Employee engagement and technology: a case study analysis of best practice in Italian SMEs

by

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Finally, I want to dedicate this work to all Italian workers who are struggling to feel engaged at their workplace. I hope studies like this could start the revolution in the Italian SMEs and could bring to a new era, as a participant to the research told me <*I hope interviews like this can lead to greater awareness among workers and employers*>.

Abstract

The role of the employee remains a critical aspect in any firm, especially for small and medium-sized enterprises (SMEs). Among scholars and practitioners, a growing body of research has demonstrated that happy and engaged employees lead to better performance. In recent years, employee engagement is even more crucial and difficult to achieve in a hybrid work environment (working from the office and from home). Despite that, the effective management of workers is still a slow and difficult approach to implement.

The central aim of this research is to examine the ways in which technology is being used to engage employees and to develop a best practice model for using technology to obtain high levels of work engagement in the context of Italian SMEs. To perform that, this work focused on both the negative and positive experiences of using technology. Indeed, little research has explored technology as a driver for employee engagement in Italian SMEs. Furthermore, the research's outcome is to develop a best practice model for improving employee engagement through technology and so enabling employees to feel more engaged and less disconnected.

This research concentrated on Italian context, surveying employees from Italian SMEs. Unfortunately, that confirmed the poor performance of Italian companies about employee engagement showed by Gallup's reports of the last years: Italy is the last country among those studied by Gallup, with a mediocre 4% of engaged employee (in 2021).

The current research is a combination of both exploratory (describing the current impact of technology on employee engagement in SMEs) and evaluative studies (assessing the extent to how technology can drive engagement). Moreover, within the mixed methods design, a multiple case study strategy was conducted.

The secondary sources used include data and information from the extant literature around employee engagement and the technology and work interface, and from databases (like 'EBSCO Information Services'), books, and web sites (of scholars, universities, associations, and practitioners). The primary sources include two measures: The Techno-Work Engagement Scale (TechnoWES) and the Technostress scale; and in-depth personal interviews (with subject-matter experts and workers from companies selected as the sample from Italian SMEs).

The research was designed to undertake an in-depth study on a small number of SMEs, interviewing their employees, and conducting a multiple case study analysis. The selection of firms was made between the Italian SMEs on the entire territory, with no focus on any specific region, industry, or size. Furthermore, information on these aspects was collected for further analysis.

Quantitative data from primary sources analyzed in this research has been tested using descriptive statistics, and with the Cronbach's alpha coefficient for verifying its consistency, whereas qualitative data was analyzed using thematic analysis.

It is important to say that the most important precondition to a strong and long-lasting employee engagement at Italian SMEs is a genuine positive approach of companies owners to workers. Without that, any framework to improve technology use, and any effort put in its implementation, are useless. What emerged clearly from the in-depth interviews with workers at Italian SMEs is that the main obstacle to employee engagement is the old-style Italian SMEs owners' custom to perceive their employees only as a *mere company asset* – just a number; that invalidates any contribution to engagement made by both technology and good relationship with colleagues.

The current research was not intended to study the problem of disengagement at work from the lens of organizational behavior; thus, the outcome of the research is a best practice model that could improve employee engagement through technology, and a crucial prerequisite is a working environment where the company atmosphere is not harmful.

Lastly, it is important to study further the problem of disengagement and with different perspective; so, a suggestion for future studies is to inquire the problem of disengagement among Italian SMEs with the help of organizational behavior. The latter would help to better understand and define the root cause of disengagement in Italian SMEs, and the best practice model developed in this research will build upon that and work as a catalyst to improve the engagement among workers.

Keywords: Engagement; Well-being; TechnoWES, Technostress; Eustress; Technology; Best practice model; Italy; SME.

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1 Introduction

1.1 Context

Technology has become a natural part of working life since the 1960s. Automation, for example, began in manufacturing during the 1960s, and computerization of work started in the 1970s. It is now suggested we are in the middle of the fourth industrial revolution with work processes and innovation that include artificial intelligence and quantum computing, to name a few. Digitization of working life is now taken for granted and it is expected to be one of the key drivers of business growth in the future.

However, work digitization has made many employees feel disconnected from their companies and teams. Several indices (Leesman's index; etc.) and reports (Gallup, etc.), from consultancy firms, for example, distil the current situation and the cost of disengagement. Moreover, several studies have reported negative experiences with technology, namely *technostress experiences*. Technostress is defined as a negative experience or state and it includes feelings of anxiety, fatigue, skepticism and beliefs related to the inefficiency of using technology. (Salanova, Llorens, & Cifre, 2013)

Current developments in work digitization, however, have also seen positive effects. These effects can be experienced in areas such as improved safe at work – where technology can help with dangerous tasks – or improved gratification at work – where technology can aid with demanding and monotonous work. Related to these positive effects is the recent work on the concept of *techno-work engagement*. Techno-work engagement is a positive and fulfilling well-being state or experience that is described by vigor, dedication and absorption with the use of technology at work. (Mäkiniemi, Ahola, & Joensuu, 2020) Whereas, employee engagement is considered a state of being and a broad umbrella term that encapsulates a range of constructs – like organizational commitment, organizational citizenship behaviors and motivations. (Gifford & Young, 2021)

Among scholars and practitioners, a growing body of research has demonstrated that happy and engaged employees lead to better performance. (Gallup, 2017; Gifford & Young, 2021; Hamel, 2012, 2020; Pfeffer, 1994, 1998) Thus, the role of the employee, or *human resource*, remains a critical aspect in any firm, especially for small and medium-sized enterprises (SMEs). These companies relies on a small number of employees and often must vigorously compete to attract the right people, with the right skills, in that is called as a *war for talent* with very limited resources.

In recent years, employee engagement is even more crucial and difficult to achieve because of the hybrid work environment (the coexistence, and the alternation, of work from office with the work from home). Indeed, it is possible to find (a limited number of) studies on the correlation of remote working

with engagement in the literature. Furthermore, those studies that have been carried out provide contrary conclusions: for example, investigations among Information Technology consultants who telework in the USA found both negative (R. Davis & Cates, 2013) and positive correlations (Gipson, 2017).

Moreover, in the work environment, much attention is given to technology and how to use it to communicate and to help teamwork. Instead, the central focus of this study is about using technology to engage employees and reduce the disconnection that they feel from their companies and team members.

More specifically, the central aim of this research is to examine the ways in which technology could be used to engage employees and to develop a best practice model for using technology to obtain higher levels of engagement in the context of Italian SMEs. Furthermore, the Techno-Work Engagement Scale (TechnoWES) is used to measure the level of engagement with technology. (Mäkiniemi et al., 2020)

1.2 Current data on engagement

The engagement level in companies worldwide improved every year from 2009 until 2019 (when it reached 22%, the higher point), and then it dropped to 20% in 2020. Luckily, in 2021, it started to increase again – the engaged employees at work were 21% of the worldwide workforce.

In 2021, the *thriving level* also increased reaching its peak: from the 32% of 2020 to the 33% of 2021, a positive trend that continues since 2017 (when it was at 27%). Despite the fact that we are observing a positive trend for both the engagement and the thriving levels (measured by feelings about life now and the expectations in 5 years), the current statistics are still too weak, and a lot of work should be done for improving them. (Gallup, 2022) Unfortunately, the average figures (like ones just reported) do not correctly describe the actual situation in Western Europe: the thriving level saw a decrease of 5 points[1] from 2020 to 2021. In other words, European workers felt that their lives became worse compared to the previous year (2020) and, in addition to that, they felt discouraged about their next future. (Gallup, 2022)

The Gallup 2022 report on the State of the Global Workforce provides another cause for reflection: the levels of stress, worry, anger, and sadness of global workers are still high. Almost all of them declined from 2020 (except the level of the stress) but they are still above the pre-pandemic levels (2019). In 2021, the levels of stress, worry, anger, and sadness was 44% (with a pre-pandemic level of 38%), 40% (with a pre-pandemic level of 35%), 21% (with a pre-pandemic level of 20%), and 23% (with a pre-pandemic level of 21%), respectively. (Gallup, 2022)

[1] In 2021 Gallup's report Europe was divided in Western and Eastern Europe, in 2022 report the two regions (Western and Easter) are consolidated into one region called *Europe*.

Another important aspect linked to the engagement level is the *brain drain* problem. The willingness to move to another country of highly educated workers is negatively correlated with their engagement level: high levels of the latter are translated into a low intention to leave the current country of living. As an example of that, in Western Europe, 40% of the actively disengaged workers said to want to move to a different country, compared to only 16% of the engaged workers – in the region the average is 21%, whereas in North America (USA and Canada) is 10%. (Gallup, 2017)

It is extremely dangerous for companies to not care about their employees' engagement, and the examples made by the consultant Britt Andreatta helps them to clearly understand the risk of maintaining the *status quo*. She started from the data on Gallup's report to provide very easy-to-understand examples on how much disengagement costs to companies. The calculations (very straightforward) are the following:

- Gallup reported as 17.2 the average percentage of one organization's workers that are *actively disengaged*; moreover, it found that they cost to the company an average of $3,400 for every $10,000 of payroll (34%). (Petrone, 2017)

1. Thus, for one company with 5,000 workers, the actively disengaged workers should be around 860 (17.2%).
2. If the average salary is $60,000, the cost of the disengagement is about $20,400 (34%).
3. So, multiplying the disengaged workers by the average cost of each of them (860 x $20,400), the final cost of disengagement at a company is calculated as $17.544milion. (Andreatta, 2016)

One different, and at least equally strong, way to think about employee engagement development is to compare figurately it to investments made in other parts of the company. For example, when one company buys a machine (therefore investing in equipment), it makes all possible to maintain the machine working at its best (performing maintenance at scheduled periods during its life, assuring it operates respecting all the producer's requirements and suggestions, training workers to use the machine as effectively as possible), and it continues to do that until the end of its life. The same approach is not pursued with employees: after their hiring, almost nothing (or very little) is done to allow people to operate at their best – improving their engagement is one, and the most important, of the aspects that companies should take care of.

In addition, if we continue with our parallelism between the workforce and other company assets, we could realize that if 85% of workers are not engaged or are actively disengaged[2] (in other words, the

[2] <*Engaged: Employees are highly involved in and enthusiastic about their work and workplace. They are psychological "owners," drive performance and innovation, and move the organization forward.*
Not engaged: Employees are psychologically unattached to their work and company. Because their engagement needs are not being fully met, they're putting time — but not energy or passion — into their work.

85% of the asset is *not* working at its best or *not* working at all) is like the *asset* workforce was actually working at only the 15% of its capacity. This depicts the current situation and should let companies realize how alarming the level of disengagement at work is.

