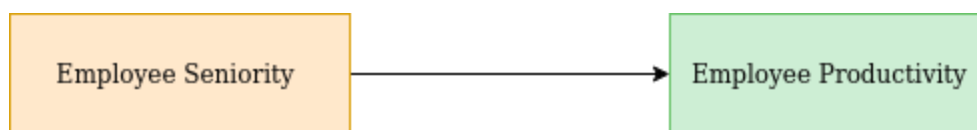


Figure 6. Employee Seniority related to Employees Productivity (Source: Author)

Some of the previous studies highlighted seniority as a major controller of the employee's productivity, where the retained employee with longer employment age is expected to be more productive. This is also in accord with the researcher's best knowledge of the Palestinian high-tech industry, is considered a major factor too, especially for the retained employees where whose responsibilities grow, and thus require higher productivity. Another spect where der Rijst and Garg (2015) discussed, is the effects of having senior employees working remotely and its effect on the other junior engineers, and as stated in the theory, this is expected to have some negative effects on junior employees, as part of the senior employee's tasks is to qualify and follow up with junior employees, and thus, to enhance their learning curves and become, more productive. The employee's seniority will be considered as part of the adapted model for high-tech employee productivity, in addition to the effects of the senior's absence.

Employee Gender VS Employee Productivity:

Limited to what is being reviewed in the past literature, many researchers discussed the effects of gender on employees' productivity, and most of the studies indicated that the effects of gender on productivity are being declined over the years, and there is **no significant indicator** about the effects of gender on employee productivity. For example, Xie and Shauman (1998) concluded that the differences between gender productivity declined, and mentioned that the differences between them are mainly due to interpersonal characteristics and marital status. Considering the industry of the high-tech and technology, the researcher moreover believes that the effect of gender is being declined more & more, as, for such a sector, the physical differences

between the two genders are mostly irrelevant to the type of tasks the high-tech engineers will be doing, as in general, high-tech tasks implies writing code and validation features, and where it's where for instance, the physical strength is irrelevant and does not contribute to it, probably, productivities in industries like the construction and fabrication will be affected by the gender, as it's where the physical strength plays a core role. As a result, this gender will not be considered in the adapted model for checking Palestinian high-tech productivity.

In conclusion, the 6 independent variables (Organization Trust, Social Activity, Equipment Availability, Employee Seniority, Employee Age, and Marital Status), and their relation to the main dependent variable (employee productivity). The model that represents those relationships is shown below:

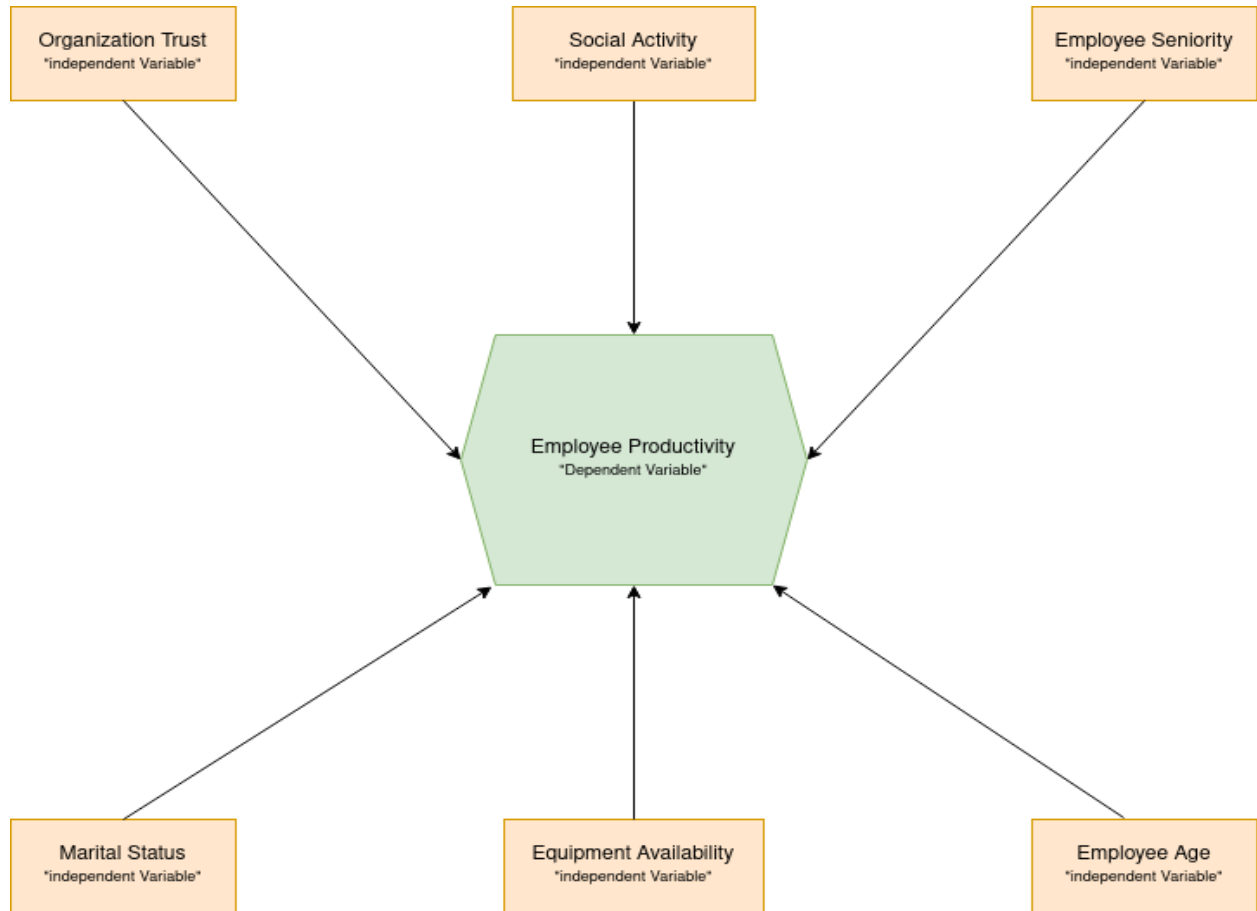


Figure 7. Independent and dependant variables (Source: Author)

The researcher believes that equipment availability, organization trust, Social activity, and employee seniority are the key independent variables that control the employees' productivity. Marital status and age are also important, but not as important as the other variables.

2.3 Research Hypotheses

1. Organization's Trust:

- a. **H₀**: There is no relationship between the organization's trust and the Palestinian high-tech employee's productivity.
- b. **H_a**: There is a positive relationship between the organization's trust and the Palestinian high-tech employee's productivity

2. Social Activities:

- a. **H₀**: There is no relationship between Social Activity and the Palestinian high-tech employees' productivity.
- b. **H_a**: There is a positive relationship between the Social Activity and the Palestinian high-tech employee's productivity: *Social activities the Palestinian high tech companies do, make their telecommuters more productive*

3. Equipment Availability:

- a. **H₀**: There is no relationship between equipment availability and the Palestinian high-tech employees' productivity.
- b. **H_a**: There is a positive relationship between equipment availability and the Palestinian high-tech employee's productivity.

4. Employee Age:
 - a. **H0:** There is no relationship between employee age and Palestinian high-tech employees' productivity.
5. Marital Status:
 - a. **H0:** There is no relationship between employee marital status and the Palestinian.
6. Employee Seniority:
 - a. **H0:** There is no relationship between employee marital status and Palestinian high-tech employees' productivity.
 - b. **Ha:** There is a positive relationship between employee seniority and the Palestinian high-tech employee's productivity

2.4 Research Methodology

This chapter is addressing the methodology adapted for analyzing the effects of telecommuting on the Palestinian high-tech employee's productivity.

2.4.1 Research Method

This research is based on analyzing quantitative data (quantitative research). Data is collected via a structured data collection process and then quantified. As the basic motivation behind this research is to examine the relationship between the identified variable independent variables and the employees' productivity, quantitative analysis was adapted, as Bodnar(2015),

stated; quantitative research fits to describe variables and to examine relationships among variables.

2.4.2 Data Source

This research is mainly conducted based on a primary source of data, data that is collected from the applicant's responses to a questionnaire. The reason why this research relied on a primary source of data is that the data needed in this research are very specific for the study, where it measures the relation between specific independent variables and the dependent variable, and each record of the data represents a response for a question (or set of the question) that derives the employee's productivity. The research also relied on a secondary data source for building up the model from the previous research and papers.

2.4.3 Population

The target population for this research is the Palestinian companies whose business implies working in the high-tech field, and those companies that are working in the software development and/or validation fields, such as ASAL Tech, Exalt Tech, Projineer, Souqtel, Martps, Blue Ltd, and PITA group, and also the global high-tech companies that have branches in Palestine, such as NVIDIA Corporation. The total number of information and communication companies (ICT) is 250 companies, with approximately 9200 employees (Palestinian Information Technology Association of Companies, 2018)

2.4.4 Research Tool

The tool that is used for conducting the research is a questionnaire, where the questionnaire mainly includes close-ended questions. Each close-ended set of questions

represents the effects of one independent variable on employee productivity, and it follows the 5 points Likert scale. Besides the close-ended questions, the questionnaire includes 4 open-ended questions, and it's used mainly for further analysis of the responses, and also to explore further areas and topics as a recommendation for future work of this study.

The reason why the questionnaire tool was used is that it offers a fast, efficient, and inexpensive means of gathering information from sample volumes, and the use of open and closed research questions enabled us to obtain quantitative data, resulting in more comprehensive results.

2.4.4 Questionnaire Arbitration\Mediation

To increase the confidence in the questionnaire and its content, it was held for arbitration by two arbitrators:

1. Dr. Khader Awwad; assistant professor at Faculty of Engineering and Technology, Birzeit University.
2. Dr. Nadeem Harbawi, Senior Software Engineer.

2.4.5 Data Collection

This chapter describes the method design for data collection. The method design for data collection is a questionnaire of both open and close-ended questions, The research is primarily based on a primary source of data, which is collected from the applicant's response to the questionnaire.

The type of questionnaire is an online google form-based questionnaire. a google form-based questionnaire was selected for many reasons, first of all, google form serves as a virtual environment for filling out the questionnaire, and it doesn't limit us to any physical environment for filling out the questionnaire. Second, google forms can be filled anywhere and anytime, and from multiple platforms, like PCs, Laptop, smartphones, and especially as the target population is high-tech employees, who mostly have access to the internet (as their work usually requires internet access), this will give them the choice to fill the questionnaire with no physical limits. Moreover, It's also saving the cost of maintaining a printed version of the questionnaire, and of course, saves the applicant's time. Furthermore, using google form-based questionnaires helped us to overcome the issue of the geographic location of the applicants, as the companies are geographically apart from each other. Furthermore, using a google form-based questionnaire will help us make sure that the applicant had filled all the needed sections of the questionnaire, the required/needed questions were annotated with the required mark, and thus, the response can't be submitted unless the applicant answered all the needed questions, such a limitation is hard to enforce and validate in a printed questionnaire. Finally, using a google form-based questionnaire saved our analysis and data maintenance time.

The participants were asked to answer the survey questionnaires using a distributed google form; where each applicant was allowed to submit it one time only. The researcher coordinated with the company's management and personal connections in the companies to share the questionnaire with their employees. For those who didn't fill out the questionnaire, a continuous reminder was sent to them through their companies to fill out the application.

Socio-demographic information was also collected as part of the questionnaire, sex, marital status, education, and city. Socio-demographic information was used for further analysis of the applicant's responses

2.4.6 Data Analysis

The design method for data analysis is linear regression analysis, and as its business research, a significance level (α) with a value of 5% was considered. 5 points leaker scale responses were quantified from 1- 5; where 1 represents strongly disagree, and 5 represents strongly agree.