Gallup (Gallup, 2017) also finds that companies with high levels of employee engagement have more odds of succeed: companies at the top quartile have double of chance to thrive compared to ones in the bottom quartile, and companies at the 99th percentile have a success rate that is four times the one of companies at the first percentile. Furthermore, positive outcomes are clear not only at company level but also at business unit levels (BUs). Comparing the BUs at the top quartile (of the employee engagement level) with the BUs at the bottom quartile, the first ones should expect the following improvements:

- 17% higher productivity,
- 20% higher sales,
- 21% higher profitability,
- 41% lower absenteeism,
- 24% lower turnover for high-turnover organizations (companies with higher than 40% of the annualized turnover),
- 59% lower turnover for low-turnover organizations (companies with 40%, or less, of the annualized turnover),
- 40% fewer product quality incidents (defects).

1.2.1 Data from Gallup's 'State of the Global Workplace' reports.

Data that follows is from the 2022 edition (based on a survey taken in 2021), and data from the 2021 edition is in brackets (based on a survey taken in 2020). (Gallup, 2021, 2022)

Employee Engagement (% of engaged employee):

- Globally: 21% (20% in 2020),
- Europe: 14% (Western Europe, 11% in 2020[3]) – for both years, ranked as the last region:
    - **Italy**: 4% (5% in 2020) – ranked as the last country globally for both years (in 2020 with Algeria and Japan; in 2021 Italy was alone – Algeria registered a 7% of workers engaged, and for Japan the workers engaged were the 5% of the workforce),
    - Romania: 33% – ranked as the best country in Europe,
    - Finland: 13% – ranked as the 26th country in Europe.

Actively disengaged: Employees aren't just unhappy at work — they are resentful that their needs aren't being met and are acting out their unhappiness. Every day, these workers potentially undermine what their engaged coworkers accomplish.> (pp.22-23) (Gallup, 2017)

[3] In 2021 Gallup's report Europe was divided in Western and Eastern Europe, in 2022 report the two regions (Western and Easter) are consolidated into one region called *Europe*.

- North America: 33% (34% in 2020):
    - USA: 35% (34% in 2020),
    - Canada: 21% (19% in 2020).

Thriving (measuring employees' life evaluation now and in 5 years, where top means the best possible life expectation):

- Globally: 33% (32% in 2020),
- Europe: 47% (Western Europe, 55% in 2020[4]) – for both years, ranked as the third region:
    - **Italy**: 40% (41% in 2020) – ranked as the 26th country in the region,
    - Finland: 84% – ranked as the best country in Europe,
    - Romania: 51% – ranked as the 16th country in Europe.
- North America: 60% (56% in 2020):
    - USA: 58% (58% in 2020),
    - Canada: 63% (63% in 2020).

1.3 Theoretical and practical gaps, and research rationale

To date, limited empirical research has been conducted inside Italian SMEs that explores the correlation between employee engagement and the use of technology. Furthermore, no empirical study has looked specifically at developing a best practice model for achieving high levels of work engagement via the effective use of technology. Indeed, much research has focused on the negative experiences of working with technology but little on the positive (Mäkiniemi et al., 2020); thus, the aim of this research is to look at both negative and positive experiences of using technology.

Despite the abundance of evidence that the effective management of people at work provides positive results, such practice is still slow and difficult to implement. (Gifford & Young, 2021; Hamel, 2012, 2020; Pfeffer, 1994, 1998) The situation in SMEs – not only in Italy – is, sometimes, even worse.

From an employee engagement perspective, levels of global work engagement are dramatically low worldwide. For example, worldwide employee engagement is only 21%, in Europe[1] 14% and in Italy 4% – ranked as the last country globally (data of 2021). Even more dramatic are the levels of workers *actively disengaged*[2] that reach the peak of 18% globally, 16% in the USA, 14% in Canada, 19% in Western Europe[1], and 30% in Italy – the worst in 155 countries worldwide – (data aggregation of 2014-2016). Moreover, it has been calculated that the low engagement level, costed to the global economy USD 8.1 trillion in 2020. (Gallup, 2017, 2021, 2022)

[4] In 2021 Gallup's report Europe was divided in Western and Eastern Europe, in 2022 report the two regions (Western and Easter) are consolidated into one region called *Europe*.

Nevertheless, little research has explored technology as a driver for employee engagement in Italian SMEs. The rationale of this study then is to bridge that gap through a mixed methods study that will be discussed in detail later in the research methodology section.

In summary, the research aims to develop a framework (a best practice model) for improving employee engagement through technology and thus enabling employees to feel more engaged and less disconnected. The study's rationale is focused on the limited empirical research conducted among Italian SMEs that examines how a smart approach to technology could improve employee engagement and help people feel less disconnected and more engaged.

1.4 Research aim, questions, and objectives

The research concentrates on two aspects:

- *What* and *how* the adoption of technology leads employees to feel more engaged.

The stages followed to conduct the study are:

1. Introduction – Concepts definition (details available in chapter 2),
2. Companies' data analysis:
    a. Quantitative analysis (to frame the current situation in Italy – details available in chapter 4),
    b. Qualitative analysis (to go in depth to the engagement condition in Italy – details available in chapter 5).
3. Conclusion – Outcome: best practice model (details available in chapter 6).

1.4.1 Research aim

The overall aim of the current study is to explore the use of technology as an enabler of employee engagement, and more specifically how technology can be used to enhance employee engagement in Italian SMEs through developing a best practice model.

1.4.2 Research questions

Research Question 1: To what extent is technology enhancing work engagement in Italian SMEs?

Research Question 2: How is technology increasing (or decreasing) work engagement?

1.4.3 Research objectives

Objective 1: Critically analyze the extant literature on employee engagement through technology.

Objective 2: To examine the levels of work engagement in Italian SMEs.

Objective 3: To examine how technology is raising employee engagement and develop a best practice model for enhancing employee engagement via technology.

Objective 4: Provide recommendations to Italian SMEs about the effective use of technology to improve the engagement of their employees.

1.5 Conclusion

Technology has become an integral part of working life since the 1960s; however, work digitization has made many employees feel disconnected from their companies and teams: several studies have reported negative experiences with technology, that are described as *technostress experiences*. Technostress is defined as a negative experience or state, and it includes the unhealthy feelings of anxiety, fatigue, skepticism, and beliefs related to the inefficiency of using technology. Nevertheless, current developments in work digitization have also seen positive effects, *techno-work engagement*. The latter is a positive and fulfilling well-being state or experience that is described by vigor, dedication and absorption with the use of technology at work.

Despite that, in the work environment, much attention is paid to how to use technology to communicate and to help teamwork. Instead, the central focus of this study is about adopting technology to engage employees and reduce the disconnection that they feel from their companies and team members.

Furthermore, in the literature we can find limited empirical research that explores the correlation of employee engagement with technology that has been conducted inside Italian SMEs, and no empirical study has looked specifically at developing a framework for improving engagement via technology. Therefore, this study's findings have been used to develop a best practice model for achieving that.

Regardless of the abundance of evidence that the effective management of workers at work provides positive results, such practice is still slow and difficult to implement. In recent years, employee engagement is even more crucial and difficult to achieve in a hybrid work environment (with a frequent alternation of working from office and from home). Furthermore, it has been calculated that disengagement costs to companies an average of $3,400 for every $10,000 of payroll (34%).

Thus, the research focuses to explore the use of technology as an enabler of employee engagement, and, more specifically, to develop a best practice model to illustrate how technology could be used to enhance employee engagement by Italian SMEs.

The current research is a combination of both exploratory (describing the current impact of technology on employee engagement in SMEs) and evaluative studies (assessing the extent to how technology can drive engagement), leveraging on a multiple case study analysis. Research starts with quantitative data

collection and analysis (used to frame the current situation in Italy) and, building on that analysis, it continues with qualitative analysis (used to go in depth to the engagement condition in Italy).

Data and information used in the research are from both secondary sources and primary ones. The former are data and information from the extant literature around employee engagement, technology, and work interface. The latter are questionnaire based on TechnoWES and Technostress scale, and in-depth personal interviews with employees working for Italian SMEs on the entire territory and with no focus on any specific region, industry, or size.

Lastly, quantitative data from primary sources analyzed in this research was tested using descriptive statistics, and with the Cronbach's alpha coefficient for verifying its consistency; qualitative data was analyzed using thematic analysis.

2 Literature Review

2.1 Introduction

The following section contains the analysis conducted on the literature basically for: 1. Frame and analyze the concept of engagement; 2. Find high reliable and valid tools to measure the engagement of Italian SMEs' employees during the investigations made by the researcher (questionnaire and interviews); 3. Analyze the gaps present in the literature over the context of the Italian SMEs, and that could be fixed with this research.

The chapter is divided in the following sections:

- definition of SME (by European Union),
- analysis of organizational theories available in the literature,
- analysis of concepts and theories of motivations,
- definition of engagement and its measurement.

2.1.1 The definition of SME

The small and medium-sized enterprises (SMEs) are the most common in the European Union, representing 99% of all the companies in the Union. The EU recommendation 2003/361 defines the categorization, and the main factors that regulates if a company is an SME are the:

1. staff headcount, and
2. either turnover or balance sheet total.

Moreover, if the company is part of a group, in the counting may need to be included data from the entire group. (Directorate-General for Internal Market)

Medium-sized companies:

- staff headcount → < 250,
- turnover → ≤ € 50 m,

  or
- balance sheet total → ≤ € 43 m.

Small companies:

- staff headcount → < 50,
- turnover → ≤ € 10 m,

  or
- balance sheet total → ≤ € 10 m.

Micro companies:

- staff headcount → < 10,
- turnover → ≤ € 2 m,

  or
- balance sheet total → ≤ € 2 m.

In Italy, the SMEs in 2020 were 3,610,877 divided in 3,421,083 micro companies, 169,725 small companies, and 20,069 medium-sized companies. (Statista, 2021)

2.2 Organizational theories

Organizational theory is the study of the organizations' functions and of their impacts to the environment in which operate.

2.2.1 Industrial and Organizational Psychology

2.2.1.1 What is I-O Psychology?

The term *I-O Psychology* (or Industrial and Organizational Psychology) is the application of studies, theories, and research to the work environment. It recognizes the interconnection of people, organizations, and society and the influence of internal and external factors on that interconnection.

There are several areas of study for I-O Psychologists (selection and placement, training and development, etc.) and this study focuses on the area of study of *quality of work life* because of its impact on recognizing and explaining the behaviors of workers related to employee engagement.

Moreover, of the traditional three concentrations of I-O Psychology – Personnel psychology, Organizational psychology, and Human Factors psychology –, this study focuses on *Organizational psychology*. The latter covers motivations, emotions at work, stress, team working and combines concepts and research from social psychology and organizational behavior.

Lastly, one of the main associations for I-O researchers and practitioners is *SIOP*, Society for Industrial and Organizational Psychology (designated as the *Division 14* of the American Psychological Association – APA). (APA; SIOP)

2.2.1.2 Why it is of interest for the DBA research

The I-O Psychology is essential for the holistic approach because behaviors are influenced by several things: the environment where people live and work is not sterile. Indeed, important cultural differences mean different approaches, and different and diverse cultures and values bring dissimilar behaviors.