For each independent variable, the set of similarly weighted question values was summed up and then averaged (Mean), and the final average number represents the coefficient value for a single participant of this independent variable's effects on productivity. and the same was considered for all applicant's responses for all the independent variables. The reason why the average technique was adopted is that all sets of questions that determine the effects of one variable on productivity are mandatory, where the applicant is not allowed to leave any mandatory question empty. Responses were analyzed using the SPSS software, and linear regression was formulated.

To ensure the data reliability, and to guarantee the data response are reliable, some independent variable contains a duplicate question, which is being asked twice but in two different strings forms, and any response that contains duplicate contradictions on the answers was dropped, and this is to make sure the applicants didn't fill up the questionnaire randomly or with less focus.

The significance of each variable is calculated, and its overall contribution to employee productivity was highlighted and discussed. After determining the effect of each independent variable on employee productivity, the result was discussed and analyzed, and the importance of each variable is highlighted.

2.4.7 Sample Selection

The sample was selected randomly using the simple random (Google form were sent to the population), this will grant us the ability to have statistical inferences about the whole population, where each member of the population had the same chance to be to fill the questionnaire, below are the details about the target population:

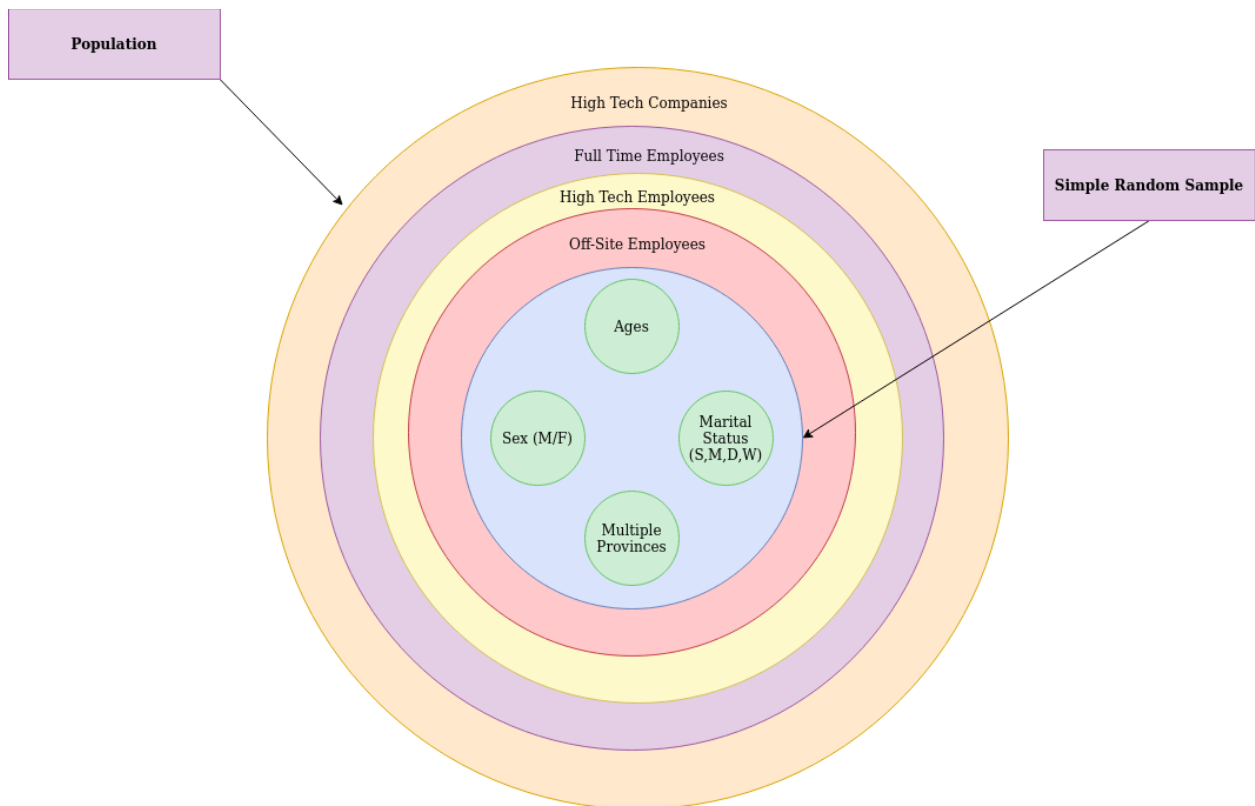


Figure 8. Sample Selection (Source: Author)

Only full-time employees who were working or used to working from home for at least one day a week; this is to make sure the applicants were already familiar with telecommuting. For each company, all their branches were considered, so the sample encompassed employees from different provinces (Jerusalem, Ramallah, Nablus, Jenin, Tubas, Tulkarem, Jericho, and the other Palestinian cities).

The population encompasses employees of different ages, and also different marital statuses single, married, and divorced, the sample also encompasses applicants of male and female sexes, so the selected sample will be representative of the socio-demographic factors.

All the above-considered points resulted in having a representative sample and were considered to minimize the sampling error.

The sample size for a 9200 population, considering a confidence level of 95% and margin error of 5%, is **369**

Chapter Three

This section is describing the study results, which are the effect of telecommuting on the Palestinian high-tech employee's productivity, and the factors that control the productivity of Palestinian high-tech employees while telecommuting.

3.1 Sample Distribution

The results of this research were built on top of 125 responses to the research questionnaire, where 124 respondents responded to the gender socio-demographic question. Out of the 124 responses, 65 were males (52.4%), and 59 were females (47.6%), the figure below shows the gender distribution of the sample.

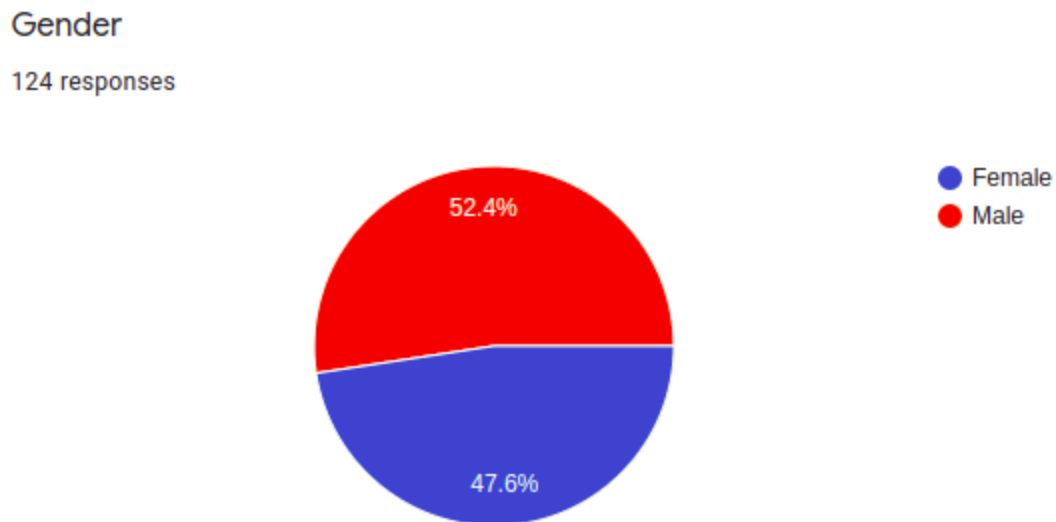


Figure 9. Sample's gender distribution (Source: Author)

Regarding the age distribution of the sample, 124 respondents responded to the age socio-demographic question, where most of the respondents with a share of 67.7% are between 20-30 years old, whereby 28.2% of the respondents are between 30-40 years old, and 3.2% of the respondents are above than 40 years old. Only one respondent is below 20 years old, the below figure shows the age distribution of the sample:

Age

124 responses

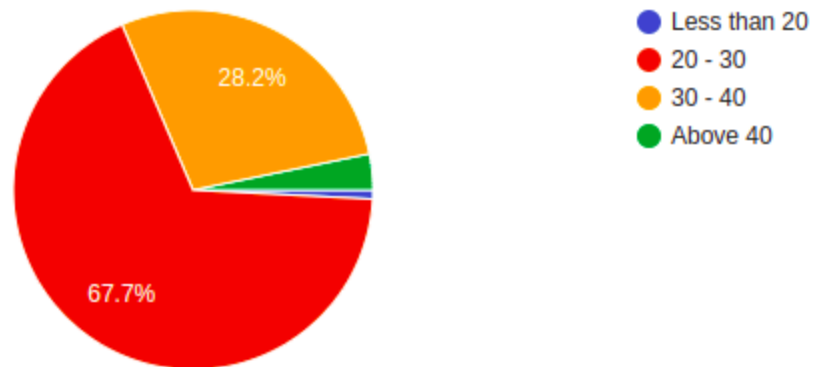


Figure 10. Sample's age distribution (Source: Author)

121 respondents responded to the marital status socio-demographic question, where 52.9% with a count of 64 are single, 47.1% with a count of 57 are married, and 0 for the other marital status. The figure below shows the marital status distribution of the sample:

Marital Status

121 responses

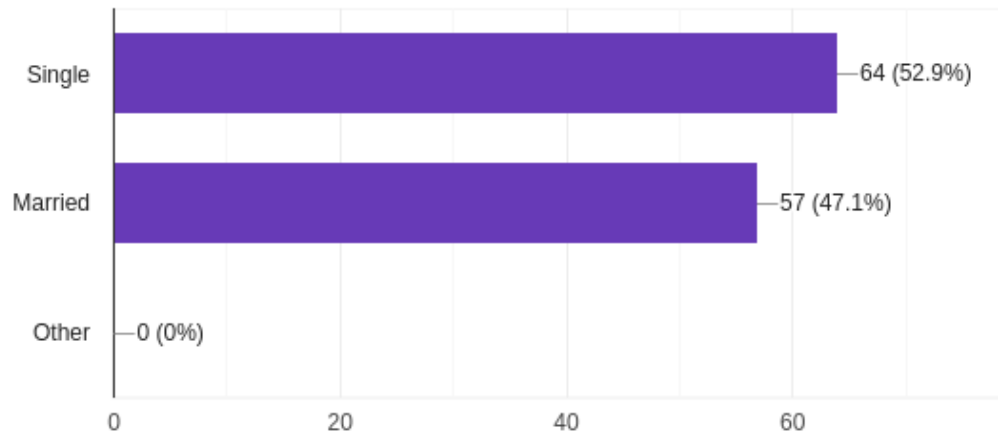


Figure 11. Sample's Marital Status distribution (Source: Author)

Governance-wise, 124 respondents responded to the governance socio-demographic question, and the sample encompasses responses from the whole governances.

Most of the respondents are from Ramallah & Al-Bireh, with a share of 40.3% and a count of 50, followed by 25 respondents from Nablus with a share of 20.2%. Respondents from Juraslaem are 13 with a sample share of 10.5%, and 12 from Jenin with a sample share of 9.7%. respondents from Bethlehem, Salfit, and Jericho share the same count of 4 with a sample share of 3.2%, 6 respondents were from Tulkarem, 3 from Hebron, 2 from Tubas, and 1 one from Qalqila,

with a sample share of 4.8%, 2.4%, 1.6%, and 0.8% respectively. The below figure shows the sample distribution of the governance:

Governance

124 responses

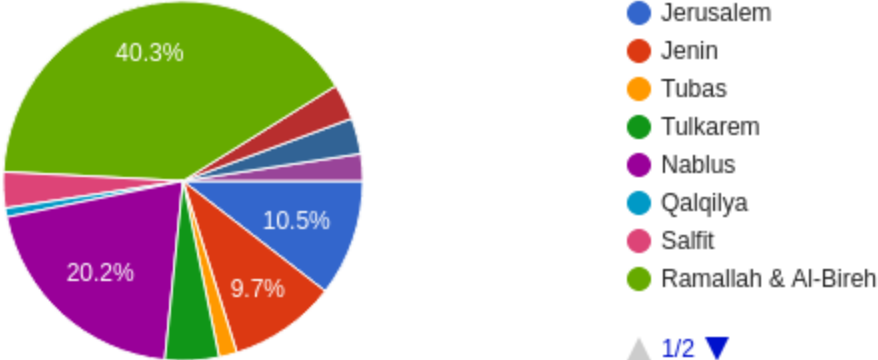


Figure 12. sample’s governance distribution (Source: Author)

122 responses for the job title were received, 53 of them are software\validation engineers with a sample share of 43.4%, and 25 respondents are senior software\validation engineers with a sample share of 20.5%. 9.8% of the respondents are automation engineers and 6.6% are electrical engineers. 16 respondents are team software engineers team leaders, and 8 are project managers. The figure below shows the sample distribution of the job title:

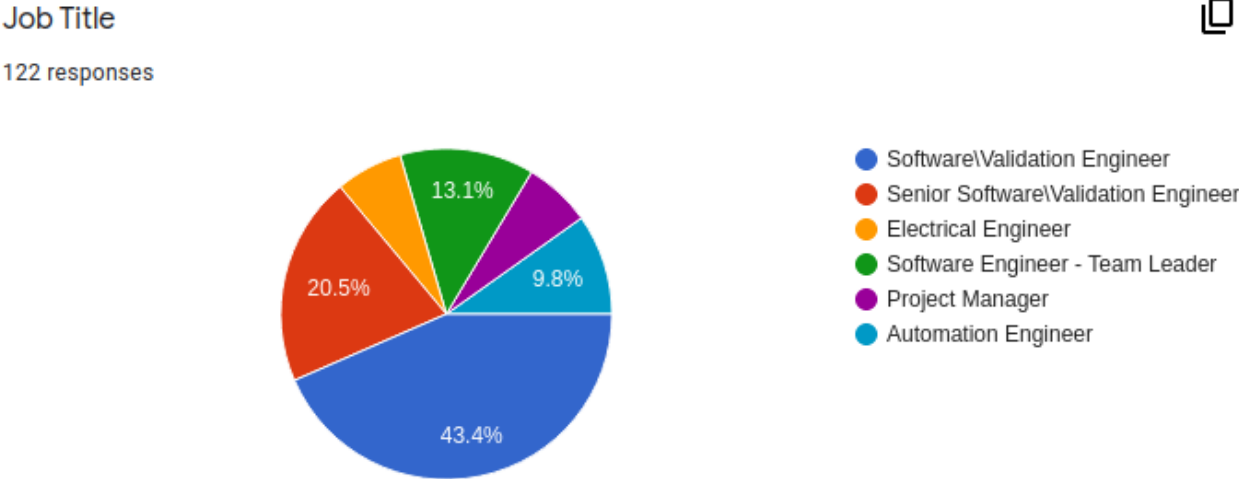


Figure 13. sample’s job title distribution (Source: Author)

The table below summarizes the sample distribution:

Socio-Demographic	Division	Count	Total Count	Percentage 100%
Gender	Female	65	124	52.4%
	male	59		47.6%
Age	Less than 20	1	124	0.8%
	20 - 30	84		67.7%
	30 - 40	35		28.2%
	Above than 40	4		3.2%
Marital Status	Single	64	121	52.9%
	Married	57		47.1%
	Other	0		0.0%
Governance	Ramallah & Al-Bireh	50	124	40.3%
	Nablus	25		20.2%
	Jenin	12		9.7%
	Jerusalem	13		10.5%

		Tulkarem	6		4.8%
		Salfit	4		3.2%
		Jericho	4		3.2%
		Bethlehem	4		3.2%
		Hebron	3		2.4%
		Tubas	2		1.6%
		Qalqilya	1		0.8%
	Job Title	Software\Validation Engineer	53	122	43.4%
		Senior Software\Validation Engineer	25		20.5%
		Software Engineer - Team Leader	16		13.1%
		Automation Engineer	12		9.8%
		Project Manager	8		6.6%
		Electrical Engineer	8		6.6%

Table 2. Sample Distribution Summary (Source: Author)

3.2 Model

This section will mainly describe the employee productivity regression model, and the regression statistics

3.2.1. Regression

linear regression was applied to test the research hypothesis, with the below details about the output/input variables:

Output (Dependent Variable):

- High-Tech Employees Productivity

Input (Independent Variables):

- Organization Trust.
- Social Activity.
- Equipment Availability.
- Employee Seniority.
- Employee Age
- Employee Marital Status.

The model parameter can be is summarized in the below figure:

→ Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment ^b	.	Enter

a. Dependent Variable: Productivity
 b. All requested variables entered.

Figure 14. Regression model parameters (Source: Author)

Each independent variable was measured using a set of subquestions, where each subquestion was measured using a 5 points Likert scale (1 represents Strongly Disagree, 2 represents Disagree, 3 represents Neutral, 4 represents Agree, and 5 represents Strongly). Then the averages of all variables’ sub-questions were measured. The average was selected because all variable sub-questions were marked as needed, so no empty responses to the variable's subquestion were obtained.

3.2.2 Anova Test

To assert the variation between the sample means and each group variation, and to make sure the collected data is statistically significant, the Anova test was applied. The below figure is a summary of it.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.228	6	4.205	36.556	<.001 ^b
	Residual	13.572	118	.115		
	Total	38.800	124			

a. Dependent Variable: Productivity

b. Predictors: (Constant), social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment

Figure 15. ANOVA Test (Source: Author)

F-value = variation between sample means/variation within the samples = $4.205/0.115 = 36.6$

And that means variation between the sample means is high relative to the variation within each of the samples, so the data is statistically significant.

3.2.3 Model summary

The model-independent variables explained **63.2%** of the high-tech employee's productivity, as it recorded 63.2% for the adjusted r2 test, the below figure represents the model summary:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 ^a	.650	.632	.339

a. Predictors: (Constant), social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment

Figure 16. Model Summary (Source: Author)

3.2.4 Model Coefficients summary

It's clear that organization trust, employees' seniority, social activity, and equipment are the main significant variable, whereas employee age and marital status are not significant. Each independent variable significance and contribution to high-tech productivity is described in the figure below:

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.146	.318		-.459	.647
	seniority	.097	.041	.137	2.366	.020
	Marital_Status	.009	.038	.014	.239	.811
	Organization_Trust	.549	.080	.479	6.835	<.001
	Equipment	.275	.069	.287	3.988	<.001
	Age	.035	.044	.044	.800	.426
	social_activity	.091	.040	.138	2.293	.024

a. Dependent Variable: Productivity

Figure 17. Model Coefficients (Source: Author)

3.2.5 Data Reliability - Cronbach's Alpha

To measure the data internal consistency, which is how closely related a set of items is as a group, Cronbach's Alpha test was applied. All same direction questions were considered as input to the test. below is the calculation of Cronbach's Alpha formula:

$$\alpha = \frac{N\bar{c}}{\bar{v} + (N - 1)\bar{c}}$$

Where:

N: Number of items,

\bar{c} : The average inter-item covariance among the items, and

\bar{v} : The average variance.

Alpha value was 79.6%, which is higher than 70%, which means the model data is consistent, below figures show the detailed results from the SPSS, more details are attached to the appendix.

→ Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	125	100.0
	Excluded ^a	0	.0
	Total	125	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.796	26

Figure 18. Cronbach's Alpha (Source: Author)

3.3 Variables Significance

This section is describing the significance of each factor of the Palestinian high-tech employees' productivity.

3.3.1 Organization Trust:

Organization trust variable was included in the model as an independent variable of productivity and was measured using 6 closed-ended sub-questions, quantized from 1 to 5, and then the overall contribution of the organization trust was averaged up, and evaluated in the regression model.

As stated in the theory, it's expected to see an effect on the Palestinian high-tech engineer's productivity because of the organization's trust, and it's expected also to be a positive relationship (an increase in the organization's trust will advance the Palestinian high-tech engineer's productivity). The below table shows the coefficient and significance of the organization trust variable, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	T-value	Significance
Organization's Trust	0.479	6.835	<0.001

Table 3. Organization's Trust Significance (Source: Author)

From the standard coefficient beta, its magnitude is **0.479**, which is indeed a significant effect, as it means an increase in the organization's trust by 1 unit, would increase productivity by almost 0.5 units.

Looking at the significance of the organization's trust, the P level is **less than 0.1%**, which means the organization's trust is a significant controller of productivity. Below are details on testing the organization trust hypothesis

Organization Trust Null Hypothesis:

H₀: There is no relationship between the organization's trust and the Palestinian high-tech employee's productivity.

The significance level of the organization trust variable is less than 0.1%, which is << 5%, which indicates strong evidence against the null hypothesis, so the null hypothesis is rejected, and the organization's trust and productivity are statistically correlated, and so there is a relationship between the organization's trust and the high tech employees' productivity.

Organization Trust Alternative Hypothesis:

H_a: There is a positive relationship between the organization's trust and the Palestinian high-tech employee's productivity

The alternative hypothesis direction is positive, where an increase in the organization

trust variable increased the Palestinian high-tech employee's productivity, the below figure represents the Palestinian organization's trust VS their productivity

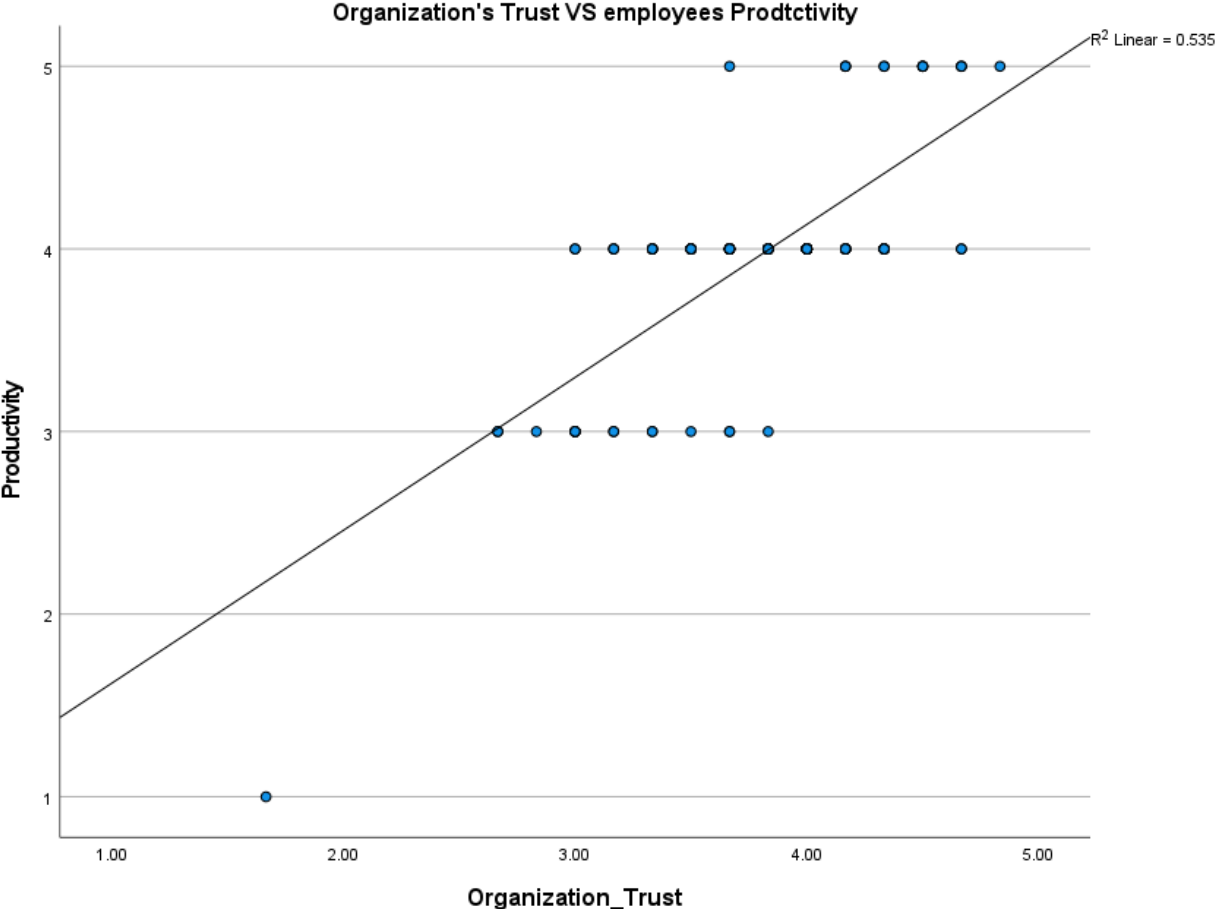


Figure 19. Organization Trust VS Employees Productivity (Source: Author)

Looking at the coefficient value of the organization trust variable, it has a positive sign, so the alternative hypothesis is accepted.