Moreover, the *industrial* part of the I-O Psychology is less valuable for the study because covers topics on individual differences, assessment, training, and job analysis. The *organizational* part of the I-O Psychology is more valuable for the study instead. It covers topics such as motivation, stress, team working, and organizational theory to address the emotional and motivational side of work.

2.2.2 Systems Design

Technology has had, and continues to have, an important impact on the interaction between employees and systems present in companies. For this reason, it is crucial to correctly address current research, reviewing that impact and the evolution of those systems.

In the system design – the process of defining the elements of a system – we can find some approaches specifically developed to improve the interaction between humans and machines.

2.2.2.1 Socio-technical systems

The term *socio-technical systems* was used for the first time in 1960 by Emery and Trist. Initially, it described systems that involved complex interactions between people and machines, and the environmental aspects of the work system. Nowadays, that kind of interaction is the norm for most of the systems.

The term *socio-technical systems (STS)* refers to a system that considers requirements from human, social (related to the relationships between people who work together), and organizational (related to the company) aspects. The *socio-technical systems design (STSD)* is an approach to the design of complex organizational systems that considers social and technical factors.

We have seen several approaches in the developing history of the socio-technical systems design (STSD), and for an extensive historical review see the paper *The Story of Socio-technical Design: Reflections on Its Successes, Failures and Potential* by Mumford. (Mumford, 2006)

Nowadays, in most companies we have witnessed the transfer to a *general* Human-Machine Interaction (HMI) to an *always present* Human-Computer Interaction (HCI). Moreover, with the COVID-19 pandemic, that interaction became prevalent also at home, adding – to the already long hours spent on computers for leisure – the working hours. That brought home many of the problems that before were largely relegated to the office.

Indeed, a broader interaction with a computer, even if simplifies tasks, brings problems too. One of the issues from deep (i.e., always present) interaction with a computer is the loss of the sense of reality; the distance between people and the real world is increasing every day and, at the same time, it also intensifies the feeling of disconnection among people and companies.

Another interesting observation is that, even if all the *features* added to a system (like the infotainment system in cars) were developed to assist people and improve safety, performance, or joy, the final result

is an increased workload to operate the system. This not only increases the sense of fatigue for the user, it also adds new problems and new type of incidents (i.e., the operator is overwhelmed by the new system to be used, or simply distracted by it and its new *amenities*). (Boy, 2011)

Thus, it is very important to keep all this in mind when developing a new system (or simply modifying one of its aspects), putting the human at the center of the design process: one of the most interesting and current approaches that incorporated the socio-technical ideas is the *human-centered* design.

2.2.2.2 Human-centered design

Another approach in designing complex organizational systems is the *human-centered design (HCD)*. The human-centered design approach has been standardized by the ISO (International Organization for Standardization) in a well-defined framework, and its last update is the 'ISO 9241-210:2019'. The latter defines the human-centered design as *"…an approach to interactive systems development that aims to make systems usable and useful by focusing on the users, their needs and requirements, and by applying human factors/ergonomics, and usability knowledge and techniques. This approach enhances effectiveness and efficiency, improves human well-being, user satisfaction, accessibility and sustainability; and counteracts possible adverse effects of use on human health, safety and performance…."* ("ISO 9241-210:2019 | Ergonomics of human-system interaction — Part 210: Human-centred design for interactive systems," 2019)

The human-centered design has five main principles at its foundation:

1. Great design is based on observed, human need (human centricity).
2. Great design comes from understanding people's behaviors, thoughts (cognitive empathy) and emotions (emotional empathy).
3. To make good design decisions, we must first create a pool of possible solutions to choose from.
4. Great design comes from a desire to create real outcomes.
5. Great design is iterative. It leverages continuous learning and never truly ends.

("Human-Centered Design Overview,")

2.3 Concepts and theories of motivation

2.3.1 Motivation and evolution of its concept

An important part of the engagement is motivation; in this section, it is described what motivation is and how its concept has evolved over the years.

Vinacke provided a definition of motivation linking it to behaviors: <*motivation concerns the conditions responsible for variations in intensity, persistence, quality, and direction of ongoing behavior*>. (Vinacke, 1962) We have seen and experienced different workplace settings since that definition was formulated

in 1962 and the same happened to work too. It changed for both managerial and non-managerial tasks, adding a lot of automation and using robots to free employees from boredom and dangerous work. At the same time, the production side and the entire company also changed. One example is the innovation made by the large use of computers that even replaced some workers' tasks and functions.

Moreover, also the motivation theories evolved from the connection with the notion of *instincts* (Freud's approach) towards *needs* (of Maslow's theory), *motives*, and *drive* (the nonhuman equivalent of *motives* and *needs*). (Viteles, 1953) Another important notion found in the literature was developed by B.F. Skinner. (Skinner, 1938) The ideas was that motivation was:

- connected to *inborn and universally present* aspects,
- linked directly to behavior and universally present in humans (like for instincts and needs), and
- the emphasis of behaviors directly connected, and responding, to the environment (like for the behaviorist approach).

Like a behaviorist, the *field theory* considered the influence of the environment (*the field*) but in much less mechanical way. Kurt Lewin suggested that distinct forces in the psychological environment interacted and mixed to a final direction. (Lewin, 1935, 1938) If between 1940 and 1960 the main theories were the *need* and *behaviorist* ones, from 1960, due to the emergence of cognitive psychology, new motivational theories came out. These theories – the *cognitive* ones – emphasized the thought and the decision process of people. Nowadays, motivational theories are, at their core, predominantly cognitive and emotional, differing on the *what* and *how*, not on the *whether*.

One of the best approaches to understanding the variations and the evolution of the different motivational theories is the use of metaphor, suggested by Weiner Bernard. He proposed the *person as machine* and the *person as scientist* metaphors (also known as *person as godlike* – to be interpreted with no religious connotation). The former describes people's behaviors and actions as reflexive and involuntary; moreover, they are conducted without conscious awareness. The latter considers people like analysts who try to govern the environment through information, knowledge, and expectations. The first was based on the idea of *automatic response by individual* to internal needs and environmental stimuli; the second on the *voluntary response by individual*, analyzing internal and external information. (Weiner, 1991, 1992)

While most of the modern motivation theories incorporates expectations in one form or another, and their role in influencing behavior, there is one aspect to take in consideration: the idea that the person as scientist metaphor assumes that people are perfectly rational when they are not. (Dawes, 1988) From that, new theories that considered the influence of emotionality on behavior and decision making emerged, and a greater emphasis on the environment outside the individual – *the social world* – arose.

The *person as judge* was born: an individual who looks for evidence in the behaviors of others, and for information on how people are perceived as responsible for events. (Weiner, 1991, 1992)

More recently, researchers suggested that people may have some basic and universal motivations. Some researchers proposed that motivations may be guided by social goals as well as economic goals (*self-interest motives*) (Cropanzano, Goldman, & Folger, 2005), others suggested that motivations are compelled by fear of our own mortality (*self-esteem motives*) (J. Greenberg, 2008). That you consider the self-interest or self-esteem motives the dominant theory to describe people's motivations, we can affirm that the current view on motives is more socially and emotionally oriented, and that the interpretation of people's behaviors is central to justify motivations.

2.3.2 Measuring performance and productivity

The evolution of motivational theories also brought new models to measure performance and productivity, involving expectations, goals, and feelings of competence. A recent example of these new models is the *ProMES* (Productivity Measurement and Enhancement System), developed by Robert Pritchard in 1995. The model asserts that, if an individual increases the amount of time and effort that he devotes to a task, the outcome is higher levels of personal performance and thus also the productivity for the company will increase. (Pritchard, 1995)

2.3.3 Connection between personality and work motivation

The connection between personality and work motivation is very important; even though, in the past, theories did not take into consideration (or, at least, they were not based on) individual differences and characteristics of personality. Thus, theories abandoned the *one-size-fits-all* approach to use a more *individual* one, linking personal differences and characteristics to motivation.

Judge and Ilies found the strong and consistent relationships between personality characteristics and performance motivation. They discovered that *neuroticism* was consistently negatively related to performance motivation and *conscientiousness* was positively related to all indicators of performance motivation. Thus, conscientious and emotionally stable (the opposite of neurotic) individuals are more likely to believe that through hard work and their abilities they will accomplish also challenging goals. (Judge & Ilies, 2002)

Moreover, Kanfer and Ackerman, following the natural evolution of cognitive abilities and personality change in the life of humans, affirm that also motivation and performance will change over time. (Kanfer & Ackerman, 2004) Furthermore, Xenikou conducted research among Greek managerial and nonmanagerial employees and she discovered a positive relationship between an optimistic view of life (called *positive attributional style*) and work motivation. Additionally, Xenikou found that this optimistic view declines after four years with the same organization. (Xenikou, 2005)

Thomas W. H. Ng, Kelly L. Sorensen, and Lillian T. Eby conducted a meta-analysis of the relationships between *locus of control* (LOC)[5] and motivation and discovered a clear and positive connection between an internal LOC and work motivation. In other words, people with an internal LOC feel they can control their destiny. (Ng, Sorensen, & Eby, 2006)

2.4 Employee engagement

Employee engagement is, above any doubt, an important topic in the Human Resources and Management academic literature, and the same is for practitioners of those fields. It is true not only because engaged employees increase companies' performance, having an engaging culture could also help companies attract talents and lower employee turnover. (Martin & Hetrick, 2006)

Moreover, the recent switch of working life expectations to a no more *one-job-for-life* (for many employees) and the expectation of several short-term commitments (to gain experience to move on, and often with jobs that are not satisfying) make even harder to handle employees' engagement. (Bates, 2004)

2.4.1 Defining engagement

Despite that, already in 2004, Mike Johnson wrote <*the ability to engage employees, to make them work with our business, is going to be one of the greatest organizational battles of the coming 10 years*> (p. 1) (Johnson, 2004), there is no a clear definition of engagement and, for example, researchers and practitioners use several different ones. (Soldati, 2007)

Some examples of the different definitions of engagement can be found in the report *Employee Engagement: A Review of Current Thinking* by Gemma Robertson-Smith and Carl Markwick. The findings about the different definitions of the two authors are summarized next. (Robertson-Smith & Markwick, 2009)

- Company definitions

For the companies analyzed in the research, engagement is referred to as *an outcome*, something that employees provide. Frequently, the engagement was referring to attachment, commitment, or loyalty to the company. Indeed, several organizations referred to an engagement employee as a supporter, showing pride and loyalty for the organization's value and goals. Lastly, almost no companies saw engagement as a reciprocal relationship, and referred to what the employer could do to enable engagement.