The coefficient Beta of organization trust in the equation is 0.479, which means that an increase of **2 units** of organization trust, resulted in an increase in the productivity of the Palestinian high-tech engineers by **1 unit**, so, the organization's trust and the employee's productivity are highly coupled.

In summary, the organization's trust is a significant controller of the Palestinian high-tech employees' productivity, and it's highly affecting the high-tech employee's productivity. So a simple answer to the first research question of the relationship between the organization's trust and the employee's productivity, is that the organization's trust indeed affects the high-tech employee's productivity when telecommuting. For example, more than 80% of the respondents either agree or strongly agree that a high-tech organization's trust affects the high-tech and only a few responses disagree that the organization's trust is a key controller of productivity when working from home; the below figure summarizes the statistics of the response.

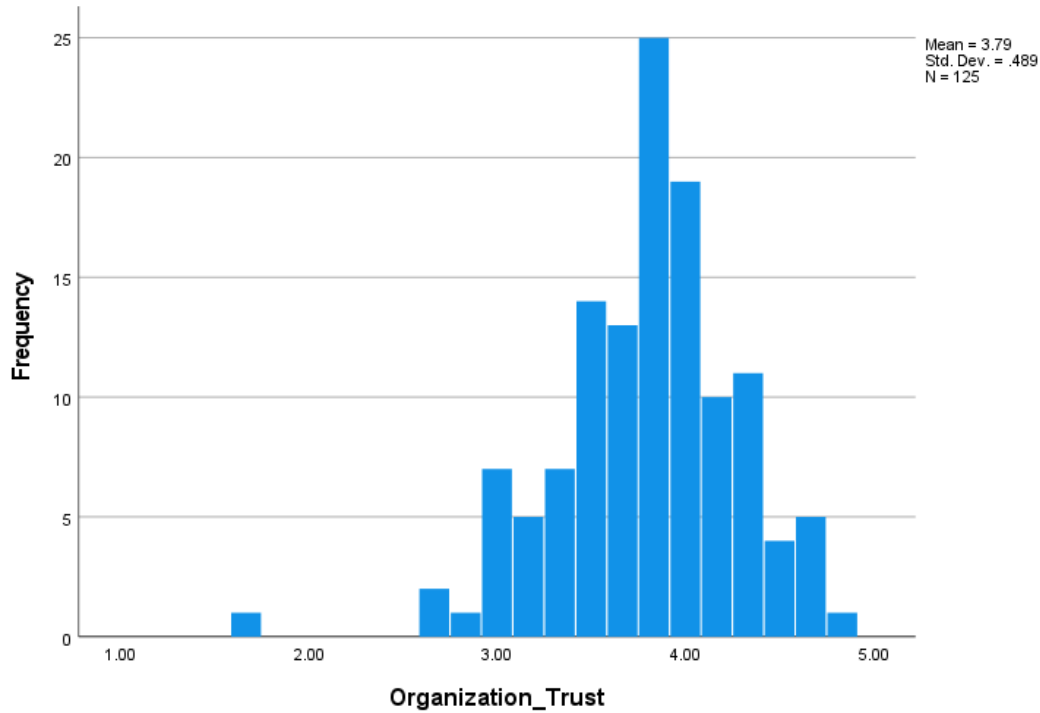


Figure 20. Organization Trust VS Employees Productivity Responses (Source: Author)

Likewise, high-tech employees who are loyal to their company are more productive than those who are not loyal to their employer company. It's the same also for stable and diverse core-competencies companies (Financial Power, Organizational Agility, Continuous Learning Culture, Leadership), where employees working with stable companies and companies that have many core competencies are more productive than those who are working with less stable companies.

The results also showed that high-tech employees who trust their company decisions and decision-makers are more productive than those high-tech engineers who don't trust the company decision. Moreover, the results also showed that managers and leaders who build trust

with their team members make them more productive when telecommuting.

Similarly, the company size (number of employees), where the high-tech engineers working with companies that hire a large number of employees are more productive than those who are working with companies that hire a smaller number of employees

it's also clear from the open-ended question response, which is asking about the main challenges that should be addressed to make the Palestinian high-tech engineers more productive, that trust was one of the main challenges listed by many of the respondents, and it included trust from managers and leaders.

3.3.2 High-tech Employees Seniority

Employee seniority variable was included in the model as an independent controller of the productivity, and was measured using 3 closed-ended sub-questions, quantized from 1-5, and then the overall contribution of the employee seniority was averaged up, and considered in the regression model. As described in the theory, it's expected to see an effect on the Palestinian high-tech employee's productivity as the seniority varies, and it's expected also to be a positive relationship. The below table shows the coefficient and significance of the employee seniority variable, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	t-Value	Significance
Employee Seniority	0.137	2.366	0.020

Table 4. Employee Seniority Significance (Source: Author)

Looking at the standard coefficient beta, it's with a magnitude of 0.137, which is a significant effect, as it means an increase in employee seniority by 1 unit, would increase productivity by almost 0.14 units.

Looking at the significance of employee seniority, the Probability level is less than 5%, which means that employees' seniority is a significant controller of productivity. Below are details on testing the employee seniority hypothesis

Employee Seniority Null Hypothesis

H0: There is no relationship between employee seniority and the Palestinian high-tech employees' productivity.

The significance level of the employee seniority variable is 0.02%, which is less than the

probability level limit, and so it indicates strong evidence against the null hypothesis, so the null hypothesis is rejected, and so there is a relationship between employee seniority and productivity.

Employee Seniority Alternative Hypothesis

Ha: There is a positive relationship between employee seniority and the Palestinian high-tech employee's productivity.

The alternative hypothesis direction is positive, where an increase in the employee seniority variable increased the Palestinian high-tech employee's productivity, the below figure represents the Palestinian high-tech employee seniority VS their productivity:

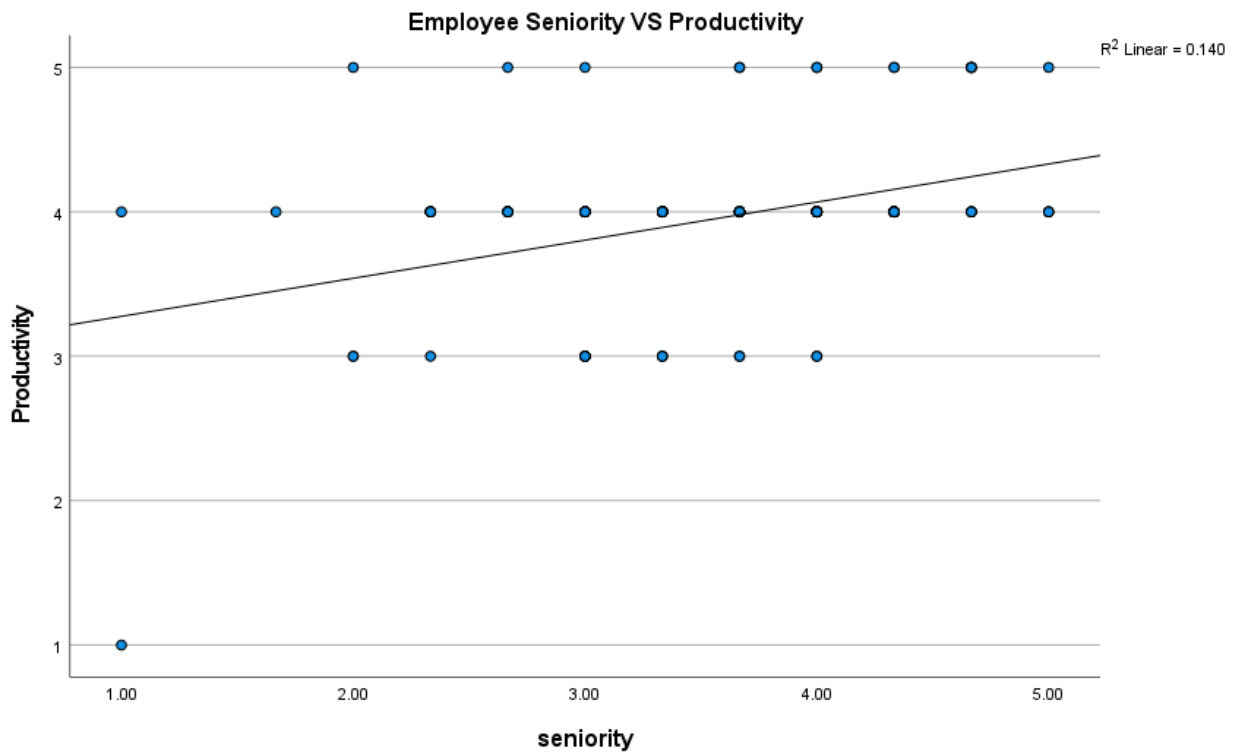


Figure 21. Employee Seniority VS Employees Productivity (Source: Author)

Looking at the coefficient value of the employee seniority variable, it's a positive sign, so the alternative hypothesis is accepted.

The coefficient Beta of employee seniority in the equation is 0.137, which means that an increase of **5 units** of employee seniority resulted in an increase in the productivity of the Palestinian high-tech engineers by **around 1 unit**, and so, employee seniority and productivity are statistically significant.

In summary, the results showed that employee seniority is a significant controller of high-tech employees' productivity, and it's highly affecting high-tech employees' productivity.

Regarding the first research question (To what extent does the seniority of the Palestinian high-tech employees affects their productivity when telecommuting?), the results showed that there is a direct effect of the employee's seniority on the productivity, for instance, more than 50% of the respondents believe that senior high-tech employees are more productive than junior ones when telecommuting; the figure below shows more details about that:

Senior high-tech employees are more productive than Junior high-tech employees when working from home

125 responses

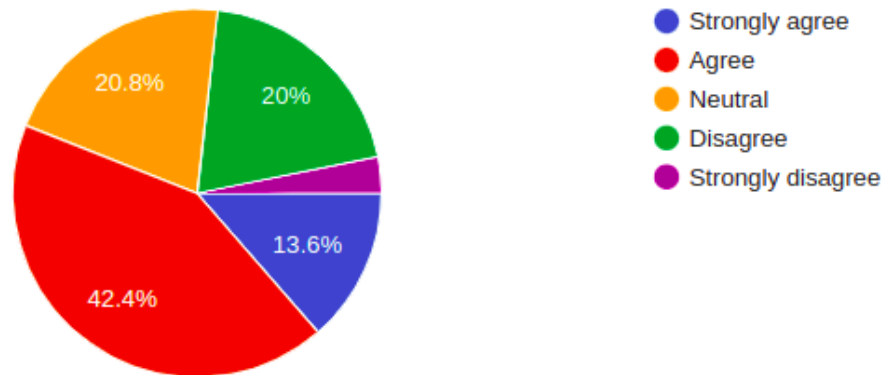


Figure 22. Seniors VS Juniors Productivity (Source: Author)

The response to the open-ended questions also showed that there is a challenge with the senior's productivity when telecommuting, which is having them isolated away from the juniors, and thus, juniors become less productive compared to working from office closed to the seniors in the team.