[5] Locus of control is the people's beliefs about what determines (i.e., have control) over their lives. People with an internal locus of control tends to believe that events result from their own actions (i.e., having the ability to influence events); at the opposite, people with an external locus of control tends to believe their lives as dependent by external factors (i.e., having little or no ability to influence events). (Rotter, 1954)

- Academic definitions

From the academic literature on engagement, Robertson-Smith and Markwick found that definitions about engagement was also focused on its outcome (like attachment, commitment, and loyalty), even if there was a more attention on psychological aspects (i.e., psychological state of engagement). Moreover, to the outcome of engagement seen in definitions provided by companies – doing job with energy, and being absorbed, to cite some –, there were also other outcomes like being innovative and adopting changes.

Lastly, in academic definitions were present the two-way beneficial relationship between employer and employee that was missing in company definitions, even if it continues to not be present anything related to what an employer could do in practice to foster the state of engagement and to deliver its outcomes.

- Consultancy and research institute definitions

Similar to what was found for company and academic definitions, also in the definitions by consultancy and research institutes we can see engagement as a (psychological) state *of the employee with several outcomes (i.e., benefits) for the employer*; adding to that, there is the aspect of what companies can do to improve engagement of their employees.

The definitions found by Robertson-Smith and Markwick contained or referred to several employees' needs:

- The alignment of the individual or team performance with organizational objectives.
- Employees' awareness of their contribution to something worthwhile and meaningful.
- Belonging to companies with cultures that value, encourage and respect employees, and that listen to and understand their needs.
- Feeling safe and secure to be themselves without fear of repercussions.

2.4.2 Outcomes of engagement

In the literature we can find several potential individual and organizational outcomes of engagement at work.

- Customer loyalty

Studies suggest that an engaged workforce can lead to customer loyalty, because engaged employees seem to have a better understanding of customer needs and how to meet them. Furthermore, this can also bring to a strong emotional connection between customer and company, defined in the literature as *customer engagement*. (Bates, 2004; Levinson, 2007b)

- Employee retention

There is also a connection with employee retention and work engagement, with researches suggesting that engaged employees will stay with their company, even if companies are experiencing difficulties. (Demourouti, Bakker, Nachreiner, & Schaufeli, 2001; Levinson, 2007b)

- Employee productivity

Positive correlation between employee engagement and employee productivity can be found in several papers; with engagement also described like *a force* that motivates for better performance. (Kahn, 1990; Lockwood, 2007; Macey & Schneider, 2008; *Playing to Win in a Global Economy: Global Strategic Rewards Report and United States Findings*, 2007)

Furthermore, Balain and Sparrow added some complexity to the correlation between employee engagement and performance. They defined a *linear correlation* as too simplistic to explain the correlation, adding also that the surveys used to estimate the correlation, instead of evaluating the causes, measured the symptoms of performance. (Balain & Sparrow, 2009)

2.4.3 Variations in engagement

What is interesting is that engagement does not remain constant in individuals over time, neither it is equal between them. Moreover, not only work-related factors but also biographical and personality characteristics can have an impact on level of engagement. (Balain & Sparrow, 2009; Robinson, Hooker, & Hayday, 2007)

The Robinson, Hooker and Hayday's study (Robinson et al., 2007) revealed the impact of personal characteristics – like gender, age, ethnicity, disability, and caring responsibilities – on the level of engagement. Their investigation, identified the following impacts:

- Gender – Women appeared slightly more engaged than men in some organizations.
- Age – Engagement was highest in those under 20 years old and those 60 years plus, but dropped between 20 and 39 years old, before climbing again.
- Ethnicity – Ethnic minority groups reported slightly higher engagement levels than their white counterparts.
- Disability – Generally, disabled individuals reported higher engagement than those without a disability or medical condition.
- Caring responsibilities – Overall, those with adult caring responsibilities had the lowest engagement levels with their organization, whilst those who cared for both adults and children had the highest.

Furthermore, it seems that there is no evidence of any correlation between the level of engagement and the company's sector. In other words, working for a public or private company does not have any

relevance on the level of employee engagement. (Robinson et al., 2007; Sinclair, Robertson-Smith, & Hennessy, 2008)

Lastly, studies highlighted the strong importance on the engagement of individuals' expectations; the more employees do something they consider worth investing themselves in it, the more the impact of engagement is high. (Johnson, 2004)

2.4.4 Drivers and barriers to engagement

It is difficult, like for defining engagement, to identify one (or even some) clear drivers for engagement. It is not only difficult to find clear definitions in the literature; engagement is a complex aspect of human life, and it is determined by some different aspects. Moreover, also after having a clear idea of what contributes to engagement, it is difficult to determine the contribution of the different drivers of engagement. The same also applies to determining barriers to engagement.

2.4.4.1 Drivers

One example of this variation is found at the Conference Board (its report *Employee Engagement: A Review of Current Research and Its Implications* (Gibbons, 2006)), where 26 different drivers were proposed for engagement. The most common drivers proposed were the following:

- trust and integrity,
- the nature of the job,
- the line-of-sight between individual performance and company performance,
- career growth opportunities,
- pride in the company,
- relationships with co-workers/team members,
- employee development and the personal relationship with one's manager.

Similar conclusions can be found in other studies too. For example, the Lockwood's study (Lockwood, 2007) – leveraging employee engagement for competitive advantage: HR's strategic role – suggests the following as influencers of engagement:

- the culture of the organization,
- its leadership,
- the quality of communication,
- the styles of management,
- levels of trust and respect,
- the organization's reputation.

The principal themes on employee engagement available in the literature are:

- Work environment

  Organizations, where employees feel respected and valued, are more likely to have high levels of engagement. (Glen, 2006; Leary-Joyce, 2004; Lockwood, 2007)

  Moreover, it seems essential to companies to have a good internal communication, a cultural of innovation, and high level of integrity, for having higher engagement levels. (*Driving Performance and Retention Through Employee Engagement*, 2004)

  Furthermore, the three key aspects to keep in consideration for employee engagement seem to be *the work* (like purpose and meaning and clear goals), *the manager* (like good communication skills, respect for employees, fairness, and clear feedback), and *the autonomy* (like feeling of being in control, having the skills to achieve objectives, and the work as important).

- Management style

  The management consulting company Gallup found in its surveys that near 70% of the variance in employee engagement level inside a team can be ascribed to its manager. (Gallup, 2021)

  Some management characteristics (like good and clear communication) seem to have an impact on employee engagement. (*Driving Performance and Retention Through Employee Engagement*, 2004; Macey & Schneider, 2008)

  In particular, it seems to exist a high correlation between employee engagement and the level of clarity and realistic goals that managers set, their performance expectations, and their flexibility to adapt to different situations. (Dulye, Grossman, Quinlan, & Vanstone, 2007)

  Lastly, a study performed in several countries (including Australia, Brazil, Canada, China, India, the Netherlands, Russia, Saudi Arabia, United Kingdom) by the Kenexa Research Institute suggests four *universal* drivers of employee engagement – all related to traits of managers: inspire confidence for the future; respect and appreciation for employees; assign interesting and reasonable tasks; show a real responsibility to both employees and communities. (*Engaging The Employee: A Kenexa Research Institute World Trends Report*, 2008)

- Corporate Social Responsibility

  A few studies suggest a positive correlation between a genuine commitment Corporate Social Responsibility (CSR) and a corporate's ethical behaviors and values and employee engagement. In companies with a real commitment to CSR, it is expected to see higher levels of engagement; where that commitment is false – or also not completely perceived as real from employees – the levels of engagement are lower. (Levinson, 2007a; J. J. Smith, 2007)

- Training received

  Interestingly, studies seem to suggest that the level of employee engagement in companies where employees receive training and development opportunities is higher. (*The Practitioner's Guide to: essential techniques for employee engagement*, 2007; Robinson, 2007; Robinson et al., 2007)

- Flexible work

  Another important factor to employee engagement improvement seems to be a work-life balance: in companies with a good balance of working and personal life, it is possible to find higher levels of engagement and, at the same time, higher staff retention rate. (Johnson, 2004; Lockwood, 2007)

In Kahn's work, it is possible to find a positive correlation between high levels of engagement with three psychological conditions: *meaningfulness*, *safety*, and *availability*. The latter is to be intended as *time available* for work, at the opposite of time spent on leisure or, more in general, on personal activities. The idea was that spending time on activities outside the workplace could diverge someone's energy away from the company and thus lower the engagement level. Moreover, in according to the research, the level of engagement varies according to perception of the employees on benefits and resources they believe to have and receive. (Kahn, 1990)

Furthermore, it is important to say that, even if the level of engagement depends on the *time available* to work, at the same time, it is essential to recover energies used on work's tasks and to spend time off from work (even if done occasionally) to keep engagement level high. (Sonnentag, 2003)

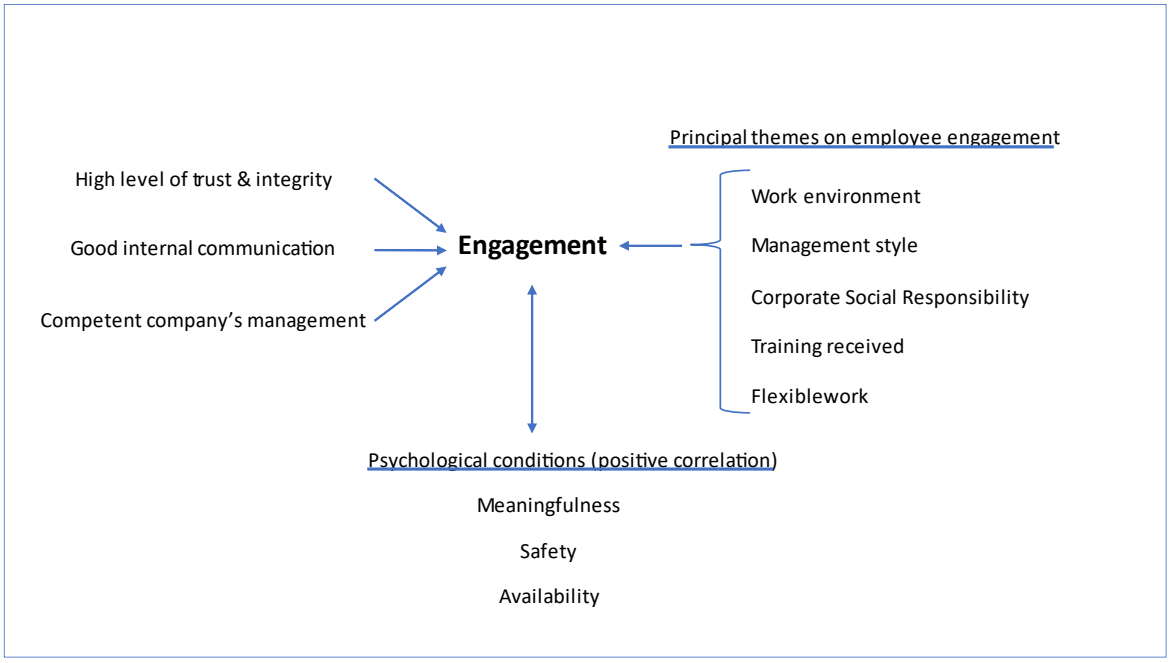

Figure 1 – Engagement Drivers

2.4.4.2 Barriers

In the literature, it is possible to find several studies that focus on barriers to employee engagement:

- bureaucracy and heavy workload, (Lockwood, 2007; Sinclair et al., 2008)
- job insecurity, (Purcell, 2009)
- unfairness, (Purcell, 2009)

- jobs with no space (like repetitive work with short cycle times), (Purcell, 2009)
- highly stressful jobs with very little flexibility or autonomy, (Purcell, 2009)
- poor line management behavior and bullying (like lack of trust), (Purcell, 2009; *The State of Employee Engagement*, 2008)
- working for long periods of time without a break, (Purcell, 2009)
- lower individual's availability at work. (Kahn, 1990; May, Gilson, & Harter, 2004)

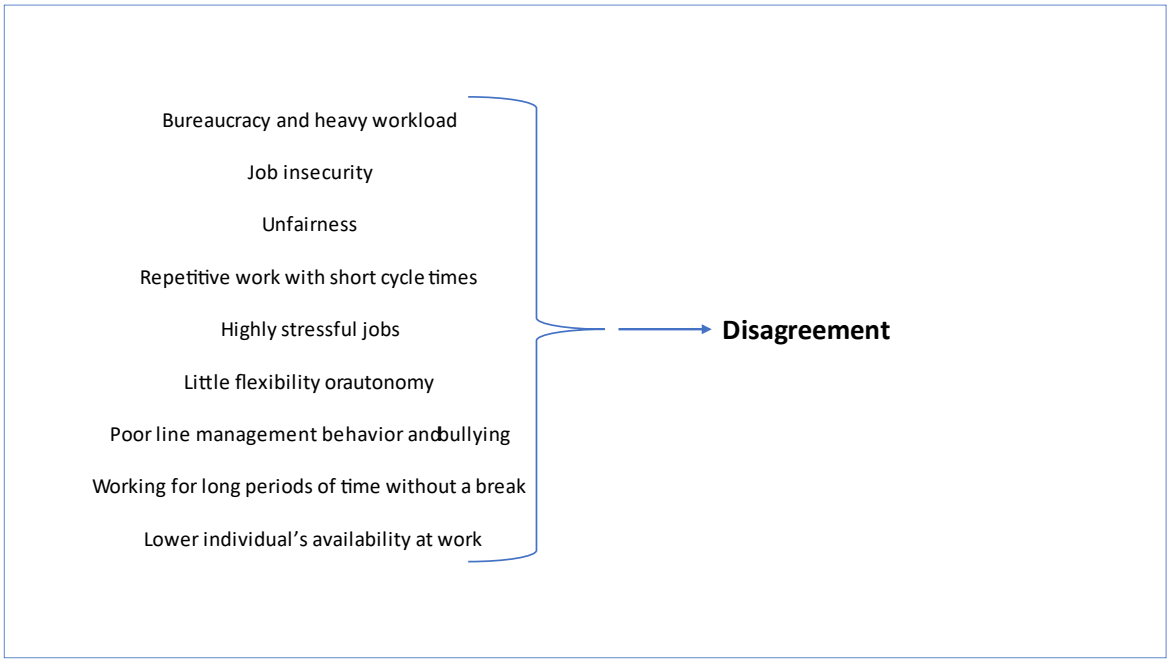

Figure 2 – Engagement Barriers

2.4.5 A chronological literature review of the main theories

Kahn (Kahn, 1990)

Kahn is considered the father of employee engagement; starting from Goffman's work, he developed the concept of employee engagement. He suggested that there are three psychological conditions related to employee engagement (and disengagement):

- meaningfulness,
- safety at work,
- psychological availability at work.

Harter, Schmidt, and Hayes (Harter, Schmidt, & Hayes, 2002)

Harter, Schmidt, and Hayes conducted a study contacting 7,939 business units in 36 companies and found a link between engaged employee and productivity.

Moreover, they established that the drivers of employee engagement are:

- employee well-being,
- positive workplace.

Harter, Schmidt, and Killham (Harter, Schmidt, & Killham, 2003)

Harter, Schmidt, and Killham conducted a survey on employee engagement, job satisfaction and business level performance, and building on it they hypothesized that the main indicator of companies' performance growth and sustainability was the quality of their human resources teams.

Furthermore, they observed, as the drivers of employee engagement, the following:

- clarity in expectations,
- resources,
- opportunity at work,
- recognition,
- caring,
- encouragement,
- opinion honoring,
- mission clarity,
- quality commitment,
- congenial environment,
- feedback.

Loehr (Loehr, 2005)

Loehr sustains that via engagement both the employee and the employer receive benefits. With engaged employees, a company obtains higher productivity, employee retention, and an increase of the bottom line of the organization. The discovered personal engagement drivers are:

- enthusiasm,
- greater value to the employer,
- improved physical health,
- happiness.

Saks (Saks, 2006)

Saks conducted a study on organizational and job engagement, interviewing 102 employees from different companies and roles, with the following characteristics: average age 34 years; 60% were female; 12 years of average work experience.

The study showed that perceived organizational support predicts both job and organization engagement; moreover, the following were discovered as driver of employee engagement:

- job satisfaction,
- organizational commitment,
- job characteristics,
- organizational citizenship.

Cawe (Cawe, 2006)

Cawe made research about employee engagement focusing on South Africa, and found as factors that have more impacts on employee engagement the following:

- leadership and management style,
- talent management,
- communication and knowledge sharing,
- organizations reputation and branding.

Seijts and Crim (Seijts & Crim, 2006)

Seijts and Crim support the idea that it is imperative for leaders to identify the level of employee engagement in their organization and, with their work, they presented a series of strategies that could help increase and keep high the levels of engagement. They called the selected ten parameters to be implemented over the company the '*The Ten Cs of Employee Engagement*':

- connection,
- career development,
- (vision) clarity,
- conveying feedback,
- congratulating performance,
- (recognition of) contribution,
- control over jobs,
- collaboration,
- credibility,
- confidence.

Stairs, Galpin, Page, and Linley (Stairs, Galpin, Page, & Linley, 2006)

Researchers suggest that even if the main aspect to consider in employee engagement is financial reward – with the latter employees could improve their lives, answering to Maslow's psychological, safety and belongings needs, and thus even tolerate poor work conditions – time is chancing, and

so financial reward is no more enough. Companies must understand and respond to their employees' needs for personal fulfillment and meaning. The research suggests as important drivers for employee engagement the following:

- organizational affiliation,
- autonomy and influence,
- work-work and work-life balance,
- opportunities for growth,
- role factors,
- reward culture,
- quality of relationships,
- quality of supervision and work culture,
- loyalty,
- performance- motivation.

Greenberg and Arakawa (M. H. Greenberg & Arakawa, 2006)

The two researchers interviewed 86 employees and 17 managers of firms in the Information Technology field to study the link between optimistic managers, productivity, and employee engagement. The study suggests that there is a positive correlation between positive leadership and employee engagement and performance.

Furthermore, the research suggests that engaged managers positively increase employees well-being and their engagement, generating more engaged employees and, at the same time, shaping a vibrant and productive workplace. Thus, the research supports as the drivers of employee engagement the following:

- optimism in the workplace,
- employee well-being,
- engaged managers.

Chen (Chen, 2007)

Chen researched on employee engagement in China contacting foreign invested companies in Shanghai; he found the factors that were positively linked to employee engagement were the following:

- financial rewards,
- participation in decision making process,
- job autonomy,

- performance feedback in task level resources.

Higgs (Higgs, 2007)

Higgs explored with his research the employee engagement through organization climate and financial rewards; these benefits are considered in relation to competitor's organizations ones and not in absolute terms.

Higgs suggested the following employee engagement:

- shared ownership,
- investment for development,
- positive climate and organizational culture,
- employee's immediate line manager,
- attractive financial rewards (good benefits compared to those of the competitor organizations).

Soldati (Soldati, 2007)

Soldati provided a review of the work published in 2006 by The Conference Board *Employee Engagement, A Review of Current Research and Its Implications*. In the report, definitions of employee engagement and studies on the matter from some top research firms (such as Gallup, Towers Perrin, Blessing White, the Corporate Leadership Council) were reported. Even if the definitions were different, and so the drivers of employee engagement, eight drivers were common for at least four of the studies. They are the following:

- trust and integrity (*How well managers communicate and 'walk the talk'*),
- nature of the job (*Is it mentally stimulating day-to-day?*),
- line of sight between employee performance and company performance (*Does the employee understand how their work contributes to the company's performance?*),
- career growth opportunities (*Are there future opportunities for growth?*),
- pride in the company (*How much self-esteem does the employee feel by being associated with their company?*),
- coworkers/team members (*Significantly influence one's level of engagement*),
- employee development (*Is the company making an effort to develop the employee's skills?*),
- relationship with one's manager (*Does the employee value his or her relationship with his or her manager?*).

Park and Rainey (Park & Rainey, 2008)

Park and Rainey conducted a study on the relation between political and administrative leadership with employee engagement, and they found the following drivers:

- quality of political leadership,
- administrative leadership.

Miller (Miller, 2008)

The study of Miller was focused on a specific company in the USA, asking its production employees to fill up a questionnaire with 12 questions developed by the Gallup Organization. The results supported the idea that employee engagement is a key driver for organizational prosperity (improving retention of best workers, customer loyalty, and performance of the whole company).

Moreover, the study suggested that employee engagement is supported by the following drivers:

- recognition,
- workplace culture,
- communication,
- managerial styles,
- trust and respect.

Townsend and Gebhardt (Townsend & Gebhardt, 2008)

The study analyzed the impact of top management's commitment and leadership style on employee engagement, and supported the following as its driver to engagement:

- commitment of top management,
- leadership style,
- employee involvement with a structure,
- communications,
- training,
- measurement and recognition,
- gratitude and celebration.

Wildermuth and Pauken (Wildermuth & Pauken, 2008)

The two researchers first made a literature review on employee engagement and then conducted pilot interviews with 10 professionals. The authors suggested the factors (environmental, leadership style, job characteristics and individual) heavily correlated with employee engagement:

- organizational leadership,
- job, and individual characteristic resilience,

- locus of control,
- active coping style,
- self-esteem,
- neuroticism and extraversion,
- ethical and trustworthy organization.

Bakker and Schaufeli (Bakker & Schaufeli, 2008)

The authors suggest that there are three stages of employee engagement:

- support and recognition from colleagues and supervisors, performance feedback, opportunities for using skills acquired,
- commitment and extra-role behavior,
- commitment is a positive and fulfilled motivational state of work-related well-being.