As employee seniority is a key controller of the employee's productivity, high-tech companies should consider this variable while creating their OSW policy and should balance seniors working from home in a way juniors are not left alone.

3.3.3 Equipment Availability

was included in the model as an independent variable of productivity, and was measured using 6 closed-ended sub-questions, quantized from 1 to 5, and then the overall contribution of the equipment availability was averaged up, and considered in the regression model. As stated in the theory, it's expected to see an effect on the Palestinian high-tech employee's productivity as the equipment availability varies, and it's expected also to be a positive relationship. The below table shows the coefficient and significance of the equipment availability variable, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	T-value	Significance
Equipment Availability	0.287	3.988	<0.001

Table 5. Equipment Availability Significance (Source: Author)

Looking at the standard coefficient beta, it's with a magnitude of 0.287, which is a significant effect, as it means an increase in the equipment availability by 1 unit, would increase productivity by almost 0.30 units.

Looking at the significance of the equipment availability, the Probability level (less than 0.001) is much less than 5%, which means the equipment availability is a significant controller of productivity. Below are details on testing the employee seniority hypothesis

Equipment Availability Null Hypothesis:

H0: There is no relationship between equipment availability and the Palestinian high-tech employees' productivity.

The null hypothesis is rejected, as there is a clear relationship between the employee's productivity and the equipment needed for getting their job done, as the significance level of the equipment availability variable is less than 0.001%, which is much less than 5%, which indicates strong evidence against the null hypothesis, so the null hypothesis is rejected, and equipment availability and productivity are statistically related to each other. So, mathematics-wise, there is a relationship between Palestinian high-tech equipment availability and Palestinian high-tech employees' productivity.

Equipment Availability Alternative Hypothesis:

Ha: There is a positive relationship between equipment availability and the Palestinian high-tech employee's productivity:

The alternative hypothesis direction is positive, where an increase in the equipment availability variable increased the Palestinian high-tech employee's productivity, the below figure represents the equipment availability VS their productivity:

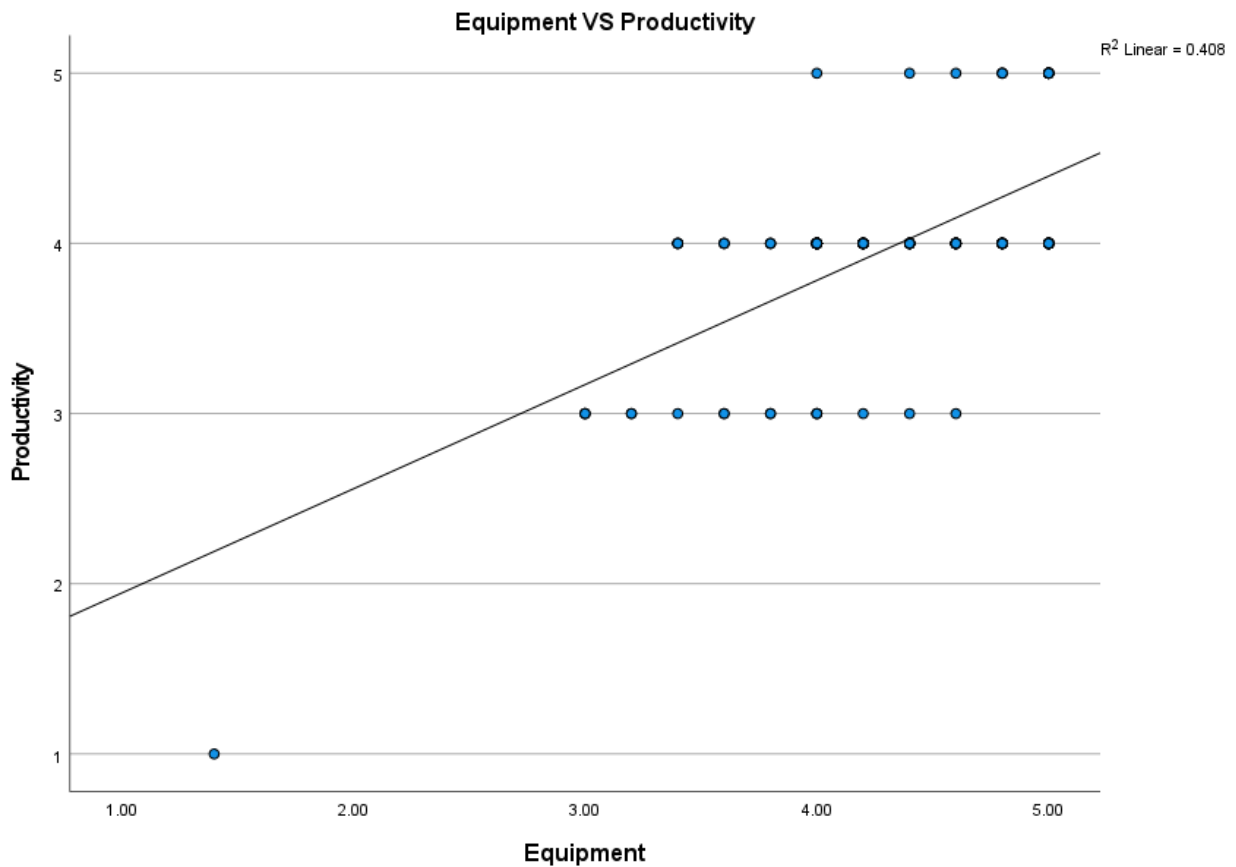


Figure 23. Equipment Availability VS Employees Productivity (Source: Author)

Looking at the coefficient value of the equipment availability variable, it's a positive sign, so the alternative hypothesis is accepted.

The coefficient Beta of the equipment availability factor in the equation is 0.287, which means that an increase of **around 3 units** of equipment availability resulted in an increase in the productivity of the Palestinian high-tech engineers by **1 unit**.

In summary, the results showed that the equipment availability is a significant controller of the Palestinian high-tech employees' productivity, and it's **highly** affecting the high-tech

employees, productivity. Below are more details answering the research question about how the equipment affects the Palestinian high-tech employee's productivity when telecommuting:

The results showed that Equipment indeed affects high-tech employees' productivity when telecommuting. For instance, 90% of the respondents agree that Equipment like (Internet speed, Pcs or Laptops ...etc) and accessories like (headsets and additional monitors ...etc) affect the high-tech employee's productivity when working from home; the below figure represents more details:

The faster the internet speed at home, the more productive the high-tech employees will be when working from home

125 responses

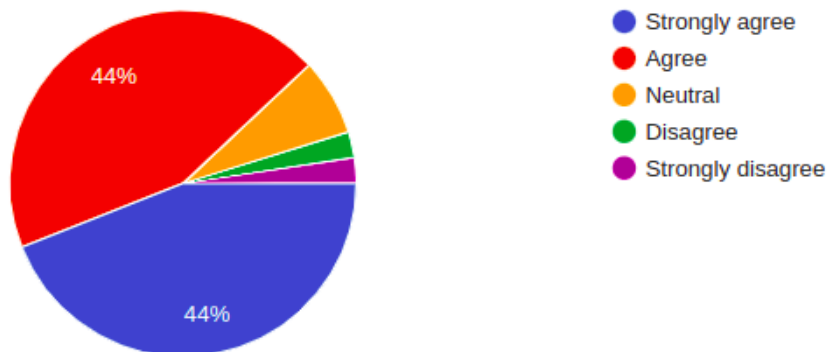


Figure 24. Internet Speed VS Productivity (Source: Author)

Furthermore, many respondents highlighted in the open-ended questions that internet speed is the key equipment challenge that companies should handle for making the employees more productive when telecommuting.

The results indicate that having the accessories equipment also plays a core role in advancing the employee's productivity, where more than 90% of the respondents agree that companies offering accessories like headsets and additional monitors would make the employees more productive, the below figure shows more details:

Company offering accessories like headset, additional monitor makes the high tech employees more productive when working from home

125 responses

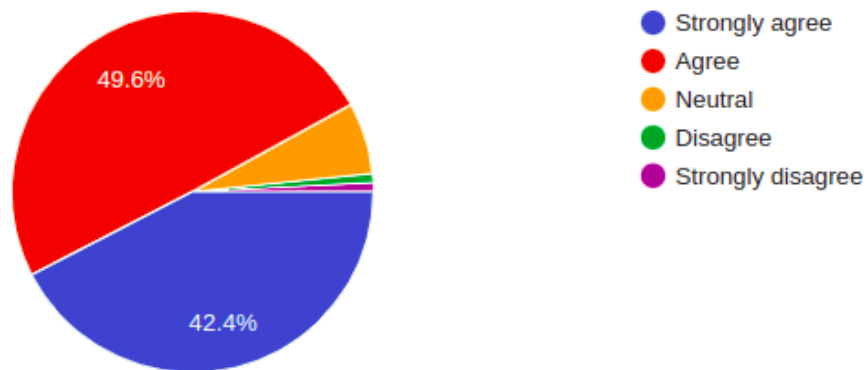


Figure 25. Accessories Equipment VS productivity(Source: Author)

Moreover, the results showed that the high-tech employees believe that having tools\ and equipment for remote communication (e.g. zoom, skype ...etc) encourages the high-tech companies to adopt the telecommuting option.

The results also showed that the non-technical equipment is also making a difference, as the results showed that the suitability of the workplace also plays a core role in affecting the

employee's productivity, whereas the home-based environment should be also less noisy, and having an independent space allocated for telecommuting, the figure below shows more details:

High-tech employees working from home in a suitable environment (less noise, independent space) are more productive

125 responses

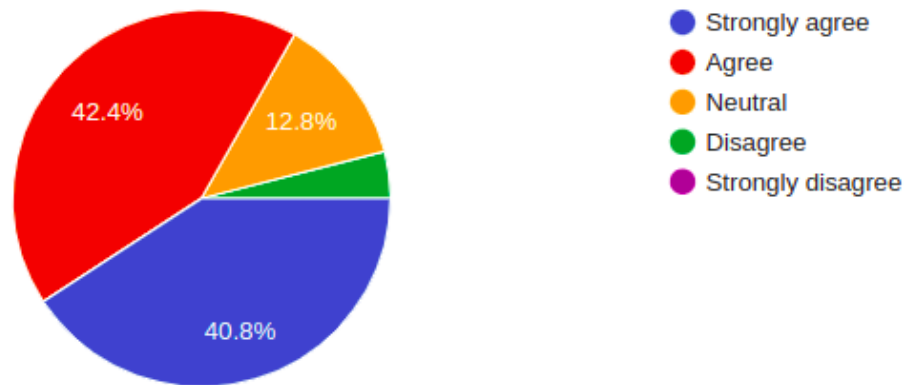


Figure 26. Workplace Suitability VS productivity (Source: Author)

3.3.4 Social Activities

variable was included in the model as an independent variable of productivity and was measured using 2 closed-ended sub-questions, quantized from 1 to 5, and then the overall contribution of the social activity was averaged up, and evaluated in the regression model. As the theory states, it's expected to see an effect on the Palestinian high-tech engineer's productivity as the social activities vary, and it's expected also to be a positive relationship. The below table shows the coefficient and significance of the social activity variable, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	T-value	Significance
Social Activities	0.138	2.293	0.024

Table 6. Social Activities Significance (Source: Author)

Looking at the standard coefficient beta, it's with a magnitude of 0.138, which is a significant effect, as it means an increase in social activities by 1 unit, would increase productivity by 0.14 units.

Looking at the significance of the social activities, the Probability level, it's much less than 5%, which means the social activities are a significant controller of productivity. Below are details on testing the social activities hypothesis:

Social Activities Null Hypothesis:

H0: There is no relationship between Social Activity and Palestinian high-tech employees' productivity.