Macey and Schneider (Macey & Schneider, 2008)

Macey and Schneider suggested that there is a strong correlation between employee engagement and the improvement of the profitability of the organization.

Moreover, the researchers defined engagement as a psychological state.

The study suggests employee engagement is coming from one or all the following:

- job satisfaction,
- organizational commitment,
- psychological empowerment,
- job involvement.

Simpson (Simpson, 2009)

Simpson conducted a literature review on employee engagement in the context of nursing organization, business, and organizational psychology. The study identifies key drivers that are critical for engagement at work and divides them into:

- organizational factors,
- individual contributors.

Xanthopoulou, Bakker, Demerouti, and Schaufeli (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009)

The researchers made a study among 163 employees, who have been followed for an average of 18 months, to analyze the relationships between job resources, personal resources, and work engagement. They discovered that not only job resources and personal resources were positively correlated with work engagement, but also the way around (work engagement relates positively to job and personal resources). For this reason, in the study the reciprocal model has been used to describe the mutual correlation.

Moreover, the research showed that the correlation between job and personal resources is high, like the correlation is with work engagement. This conclusion, in conjunction with the work psychological models (that point the characteristics of work as the principal initiators of the process that brings to employee wellness), helped to clarify the sequence of the effects of the work-related well-being.

Reciprocal positive correlation of work engagement with:

- job resources,
- personal resources.

Southard (Southard, 2010)

The study was conducted to inquire about the relationship between employee engagement and patient satisfaction. The interviews were conducted among 111 employees (doctors, managers, nurses, and health care staff) and more than 1300 patients of a hospital.

The study compared the employee engagement (using hospital work-unit data) with patient satisfaction and the results were that engaged employees led to satisfied patients. Thus, the study introduces some interesting observations into the correlation of patient (*client*, more in general) satisfaction and the following:

- environmental influence,
- work-unit engagement.

Xu and Thomas (Xu & Thomas, 2011)

Xu and Thomas observed employees of an insurance firm of New Zealand to investigate the relationship between leader behaviors and worker engagement. The study shows that the strong drivers of employee engagement are the following:

- supports team,
- effective performance,
- integrity.

Gruman and Saks (Gruman & Saks, 2011)

The authors explored the link between employee management and performance management systems. The study supported engagement surveys as useful instruments to measure its level, but also showed some limitations surveys have. From those, the study proposed some interesting thoughts about the employee engagement.

First, a better approach to improve employee engagement is based on a personal approach to each employee, instead of an aggregate one equal to all the company.

Second, measures to improve employee engagement are more effective when are not isolated but integrated and connected with companywide initiatives and supported and implemented by different parts and departments of the company.

Moreover, the authors support the idea that a more effective way to improve (and manage) employee engagement is to manage it in the same way job performance is governed. Thus, they suggest that there are three phases of employee engagement (and performance management): performance agreement; engagement facilitation; performance management.

- work conditions,
- integrated systems,
- accountability.

Slatten and Mehmetoglu (Slåtten & Mehmetoglu, 2011)

The two researchers studied a sample of 279 selected from frontline employees of the hospitality industry.

The study revealed the close link of employee engagement with employees' innovative behavior. Thus, the study also showed the importance for managers to measure and improve the engagement of employees because it is a major driver of innovative behavior.

The main drivers of employee engagement are the following:

- perceptions of role benefit,
- job autonomy,
- strategic attention.

Shuck, Rocco, and Albornoz (Shuck, Rocco, & Albornoz, 2011)

The study was conducted in a large multinational service company, named as one of the best places to work for.

From the study, the following resulted as the main engagement drivers:

- relationship development and attachment to co-workers,
- workplace climate,
- opportunities for learning.

Moreover, the study showed as improvement drivers for employee motivation and engagement also:

  - good relationship between co-workers and with direct line manager,
  - organization culture,
  - learning facility.

Robertson, Birch, and Cooper (Robertson, Birch, & Cooper, 2012)

The study analyzed the impact of psychological well-being on employee engagement and productivity, with a sample of 9000 from 12 different companies in the UK, from several industries and from both private and public sector. The study shows the positive impact on work performance by the psychological employees' well-being. Furthermore, the study found that employees with high psychological well-being were healthier (mentally and physical), and lived longer, happier, and productive lives.

- psychological well-being.

Men (Men, 2012)

The author inquired the relationship of corporate leadership and organizational reputation with employee engagement. He surveyed a sample size of 157, from 500 fortune companies.

The research illustrated the positive impact of CEO's image and organizational reputation to employee engagement. These are defined as the employee's perceived evaluation of the CEO and the company over time. The evaluation, and so the drivers of employee engagement, are based on the following aspects:

- emotional appeal,
- products and services quality,
- financial performance,
- vision and leadership,
- work environment,
- social responsibility.

Menguc, Auh, Fisher, and Haddad (Menguc, Auh, Fisher, & Haddad, 2013)

The researchers analyzed a sample of 482 in Canadian retail sector to study the impact of supervisory and autonomy on employee engagement. Furthermore, the study revealed that engaged employees can lead to satisfied customers.

The following factors have a positive impact on employee engagement:

- supervisory support,
- perceived autonomy.

Choo, Mat, and Al-Omari (Choo, Mat, & Al-Omari, 2013)

The study investigated the impact on employee engagement by organizational practices; the sample size of 97 was from a multinational company in the electronics sector in Malaysia.

It revealed that the following aspects increase the employee engagement:

- organization practice,
- organizational communication,
- reward and recognition,
- employee development.

Bedarkar and Pandita (Bedarkar & Pandita, 2014)

The study inquired the employee engagement drivers and the impact of engagement on employee performance and well-being in organizations.

It identifies as drivers of employee engagement the following three:

- communication,
- work-life balance,
- leadership.

Rana, Ardichvili, and Tkachenko (Rana, Ardichvili, & Tkachenko, 2014)

The authors studied the drivers of employee engagement from the Human Resources point of view, in the USA.

- job design and characteristics,
- supervisor and co-worker relationships,
- workplace environment.

Kaliannan and Adjovu (Kaliannan & Adjovu, 2015)

The study was conducted in Ghana, querying companies in the telecommunication sector.

It reveals the following as the driver for employee engagement:

- talent management practices.

Nair and Salleh (Nair & Salleh, 2015)

The study was conducted in Malaysia.

It shows the following aspects as catalyst for employee engagement:

- appraisal justice,
- trust.

Taneja, Sewell, and Odom (Taneja, Sewell, & Odom, 2015)

The authors studied the relationship between employee engagement and the role of managers in a global context.

The study proposes the following aspects as the global drivers of employee engagement:

- invest in corporate social responsibility,
- focus on customer,
- supporting workplace for democracy,
- work-life balance,
- rewarding culture.

Hanaysha (Hanaysha, 2016)

The researcher investigated employee engagement attributes at public universities in northern Malaysia.

The study supports the following as drivers of employee engagement:

- organizational learning,
- adopting effective human resources practices.

Whiteoak and Mohamed (Whiteoak & Mohamed, 2016)

The study was conducted in Australia, among 27 supervisors and 207 frontline workers from companies in the asphalt and pavement industry, to inquiry the relationship between safety and employee engagement.

The result of the study is that employee engagement is linked directly with:

- workplace safety.

Kwon, Farndale, and Park (Kwon, Farndale, & Park, 2016)

The study was conducted in the USA.

It supports the idea that employee engagement is influenced by the following:

- degree of power distance,
- extent of empowering leadership,
- participation and quality of relationship between employee and supervisor.

Al Mehrzi and Singh (Al Mehrzi & Singh, 2016)

The study was conducted in the public sector of the UAE.

It finds that employee engagement is directly impacted by the following factors:

- leader,
- team,
- perceived organizational support,
- organizational culture.

Bandura, and Lyons (Bandura & Lyons, 2017)

The study explored the relationship of employee engagement with skill building; it was conducted in the USA.

The paper shows that the coming actions have a direct positive impact on employee engagement:

- honoring the voices of employees about their want,
- understanding what employees want to learn.

Gawke, Gorgievski, and Bakker (Gawke, Gorgievski, & Bakker, 2017)

The study, conducted in the Netherlands, explored the connections of employee intrapreneurship with employee engagement.

The result is that employee engagement is directly and positively impacted by:

- development of intrapreneurship skills.

Saks (Saks, 2017)

The study, conducted in the USA, analyzed the factors that generate employee engagement. The results showed the importance of not stopping at the research of engagement's levels in organizations, but also applying structured strategies to employee engagement.

Thus, the research supports the importance to improve the employee engagement of:

- structural approach to generate engagement,
- removal of engagement barriers:
    - *The Engagement Definition Barrier,*
    - *The Engagement Referent Barrier,*
    - *The Engagement Measurement Barrier,*
    - *The Engagement Driver Barrier,*
    - *The Engagement Strategy Barrier.*

Sievert and Scholz (Sievert & Scholz, 2017)

The authors explored employee engagement in Germany.

They suggest, for improving employee engagement, the use of:

- social tools in organization's internal communications.

Ruck, Welch, and Menara (Ruck, Welch, & Menara, 2017)

The paper is a study on the relationship of an organizational communication system with employee engagement; it was conducted in the UK, with a sample size of 2066.

It shows a direct link between employee engagement and the two successive aspects:

- organizational communication,
- recognition of employee voice.

The following table is a recap of the main contributions to the engagement from the literature in chronological order.

Year	**Author(s)**	***Main contribution to***
1990	Kahn (Kahn, 1990)	Psychological conditions related to employee engagement (and disengagement).
2002	Harter, Schmidt, and Hayes (Harter et al., 2002)	Drivers of employee engagement.
2003	Harter, Schmidt, and Killham (Harter, Schmidt, & Killham, 2003)	Drivers of employee engagement.
2005	Loehr (Loehr, 2005)	Personal engagement drivers.
2006	Saks (Saks, 2006)	Drivers of employee engagement.
2006	Cawe (Cawe, 2006)	Factors that have impact on employee engagement.
2006	Seijts and Crim	Strategies to increase employee engagement.