The null hypothesis is rejected, as there is a clear relationship between the employee's productivity and the social activities the high-tech companies do, as the significance level of the social activities variable is 0.024% which is much less than 5%. So there is a relationship between the social activities the high-tech companies do and the Palestinian high-tech employee's productivity.

Social Activities Alternative Hypothesis:

Ha: There is a positive relationship between Social Activity and the Palestinian high-tech employee's productivity: Social activities the Palestinian high-tech companies do, make their telecommuters more productive

The alternative hypothesis direction is positive, where an increase in the social activities variable increased the Palestinian high-tech employee's productivity, the below figure represent the social activities VS their productivity:

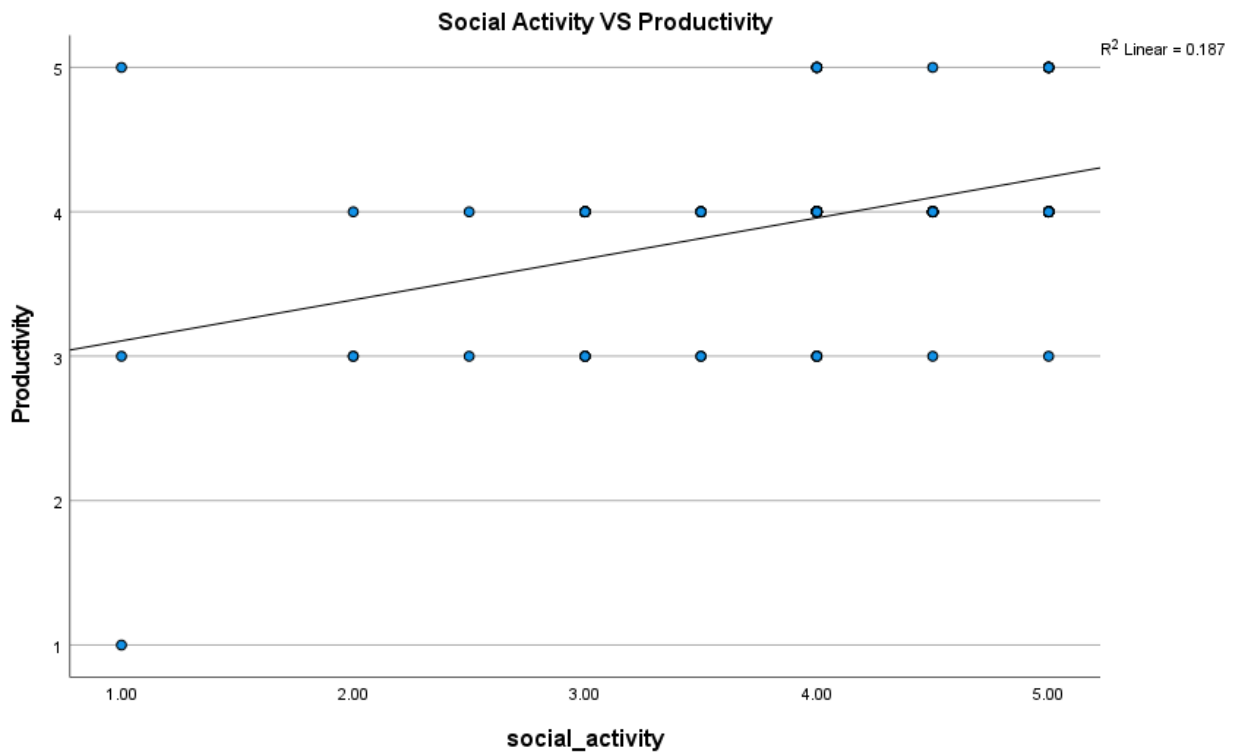


Figure 27. Social Activities VS Productivity (Source: Author)

Looking at the coefficient value of the social activities variable, it is a positive sign, so the alternative hypothesis is accepted.

The coefficient Beta of social activities in the equation is 0.138, which means that an increase of **around 6 units** of social activities results in an increase in the productivity of the Palestinian high-tech engineers by **1 unit**, which means that they are highly correlated.

So answering the research question of social activities can be summarized as follows:

Social activities are affecting the high-tech employees' productivity when telecommuting. For instance, 77 % of the respondents either agree or strongly agree that high-tech companies make social activities like gatherings, trips, gatherings, and fun days increase the productivity of their employees who are working from home, figure below represents that:

Teams making social activities like gatherings, trips, games, fun days, increases the productivity of the high-tech employees who are working from home.

125 responses

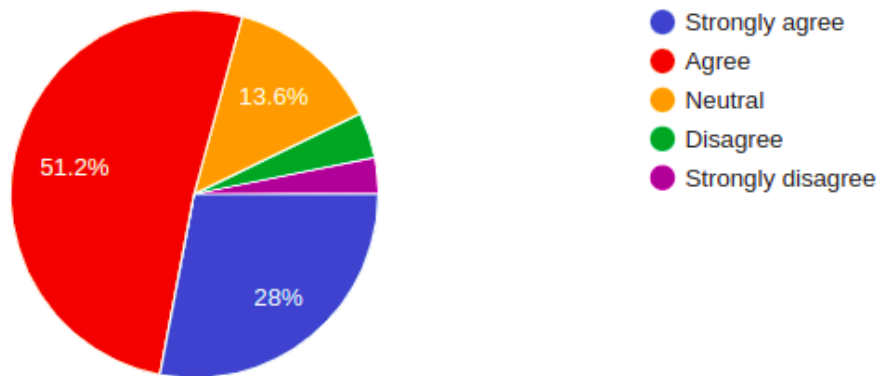


Figure 28. Social Activities VS Productivity Responses (Source: Author)

Also 80+% of the respondents either agree or strongly agree that having periodic social events (e.g. fun days, team lunch, go-kart), are important to increase the productivity of the high-tech employees who are working from home. The results are also signified by the fact that 80% of the respondents like to make friends and socialize and make friends in the workplace, the below figure shows more details:

Having periodic social events (e.g. fun days, team lunch, go-kart), are important to increase the productivity of the high-tech employees who are working from home

125 responses

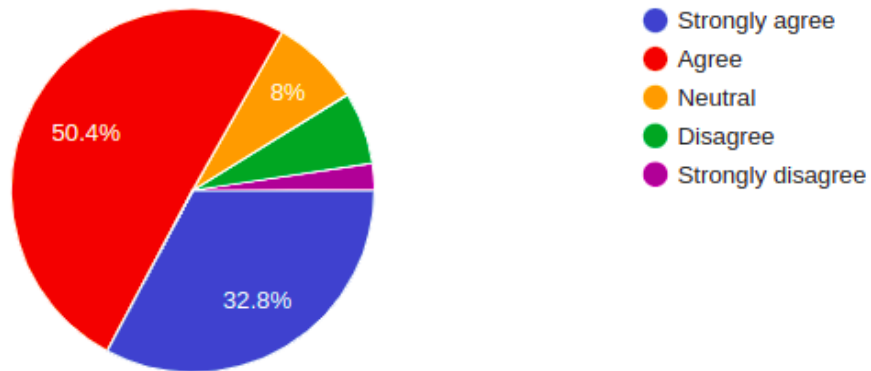


Figure 29. Periodic Social Activities VS Productivity Responses (Source: Author)

3.3.5 Employee Age

This variable was included in the model as an independent variable of productivity and was measured using 2 closed-ended sub-questions, quantized from 1 to 5, and then the overall contribution of the age was averaged up, and considered in the regression model. As stated in the theory, it's expected to see an effect on the Palestinian high-tech employee's productivity as their age varies. The significance of the employee age variable is shown in the table below, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	T-value	Significance
Employee Age	0.044	0.800	0.42

Table 7. Employee Age Significance (Source: Author)

Employee Age Null Hypothesis:

H0: There is no relationship between employee age and Palestinian high-tech employees' productivity.

Looking at the Probability level of the age, it's 0.42, which is larger than 5%, so the null hypothesis is accepted, and thus, there will be a relationship between the age of the Palestinian high-tech employees and their productivity.

Only 33% of the respondents agreed that age is affecting the employee's productivity, and also around 33% disagree that age is affecting the employee productivity, and the remaining responded with neutral. likewise, the results showed that working in a team of mixed ages (young, and old) has negligible effects on the employee's productivity, too.

High-tech employees age affects their productivity when working from home

125 responses

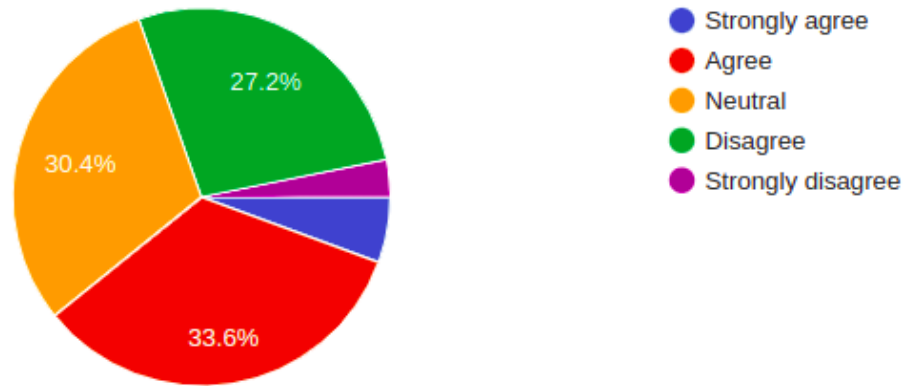


Figure 30. Employee Age effects on productivity (Source: Author)

3.3.6 Marital Status

This variable was included in the model as an independent variable of productivity and was measured using 2 closed-ended sub-questions, quantized from 1 to 5, and then the overall contribution of the age was averaged up, and considered in the regression model. As stated in the theory, married men are more productive than single ones. The significance of the employee age variable is shown in the table below, as logged by the linear regression output of SPSS:

Variable	Standard Coefficient Beta	T-value	Significance
Marital Status	0.014	0.239	0.811

Table 8. Employee Marital Status Significance (Source: Author)

Marital Status Null Hypothesis:

H0: There is no relationship between an employee’s marital status and Palestinian high-tech employees' productivity.

Looking at the Probability level of the marital status, it’s 0.81, which is much larger than 5%, so the null hypothesis is accepted, and thus, there will be a relationship between the marital status of the Palestinian high-tech employees and their productivity.

3.4 Results Summary

In summary, Organization Trust, Social Activities, Equipment, and seniority are the significant variables, as the significance Level (P-Value) for them is less than 5%. Age & Marital status turns out not significant, as their significance is larger than 5%.