	(Seijts & Crim, 2006)	
2006	Stairs, Galpin, Page, and Linley (Stairs et al., 2006)	Drivers of employee engagement.
2006	Greenberg and Arakawa (M. H. Greenberg & Arakawa, 2006)	Drivers of employee engagement.
2007	Chen (Chen, 2007)	Factors that were positively linked to employee engagement.
2007	Higgs (Higgs, 2007)	Drivers of employee engagement.
2007	Soldati (Soldati, 2007)	Drivers of employee engagement.
2008	Park and Rainey (Park & Rainey, 2008)	Drivers of employee engagement.
2008	Miller (Miller, 2008)	Drivers of employee engagement.
2008	Townsend and Gebhardt (Townsend & Gebhardt, 2008)	Drivers of employee engagement.
2008	Wildermuth and Pauken (Wildermuth & Pauken, 2008)	Factors heavily correlated with employee engagement.
2008	Bakker and Schaufeli (Bakker & Schaufeli, 2008)	Stages of employee engagement.
2008	Macey and Schneider (Macey & Schneider, 2008)	Drivers of employee engagement.
2009	Simpson (Simpson, 2009)	Key drivers that are critical for engagement.
2009	Xanthopoulou, Bakker, Demerouti, and Schaufeli (Xanthopoulou et al., 2009)	Reciprocal positive correlation of job resources and personal resources with work engagement.
2010	Southard (Southard, 2010)	Employee engagement and patient satisfaction.
2011	Xu and Thomas (Xu & Thomas, 2011)	Relationship between leader behaviors and worker engagement.
2011	Gruman and Saks (Gruman & Saks, 2011)	The link between employee management and performance management system.
2011	Slatten and Mehmetoglu (Slåtten & Mehmetoglu, 2011)	The link of employee engagement with employees' innovative behavior.
2011	Shuck, Rocco, and Albornoz (Shuck et al., 2011)	Main engagement drivers.
2012	Robertson, Birch, and Cooper (Robertson et al., 2012)	The positive impact on work performance by the psychological employees' well-being.
2012	Men (Men, 2012)	The relationship of corporate leadership and organizational reputation with employee engagement.
2013	Menguc, Auh, Fisher, and Haddad (Menguc et al., 2013)	The impact of supervisory and autonomy on employee engagement.
2013	Choo, Mat, and Al-Omari (Choo et al., 2013)	The impact on employee engagement by organizational practices.

2014	Bedarkar and Pandita (Bedarkar & Pandita, 2014)	The employee engagement drivers and the impact of engagement on employee performance and well-being in organizations.
2014	Rana, Ardichvili, and Tkachenko (Rana et al., 2014)	The drivers of employee engagement from the Human Resources point of view.
2015	Kaliannan and Adjovu (Kaliannan & Adjovu, 2015)	The driver for employee engagement.
2015	Nair and Salleh (Nair & Salleh, 2015)	Catalyst for employee engagement.
2015	Taneja, Sewell, and Odom (Taneja et al., 2015)	The relationship between employee engagement and the role of managers in a global context.
2016	Hanaysha (Hanaysha, 2016)	Employee engagement attributes at public universities.
2016	Whiteoak and Mohamed (Whiteoak & Mohamed, 2016)	The relationship between safety and employee engagement.
2016	Kwon, Farndale, and Park (Kwon et al., 2016)	Factors influencing employee engagement.
2016	Al Mehrzi and Singh (Al Mehrzi & Singh, 2016)	Factors impacting employee engagement.
2017	Bandura, and Lyons (Bandura & Lyons, 2017)	The relationship of employee engagement with skill building.
2017	Gawke, Gorgievski, and Bakker (Gawke et al., 2017)	The connections of employee intrapreneurship with employee engagement.
2017	Saks (Saks, 2017)	The factors that generate employee engagement.
2017	Sievert and Scholz (Sievert & Scholz, 2017)	The use of social tools for improving employee engagement.
2017	Ruck, Welch, and Menara (Ruck et al., 2017)	The relationship of an organizational communication system with employee engagement.

Table 1 – Chronological literature review of the main contributions to engagement

2.4.6 Measuring the engagement

Engagement of employees is a construct that is possible to measure, and there are several different tools (surveys) that have been developed to evaluate it. Many surveys have been developed by organizations' Human Resources departments (aiming to measure levels of engagement in the organization), other by large consultancy corporations (aiming to collect data about engagement levels from various companies and benchmark them).

Unfortunately, the unclear definition of engagement leads to different elements used by each company to evaluate it. Thus, employee engagement measurement is not unique among the various tools used for its evaluation.

For this reason, any company interested in measuring and confronting its level of employee engagement should decide between a *standard* tool, and use it for comparing and benchmarking its results

with the ones from other companies, and a *customized* tool, that is the best option for all the reasons except benchmarking its own results with others from different organizations. (Robinson et al., 2007)

Moreover, in regarding to the best frequency to measure employee engagement's level, Bates suggests that it is not of great importance the recurrence of providing surveys on engagement. For example, if a company is more interested on major trends on employee engagement, it could provide surveys to its employees on a yearly base; instead, if it is interested on measuring smaller adjustments in engagement, it could deploy surveys on a monthly base. Instead, what is important under the effectiveness of surveys is that they should ask questions that could lead to specific solutions and demonstrate a long-term commitment by the company to improve the employees' experience at workplace. (Bates, 2004)

2.4.6.1 List of employee engagement tools (in alphabetic order of author's name; not exhaustive)

OLldenburg Burnout Inventory (OLBI) (Demerouti, Bakker, Vardakou, & Kantas, 2003)

> Despite the OLBI scale has been developed to be used in determining the presence of the burnout syndrome, Christian, Garza, and Slaughter also used it to estimate the level of employee engagement. The researchers supported their selection mentioning three reasons: <*First, the scale refers to the performance of the work itself, in terms of identification with and emotions towards the task. Second, the items for disengagement are written to reflect both ends of the engagement continuum rather than only disengagement, consistent with many other measures of work engagement. Third, burnout is widely recognized as a construct consisting of the three dimensions of exhaustion, cynicism, and reduced efficacy, which are not reflected in the OLBI disengagement subscale.*> (p. 91). (Christian, Garza, & Slaughter, 2011)
>
> The number of questions proposed to employees could vary, and the framework is commonly used with eight questions.
>
> Sample of questions are:
>
> - I get more and more engaged in my work.
> - I find my work to be a positive challenge.
> - I always find new and interesting aspects in my work.

E3 by Development Dimensions International (DDI) (Popli & Rizvi, 2016)

> The framework was developed by Development Dimensions International (an international consultancy firm based in the USA with a focus on Human Resources and leadership development). It is composed of a survey with 20 questions, where each question goes from 'strongly agree' to 'strongly disagree'. The framework has been used extensively and it has also proved its validity and reliability.

Gallup Workplace Audit (Gallup Q12 or GWA) by Gallup, Inc. (Gallup; Harter, Schmidt, & Keyes, 2003)

The firm conducted hundreds of qualitative and quantitative assessments about management practices, across a wide variety of industries (more than 50 diverse industries). The global analytics and advice firm's studies on employee engagement culminated in the development of the *Q12* survey (or *Gallup Workplace Audit*) composed by 12 questions. Moreover, the study of successes in organizations – in place of the study of failures – was at the center of the methodology of the research.

Additionally, the Gallup's employee engagement framework is based on a hierarchy of employees' development needs: basic needs, individual contribution, teamwork, and growth; furthermore, each of the questionnaire 12 items is created to fit a specific level of development needs and assess it.

Lastly, for each answer, the framework comes with detailed explanation of the measure, comparison with other companies, and examples of actions that companies and managers can follow to improve the company's employee engagement level.

Questions are:

- For basic needs:
    - I know what is expected of me at work.
    - I have the materials and equipment I need to do my work right.
- For individual contribution:
    - At work, I have the opportunity to do what I do best every day.
    - In the last seven days, I have received recognition or praise for doing good work.
    - My supervisor, or someone at work, seems to care about me as a person.
    - There is someone at work who encourages my development.
- For teamwork:
    - At work, my opinions seem to count.
    - The mission or purpose of my company makes me feel my job is important.
    - My associates or fellow employees are committed to doing quality work.
    - I have a best friend at work.
- For growth:
    - In the last six months, someone at work has talked to me about my progress.
    - This last year, I have had opportunities at work to learn and grow.

IES Engagement Survey (Institute for Employment Studies) (Robinson et al., 2007)

Institute for Employment Studies (IES) is a not-for-profit organization which aim is to help improve employment policy and Human Resource management. It acts as an independent international

center of research and provides consultancy service free from any political and organizational influence.

The survey is composed of 12 attitudinal statements (it is available also a shorter version of the survey, with only five of them – marked below with an asterisk "*"). The 12 items are scored on a scale from 1 (strongly disagree) to 5 (strongly agree).

Questions are:

- I speak highly of this organization to my friends. *
- I would be happy for my friends and family to use this organization's products/services. *
- This organization is known as a good employer.
- This organization has a good reputation generally.
- I am proud to tell others I am part of this organization.
- This organization really inspires the very best in me in the way of job performance. *
- I find that my values and the organization's ones are very similar.
- I always do more than is actually required.
- I try to help others in the organization whenever I can. *
- I try to keep abreast of current developments in my area.
- I volunteer to do things outside my job that contribute to the organization's objectives. *
- I frequently make suggestions to improve the work of my team/department/service.

Employee Engagement Reflective Scale by JRA (Benn, Teo, & Martin, 2015)

The reflective scale on employee engagement was developed by JRA to evaluate employee engagement levels in New Zealand and Australia.

Not dissimilar to other scales in its core, the JRA reflective scale asks interviewed employees to rate their answers between the range of 1 (completely agree) and 7 (completely disagree): lowest scores express highest levels of employee engagement.

The elements of the scale are:

- I look for ways to do my job more effectively.
- I feel inspired to go the extra mile to help this organization succeed.
- I feel a sense of commitment to this organization.
- Overall, I would recommend this organization as a great place to work.

William A. Kahn's scale (Kahn, 1990)

Many researchers based their studies on the work made by Kahn (Kahn, 1990); simply adopting his scale or adapting and modifying the scale to their own needs.

The author developed 24 open-ended questions to analyze the respondents' feelings about their experience, engagement (or disengagement), and their role.

Questions are:

- Why did you choose to become a counselor?
- Are you comfortable here on the island itself, and with the people?
- Do you like being a member of a camp system as a counselor?
- Do you enjoy being with kids generally and these kids in particular?
- What do you like most about being a counselor here, and why?
- What aspects of being a counselor here are personally and emotionally involving for you? What really grabs you, involves more of you than other roles you've held?
- How would an observer like me be able to see your personal involvement? What does it look like?
- What do you dislike most about being a counselor here, and why?
- What aspects of being a counselor here are personally and emotionally uninvolving, that is, just turn you off so you are working automatically?
- How would an observer like me be able to see that uninvolvement? What does it look like?
- How do you find the demands of the counselor role?
- How much control and autonomy do you have here?
- How challenging do you find your role and its demands?
- When can you coast through the work? When do you have to really stretch?
- How do you like the way that your role is designed?
- For what behaviors are you rewarded here, and what are those rewards?
- How free are you to perform the role as you wish, at your own pace and style?
- Where are you in the hierarchy? Do you feel in the center here?
- How do you find working within your particular activity?
- What is your relationship to the camp management, personally and professionally?
- What emotional support systems do you have here at camp?
- How much do you want to be personally and emotionally engaged here?
- How is that involvement influenced by your physical and emotional energy?
- How does the staff group influence your role performances?