These main independent variables can expect explained **63.2%** (Adjusted r2 value) of the Palestinian high-tech employee's productivity, and 63.2% of the productivity can be explained using the below liner formula:

$$\text{High-tech Engineer productivity} = 0.479 * \text{Organization_Trust} + 0.138 * \text{Social_Acitvities} + 0.287 * \text{Equipment} + 0.137 * \text{Seniority}.$$

The Palestinian high-tech employee's productivity regression is summarized in the below figure, where the X-axis is the average of all variable sub-questions, and the Y-axis represents the employee's productivity

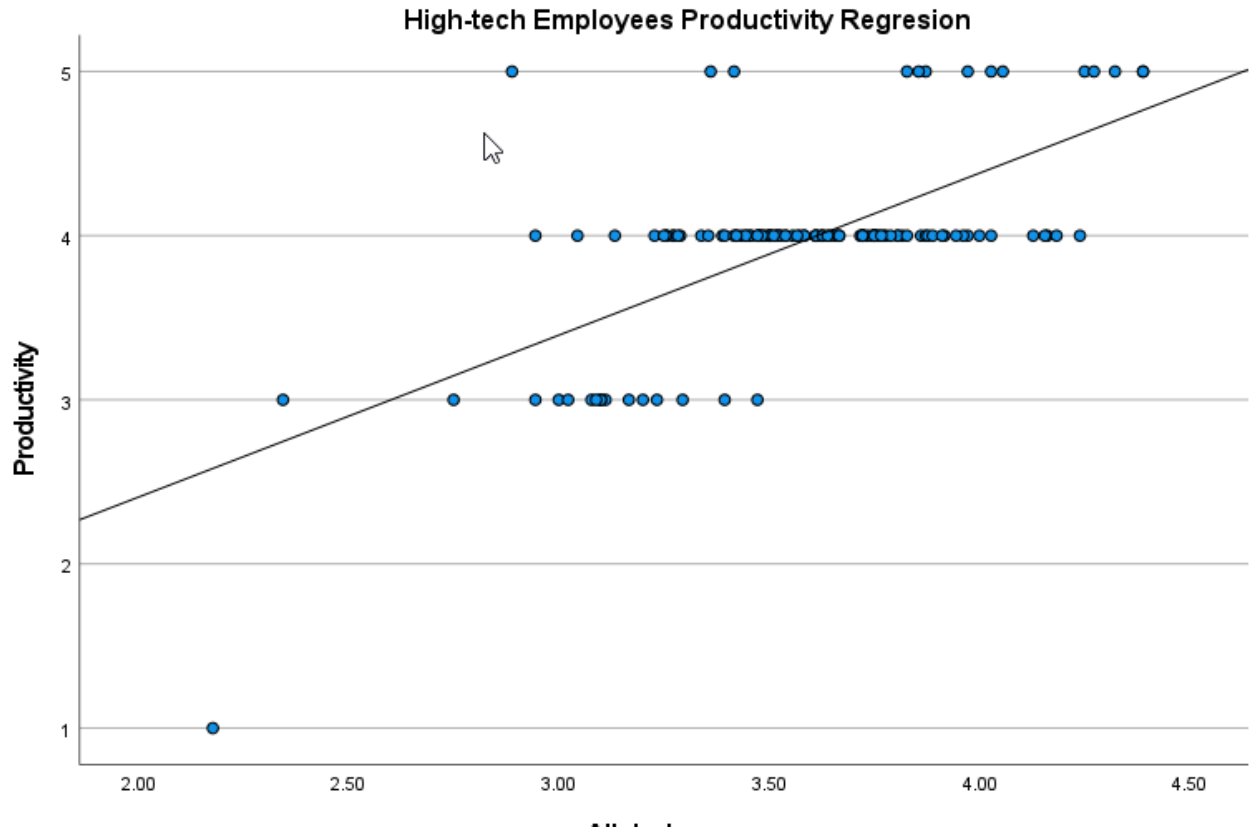


Figure 31. Regression Line (Source: Author)

The results, in summary, show that the most significant variable is the organization's trust, where the B-value of it is around 0.5, which means that an increase in the organization's trust by 2 units will advance the employee productivity by 1 unit. The second significant factor of the Palestinian high-tech telecommuters' productivity is the availability of the equipment, and especially the internet speed, where an increase in the types of equipment by 3 units will increase the Palestinian high-tech employees' productivity by almost 1 unit (B value of 0.288). The third significant factors are both employee seniority and social activities, where they both almost share

the same B value of 0.14, where an increase of 3 units in each variable will advance the Palestinian high-tech employees' productivity by 1 unit.

3.5 Results Discussion

This section discusses the results obtained on the effect of telecommuting on Palestinian high-tech employee's productivity, and the factors that control the productivity of Palestinian high-tech employees while telecommuting.

The results indicate that organization's trust, employees' seniority, equipment availability, and social activities are the key controllers of the Palestinian high-tech employee's productivity, while employee age and marital status, contrary to the hypothesis, are not significant keys.

The study demonstrates a correlation between the Palestinian high-tech employee's productivity and the organization's trust, aligned with the previous studies, and in line with what midwifery et al. (2012) and Setiawan et al. (2016) concluded, the results indicate that there is a positive relationship between employees' organization's trust and the Palestinian high-tech employee's productivity, where the more organization's trust is established, the more productive the high-tech employees will be. The B value for the organization trust is 0.479, which means that an increase of 2 units in the organization's trust implies an increase in the high-tech employee's productivity by almost 1 unit.

in my opinion, the organization's trust is significant in the Palestinian high-tech because this market is experiencing a large expansion, and implies having more opportunities\options, thus, the high-tech employees tend to be employed with companies that support their future, like the stable companies, have multiple core competencies, and where it's decision-makers are trustworthy. Furthermore, in my opinion, the role of the managers and leaders is critical for extracting the best out of the high-tech employees' talents and potential.

To discuss this more, in response to the open-ended question which asks the respondents to list the main challenges that should be addressed to make the employees more productive when working from home, **13 out of the 50** responses mentioned that trust is the main item that affects the Palestinian high-tech employee's productivity, this might lead us to novel results of recommending the Palestinian high-tech organization to establish a strong trust and entanglement with the high-tech employees. So for the Palestinian high-tech companies, they should consider addressing the trust issues as part of the OSW policy, so that the high-tech companies should pull the main trigger of the Palestinian high-tech employee's productivity; the organization's trust.

Contrary to the findings of Mehay and Bowman (2005), and Korenman and Neumark (1991), who concluded that married men are more likely to be promoted and are more productive than single men, and more likely to be engaged in higher-paying jobs, and also will receive higher ratings, the marital status of the Palestinian high-tech employees turns out not a significant controller of the high-tech employee's productivity, and it's clear from the response

that the distribution of the answers is not supporting any side of the formula.

Married high-tech employees are more productive than single high-tech employees when working from home

113 responses

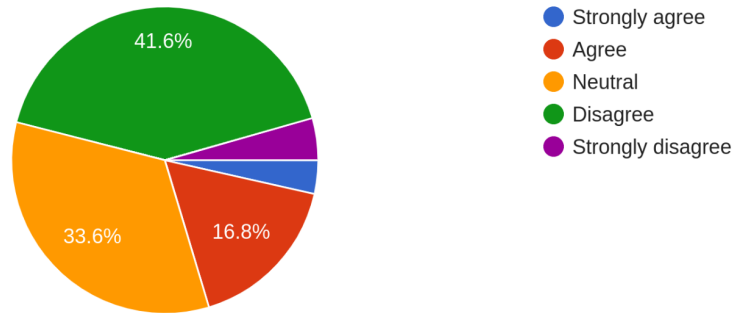


Figure 32. Marital Status VS Productivity Responses (Source: Author)

In my opinion, this may be explained by the fact that married high-tech employees may not be comfortable while working from home, as they will probably have a more noisy, less independent space for working, and thus, will prefer to work from the office, and in the same time, the single employees might choose to work from the office more, and so the effect of the marital status got canceled and become less significant.

A further novel finding is that employee seniority is also a key controller of the Palestinian high-tech employee's productivity. In line with previous studies, and aligned with Nakoi (2011), Der Rijst and Garg (2015), who concluded that there is a positive effect of seniority on employee productivity, and also in line with the research hypothesis of employees seniority; there is a positive relationship between the employee's productivity and their seniority.

Moreover, around 60% of the respondents believe that the effect of seniority on Palestinian high-tech employees' productivity is significant.

In line with what Der Rijst and Garg (2015) concluded, telecommuting might lead to senior isolation and thus having them away from the junior team members. Based on that, high-tech companies might need to consider the seniority level as part of writing OSW policy for maximizing the productivity of high-tech employees.

Contrary to the findings of Boring and Groggaard(2021), and Skirbekk(2004), who concluded that the older employees mainly resulted in significant degradation of their productivity, the results showed that the employees' age is not a significant controller of the Palestinian high-tech employee's productivity. I think this might be explained by the fact that the Palestinian high-tech market is relatively new, and mainly consists of young high-tech employees; where few are 50+ years old. For instance, 76% of the respondents were between the 20-and 30 years old, and only 4 were above 40, so in my opinion, the Palestinian high-tech market still doesn't have a confident knowledge for checking the effect of age on the Palestinian high-tech employee's productivity. Such a thing can be derived for instance; from the sample distribution of the high-tech employees, where the majority of them are twenty\thirty-agers; the below figure show more details:

Age

124 responses

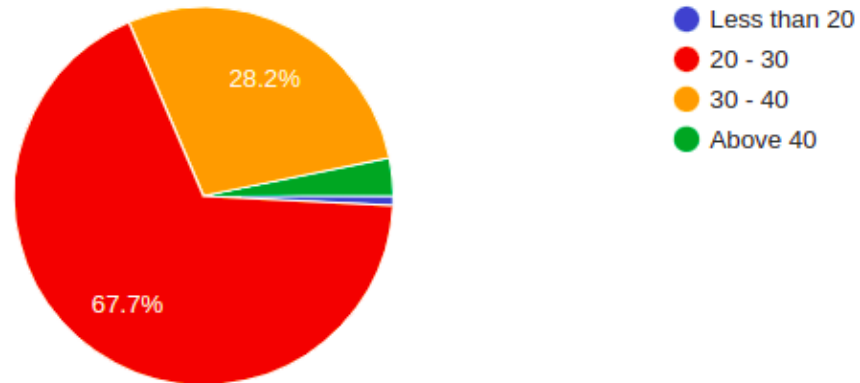


Figure 33. Age Distribution Of The Sample (Source: Author)

For the same reason, and contrary to the ideas of Skirbekk(2011), it can be concluded that high-tech teams with mixed-age members do not affect the overall productivity of the team, we can derive that also from the responses to the mixed-ages question, where the majority of them responded by neutral to the mixed-age team's question, the figure shows below more details for this regard:

High-tech teams with mix ages-members (young and old) employees are more productive than the teams with same age-members (either young or old) when working from home

125 responses

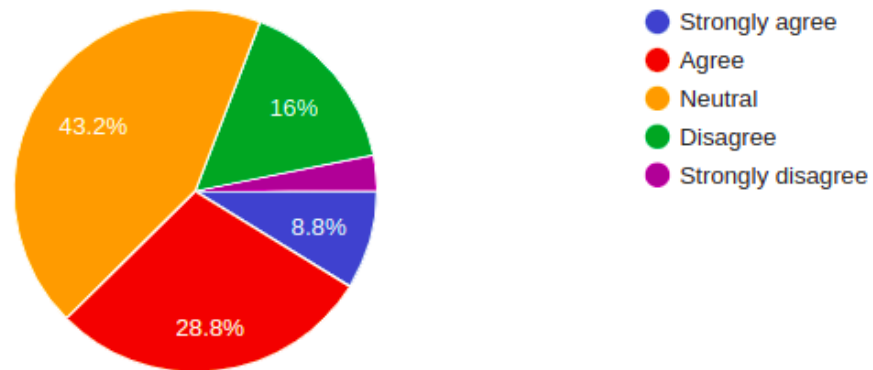


Figure 34. Mixed-age team's responses (Source: Author)

Moreover, the results may be explained by deriving the marital status of the employees from their ages, as usually older employees are most likely married employees, and younger are most likely singles, which leads us to the same results obtained out of the marital status responses, as married employees don't have a quiet, less noisy, and independent spaces for work, and singles might prefer to work more from the office, and thus, the effect of both will cancel each other.

The study also indicates that equipment availability also has a significant effect on the employees' productivity, where having the needed equipment supports the high-tech employees and thus improves their productivity. For instance, more than 90% of the respondents believe that having fast internet access is crucial for high-tech employees to be productive. Likewise, 90% of them believe that having accessories and additional monitors is a must for high-tech employees to be productive. A similar pattern of results was obtained by Kurnia et al. (2017), and Thorstensson (2020), who concluded that appropriate IT support is a key factor in increasing telecommuter productivity, like a fast machine and an internet connection, accessories like quality microphones and video conference stuff.

In line with the results of the study performed by Thorstensson (2020), the results also showed that having an independent space, and a less noisy workplace affects the Palestinian high-tech employee's productivity. 80% of the respondents believe that having a less noisy and independent place for working is a must for improving productivity. The below figure shows that.

Also, the internet speed is a key part of the equipment that the high-tech employees require to increase his/her productivity, it's clear also from the response to the open-ended question of the challenges that should be addressed to make the high-tech engineers more productive, that many responses mentioned the internet speed is a common issue facing the high-tech engineers when telecommuting.

Besides the technical equipment, some of them are not technical equipment, and the results showed that the suitability of the workplace also plays a core role in affecting the employees' productivity, whereas the home-based environment should be also less noisy and have an independent space allocated for telecommuting.

Such a result might lead us to conclude that the high-tech organization should pay attention to the equipment needed for the high-tech employees when telecommuting, especially the internet speed and the accessories needed by the high-tech employees so that they will be more productive.

Based on that, the high-tech companies also should consider marking the equipment availability as a mandatory field and should highlight all the details around it, which includes the internet speed, the other technical equipment, accessories, and the quietness and suitability of the home environment. Moreover, high-tech companies should offer modern Laptops/PC, accessories like headsets, and additional monitors which will advance the Palestinian high-tech employees' productivity.

The study also revealed that the companies making social activities for the employees (e.g. trips, lunch, fun days ...etc) positively affect the productivity of the employees who are working from home, which makes them more productive, it also revealed it's also better to hold such activities periodically, as it positively influences the productivity of the Palestinian high-tech employees. Such a finding might provide a solution to the isolation that Misap (2017),

and Toscano and Zappala (2020) highlighted in their studies, where social isolation while working from home negatively affects the employee's productivity. Social activities might also solve the disconnection feeling of the employees from their colleagues and organization, and thus, become less productive.

So based on that, we might recommend that Palestinian high-tech organizations consider doing social activities and gatherings more frequently in case the company adopted the full or partial telecommuting way of working.

In summary, we recommend the high-tech employees organization to mainly consider the organization's trust, equipment, seniority, and also the social activities when they plan for the OSW, as fine-tuning those variables controls around 64% of the Palestinian high-tech employee's productivity. Furthermore, we also recommend that Palestinian high-tech companies at least partially adopt telecommuting, as most of the responses to the open-ended questions encouraged telecommuting, as it's more flexible in time concerning the employees, and in saving costs on many levels, the transportation cost concerning the employees, and also the operating cost concerning the companies. another gain is also the employee's comfortability, where most of the respondents described that they feel more comfortable when working from home.

Challenges-wise, according to the response to the open-ended question, we might recommend the high-tech organization to pay attention mainly to the internet speed and organization trust, as most of the responses to the telecommuting challenges were around that

two items, and also to consider not losing the company culture; which may be achieved by doing occasional social activities at the team\organization level.

Chapter Four

This chapter summarizes the main finding of this study and illustrate the recommendation and the future direction

4.1 Conclusion

Telecommuting is a contemporary way of working; where employees may have the ability to get their tasks done away from the companies' offices, at home, in coffee shops, or in any other comfortable place that suits their tasks' requirements. Technology nowadays comes with facilities and tools that might be supporting telecommuters and especially the high-tech telecommuters; where it's mainly about writing\validationg\maintiaing\automating codes and software applications and hardware simulation. As telecommuting is observed to be an option for some Palestinian high-tech companies, and most of them during the spread of Covid-19, this study investigated the main factors that affect the Palestinian high-tech employees' productivity when telecommuting, and it also analyzed the effect of each factor. Furthermore, the study aimed to recommend the Palestinain high-tech organization what keys to consider when writing the telecommuting policy so that the telecommuters' productivity would be increased. This study can be concluded by the following points:

1. Organization's Trust, Employee Seniority, Equipments Availability, and Social Activities are the main significant factors that affect the Palestinian high-tech employees' productivity. a combination of those factors explains around 64% of the high-tech employee's productivity when telecommuting.
2. There is a positive relationship between the Palestinian high-tech telecommuter's productivity and the organization's trust, so high-tech employees are more productive telecommuters if their employer companies are trustworthy.
3. High-tech managers' and leaders' trust increases the Palestinian high-tech telecommuters' productivity.
4. Palestinian high-tech companies with more core competencies attract more productive telecommuters.
5. The Palestinian high-tech companies should consider the organization's trust for having more productive telecommuters.
6. Palestinian high-tech telecommuters' age has no significant effect on their productivity.

7. There is no productivity gain from organizing the high-tech teams with mixed-age members (young and old) over the high-tech teams with same-age members (either young or old) when telecommuting.
8. The availability of the equipment plays a core role in advancing the Palestinian high-tech telecommuters' productivity.
9. internet speed is the main equipment needed by the Palestinian high-tech telecommuters to be more productive.
10. Accessories types of equipment like headsets and additional monitors are also important for enhancing the high-tech telecommuters' productivity.
11. Having a suitable workplace (quiet, independent place) is necessary for the Palestinian high-tech telecommuters to be more productive.
12. The marital status of Palestinian high-tech telecommuters does not influence their productivity.
13. The seniority of Palestinian high-tech telecommuters plays a core role in increasing their productivity, where senior high-tech telecommuters are more productive than junior ones.

14. Employees' seniority should be considered when creating telecommuting policies, as senior employees are more productive than juniors when telecommuting.
15. Doing occasional social activities at the organization or the team level is necessary for the Palestinian high-tech telecommuters to be more productive, as it breaks the workplace isolation.
16. Having tools for remote communication (e.g. Zoom, Microsoft teams ..etc) encourages companies to adopt the working from home style.
17. Telecommuting saves the company's running\operating costs (Power, water, ...etc).
18. Telecommuting is saving the telecommuters time, especially the transportation time, and it's more flexible for them to manage.

Palestinian high-tech companies should at least consider partial adoption of telecommuting, as it's a prominent way of getting the tasks done, as it's saving their time, and serve as a flexible option. Organization's Trust, Employee Seniority, Equipments Availability, and Social Activities are the main significant factors that affect the Palestinian high-tech employees' productivity.

4.2 Recommendations

In light of the conclusions of this study, the following recommendations are made:

Telecommuting Adoption Wise:

1. It's recommended that high-tech companies should partially adopt telecommuting.
2. It's recommended that the palestinian high-tech organizations create a detailed telecommuting policy.

Employees' Productivity Wise:

1. It's recommended that high-tech organizations consider occasional social activities for telecommuters.
2. It's recommended that Palestinian high-tech companies consider employee seniority level
3. It's recommended that the palestinian high-tech telecommuters have a quiet and less noisy environment for telecommuting.

Telecommuting Future:

1. It's recommended to investigate whether telecommuting also applies to the other sectors in Palestine.

2. It's recommended to study and investigate how can the Palestinian economy be improved by adapting to telecommuting.

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APPENDICES

Appendix1: Regression Analysis

➔ Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment ^b	.	Enter

a. Dependent Variable: Productivity

b. All requested variables entered.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.228	6	4.205	36.556	<.001 ^b
	Residual	13.572	118	.115		
	Total	38.800	124			

a. Dependent Variable: Productivity

b. Predictors: (Constant), social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 ^a	.650	.632	.339

a. Predictors: (Constant), social_activity, Marital_Status, Age, seniority, Organization_Trust, Equipment

→ Reliability

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	125	100.0
	Excluded ^a	0	.0
	Total	125	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.796	26



Appendix2: Questionnaire



I'm Adnan Zubaydi, MBA student at Birzeit University.

This research is about analyzing the high-tech employees' productivity while working out of the office, it's supervised by Dr. Tareq Ashour & Dr. Samir Baidoun.

I'm seeking your help to fill up the questionnaire, your response would help me in building a base of knowledge about the telecommuter's productivity.

The survey is expected to take no more than 5 minutes.

Your response will be treated confidentially with highly scientific research ethics.

Your help is highly appreciated.

~Adnan.

Socio-demographic questions

The information will help us in further analyzing the responses

Age	<input type="checkbox"/> Less than 20	<input type="checkbox"/> 20-30	<input type="checkbox"/> 30-40	<input type="checkbox"/> 40+
Gender	<input type="checkbox"/> Male		<input type="checkbox"/> Female	
Governance	-----			
Bachelor Degree	-----			
Job Title	-----			
Marital Status	-----			

Employee Seniority

This section will measure the effect of employees' seniority on the employee's productivity,

In my opinion, high-tech employees seniority affects their productivity when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

High-tech employees who are employed for long period with the same company, are more productive when working from home.				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Senior high-tech employees are more productive than Junior high-tech employees when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

The more senior the high-tech employees are, the more productive they will be when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Social Activities

This section will measure the effect of Psychological Social Activities on the employee's productivity,

In my opinion, companies making social activities for the employees (e.g. trips, lunch, fun days ...etc) affects the productivity of the employees who are working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

I enjoy making friends with the people in my organization.				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Teams making social activities like gatherings, trips, games, and fun days, increases the productivity of the high-tech employees who are working from home.				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

I like to engage in social interactions with people in my organization outside of the work day (messaging, shopping, visiting ...etc)				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Having periodic social events (e.g. fun days, team lunch, go-kart), are important to increase the productivity of the high-tech employees who are working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Organization Trust

This section will measure the effect of Organization Trust (e.g. stable company, loyal employees, employees trusting company decision, leaders trusting the employees, core competencies) on the employee's productivity

High-tech employees who are loyal to their company are more productive when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

High-tech employees who are employed with stable company are more productive when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

High-tech employees who trust the company decisions are more productive when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Manager & Leaders trusting their high-tech employees makes them more productive when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

High-tech employees employed in a company that has many core competencies (Financial Power, Organizational Agility, Continuous Learning Culture, Leadership, Multiple opportunities , ...etc) are more productive when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

The company size (number of employees) affects the high-tech employees productivity when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

Equipment Availability

This section will measure the effect of Equipment (net speed, office, Pcs, monitors, and accessories, office) Availability on the employees productivity

Equipment like (Internet speed, Pcs or Laptops ...etc) and accessories like (headsets and additional monitor ...etc) affect the high-tech employees productivity when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

Company offering modern Laptop/PC makes the high tech employees more productive when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

Company offering accessories like headset, additional monitor makes the high tech employees more productive when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

The faster the internet speed at home, the more productive the high-tech employees will be when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

Having tools for remote communication (e.g. Zoom, Microsoft teams ..etc) encourages the companies to adopt working from home style

Strongly Agree Agree Neutral Disagree Strongly Disagree

High-tech employees working from home in a suitable environment (less noise, independent space) are more productive

Strongly Agree Agree Neutral Disagree Strongly Disagree

Employee Age

This section will measure the effect of Employee Age on the employee's productivity

High-tech employees age affects their productivity when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

High-tech employees in the age of 50s and 60s are less productive than those who are in the age of 20s and 30s, and 40s when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

High-tech teams with mix ages-members (young and old) employees are more productive than the teams with same age-members (either young or old) when working from home

Strongly Agree Agree Neutral Disagree Strongly Disagree

Marital Status

This section will measure the effect of Marital Status on the employee's productivity

In my opinion, marital status of the high-tech employees influences their productivity when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

What is the marital status that makes the high-tech employees more productive when working from home?		
Single <input type="checkbox"/>	Married <input type="checkbox"/>	Other <input type="checkbox"/>

Family size (number of kids) does not affect the productivity of high-tech employees when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Married high-tech employees are more productive than single high-tech employees when working from home				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Employees Productivity

The more the employees work from home, the more productive they will be				
Strongly Agree <input type="checkbox"/>	Agree <input type="checkbox"/>	Neutral <input type="checkbox"/>	Disagree <input type="checkbox"/>	Strongly Disagree <input type="checkbox"/>

Open-Ended Questions

This is an optional section about your opinion, but it's very valuable

Do you think the Palestinian high-tech companies should encourage working from home? why?

If you have the choice to work from home, would you accept? why?

In your opinion, what are the main challenges that should be addressed to make the employees more productive when working from home?

What are the main motivations that encourage the companies to adopt the working from home?

Thanks For Your Help