The Employee Engagement Scorecard (Kumar & Pansari, 2015)

The researchers developed the scorecard (and tested its validity and reliability) studying data from 208 managers at 52 companies. They also applied the framework to 75 companies (from North America, Europe, and Asia).

The framework is based on the idea that the organization's level of employee engagement is directly determined by the aggregation of the employee components: employee satisfaction, employee identification, employee commitment, employee loyalty, and employee performance.

The scorecard shows five scales of the five employee engagement components, with data collected asking employees to provide an evaluation of each of them using a range from 1 (the lowest) to 5 (the highest). The minimum possible amount for the entire scorecard is 20, the maximum is 100.

Companies with scores of 20 to 39, disengaged companies, need to focus their attention to all the components of the employee engagement. The companies with scores of 40 to 59, somewhat engaged companies, have some employee engagement factors that need immediate attention; the companies with scores of 60 to 79, engaged companies, have a good level of engagement overall and have some areas that could be still improved. Lastly, the companies with scores of 80 to 100, highly engaged companies, show a high level of engagement all over the company.

With the Employee Engagement Scorecard companies can easily determine the aspects of employee engagement that require more attention and implement specific actions to improve them.

The components of the Employee Engagement Scorecard (in parentheses the number of the elements evaluated for each component):

- Employee Satisfaction (#5)
    - Receives recognition for a job.
    - Feels close to people at work.
    - Feels good about working at this company.
    - Feels secure about job.
    - Believes that the management is concerned about employees.
- Employee Identification (#7)
    - Proud to tell others about employment.
    - Feels a sense of ownership.
    - Feels a sense of pride.
    - Views the success of the brand as his own.
    - Treats organization like family.
    - Says "we" rather than "they".
    - Feels like it's a personal compliment when the brand is praised.
- Employee commitment (#3)
    - Commitment to deliver the brand promise increases along with knowledge of the brand.
    - Very committed to delivering the brand promise.

    - Feels like the organization has a great deal of personal meaning.
- Employee Loyalty (#3)
    - Content to spend the rest of his/her career in this organization.
    - Does not have intention to change to another organization.
    - Intention to stay is driven by competency in delivering the brand promise.
- Employee Performance (#2)
    - Performance in the last appraisal exceeded expectations.
    - Believes there is increased opportunity for improved performance in this organization.

Techno-Work Engagement Scale (TechnoWES) (Mäkiniemi et al., 2020)

The authors started from the Finnish version of the *Utrecht Work Engagement Scale* (UWES-9) and developed a new scale – the *Techno-Work Engagement Scale* – to analyze work engagement in relation to the use of technology at workplace. The scale is formed by nine questions and, like the UWES-9, measures the three dimensions of work engagement: vigor, dedication, and absorption.

The questions were almost all adapted from UWES-9 to match the impact of the technology context on employee engagement analyzed by the new scale; only one item has been replaced by one adapted from the UWES-17: the question 'At my work, I always persevere, even when things do not go well' took the place of 'When I get up in the morning, I feel like going to work'.

Moreover, employees are asked to judge digital technology in general terms (as electronic data transmission and the devices and applications that enable producing and utilizing knowledge) and not to a specific technology or application.

Answers record the employees' feelings and thoughts using a scale ranging from 0 (never) to 6 (always).

Questions are:

- For vigor:
    - When I utilize technology in my work, I feel that I am bursting with energy.
    - I feel strong and vigorous when I use technology in my job.
    - I always persevere with using technology in my work, even when it does not go well.
- For dedication:
    - I am enthusiastic about utilizing technology in my job.
    - Utilizing technology inspires me in my job.
    - I am proud that I utilize technology in my work.
- For the absorption:
    - I feel happy when I am immersed in using technology in my work.

- I am completely immersed in using technology in my work.
- I get carried away when I'm working with technology.

PricewaterhouseCoopers' approach (McBain, 2006)

There are several surveys and questionnaires to measure employee engagement, just as there are different approaches to its analysis. It is interesting to mention the quite different approach that PricewaterhouseCoopers uses.

Instead of adopting a well-accepted survey, or developing its own questionnaire, the multinational professional services firm relays on some indicators to assess the employee engagement: resignation rates, performance related pay, training hours per FTE (full-time equivalent) and grievance rates.

Alan M. Saks' scales for job and organization engagement (Saks, 2006)

An example of the study based on Kahn's scale (Kahn, 1990) is the Alan M. Saks' one. The researcher developed two scales in order to measure job and organization engagement; the number of questions proposed to employees is 11 – five questions for job engagement and six questions for organization engagement – (Kahn's scale has 24 questions instead).

In this study, the researcher used the two scales to assess both job engagement and organization engagement; in particular, he adapted the questions to measure the employees' psychological presence in their job and organization. Questions from the two scales go from 1 (strongly disagree) to 5 (strongly agree).

Questions are:

- For job engagement:
  - I really "throw" myself into my job.
  - Sometimes I am so into my job that I lose track of time. (*For job engagement*)
  - This job is all consuming; I am totally into it.
  - My mind often wanders, and I think of other things when doing my job.
  - I am highly engaged in this job.
- For organization engagement:
  - Being a member of this organization is very captivating.
  - One of the most exciting things for me is getting involved with things happening in this organization.
  - I am really not into the "goings-on" in this organization.
  - Being a member of this organization make me come "alive."
  - Being a member of this organization is exhilarating for me.

- I am highly engaged in this organization.

Utrecht Work Engagement Scale (UWES) (Schaufeli, 2003)

Schaufeli, Bakker, and Salanova developed the *Utrecht Work Engagement Scale* (UWES) to measure work engagement. The researchers, starting from the *Maslach Burnout Inventory* (MBI) model (Maslach, Jackson, & Leiter, 1996), built their work on the multidimensional view of work engagement: its three components were the physical-energetic (vigor), the emotional (dedication), and the cognitive (absorption).

The UWES scale is one of the most used tools in literature for measuring levels of engagement at workplace. Moreover, the researchers' approach to work engagement – as multidimensional – is also well supported from other studies. (Isoard-Gautheur et al., 2020)

There are two versions of the scale, a complete questionnaire (UWES-17) with 17 questions and a shorter one (UWES-9) with nine items (shown below with an asterisk "*"). Questions are scored by interviewees with points from 0 (never) to 6 (always/every day).

Furthermore, the authors provide the scale already translated into several different languages (a not exhausting list is the following: Dutch, English, German, French, Norwegian, Swedish, Finnish, Spanish, Greek, Russian, Chinese, Italian); they also developed a student version of the scale, where some questions were rephased to reflect the different setting (an example is the following: 'At my work, I feel bursting with energy' became 'When I'm doing my work as a student, I feel bursting with energy').

Questions are:

- For vigor:
  - At my work, I feel bursting with energy. *
  - At my job, I feel strong and vigorous. *
  - When I get up in the morning, I feel like going to work. *
  - I can continue working for very long periods at a time.
  - At my job, I am very resilient mentally.
  - At my work I always persevere, even when things do not go well.
- For dedication:
  - I find the work that I do full of meaning and purpose.
  - I am enthusiastic about my job. *
  - My job inspires me. *
  - I am proud of the work that I do. *
  - To me, my job is challenging.

- For absorption:
    - Time flies when I'm working.
    - When I am working, I forget everything else around me.
    - I feel happy when I am working intensely. *
    - I am immersed in my work. *
    - I get carried away when I'm working. *
    - It is difficult to detach myself from my job.

Shirom-Melamed Vigor Measure (SMVM) (Isoard-Gautheur et al., 2020; Shirom, 2003)

The framework was created to measure the components of vigor and is considered an accurate tool to measure employee engagement. It measures the three dimensions of vigor – physical-energetic dimension (the physical strength component of vigor); emotional dimension (emotional energy component of vigor); cognitive dimension (cognitive liveliness component of vigor) – of workers in different occupations and with diverse education.

The number of questions proposed to employees was originally 14, and then reduced to 12. Furthermore, employees need to classify their answers with a scale from 1 (almost never) to 7 (almost always).

Questions are:

- For physical strength:
    - I feel full of pep.
    - I feel I have physical strength.
    - Feeling vigorous.
    - I feel energetic.
    - Feeling of vitality.
- For cognitive liveliness:
    - I feel I can think rapidly.
    - I feel I am able to contribute new ideas.
    - I feel able to be creative.
- For emotional energy
    - I feel able to show warmth to others.
    - I feel able to be sensitive to the needs of coworkers and customers.
    - I feel I am capable of investing emotionally in coworkers and customers.
    - I feel capable of being sympathetic to co-workers and customers.

Scale Name	Author(s)
OLIdenburg Burnout Inventory (OLBI)	Demerouti, Bakker, Vardakou, & Kantas
E3	Development Dimensions International firm
Gallup Workplace Audit ('Gallup Q12' or 'GWA')	Gallup firm
IES Engagement Survey	Institute for Employment Studies
Employee Engagement Reflective Scale	JRA firm
William A. Kahn's scale	Kahn
The Employee Engagement Scorecard	Kumar & Pansari
Techno-Work Engagement Scale (TechnoWES)	Mäkiniemi, Ahola, & Joensuu
PricewaterhouseCoopers' approach	PricewaterhouseCoopers firm
Alan M. Saks' scales for job and organization engagement	Saks
Utrecht Work Engagement Scale (UWES)	Schaufeli
Shirom-Melamed Vigor Measure (SMVM)	Shirom

Table 2 – List of Employee Engagement Tools

3 Methodology

3.1 Introduction

This study inquires the connection of employee engagement with technology adoption inside Italians SMEs conducting a multiple case study analysis. The research is guided by two research questions to determine the *what* and the *how* technology adoption leads employees to feel more engaged.

For the study the exploratory sequential mixed methods design was selected because this methodology helps with the selection of the right sample and indicators (by quantitative analysis) and with the valuation of the phenomenon (by qualitative part) and can provide explanatory power.

The chapter starts illustrating the research design process and choices made by the researcher to answer the research questions, and then goes into details of analysis process of the quantitative data first and the qualitative one then. It ends with considerations on ethics, data management, and possible conflict of interest for the study.

3.2 Research design

The current research is a combination of both exploratory (describing the current impact of technology on employee engagement in SMEs) and evaluative studies (assessing the extent to how technology can drive engagement).

The approach to the research is based on subjectivism (because of its belief that social reality is the result of people's perception and actions); moreover, the ideological dimension used is the sociology of radical change (because of its support to change the status quo). Consequently, the research is based on the radical humanist paradigm.

The research philosophy adopted is pragmatism. The approach to theory development of the research is abductive (because the research is based on research of data, generation of theory, test of it, and research for additional data).

Firstly, the impact of technology on work engagement was analyzed – through the analysis of employee engagement theories and the data collected from Italian SMEs. Then, based on those findings, a best practice model was developed.

Moreover, the working context that was explored is the hybrid one (remote working and face to face).

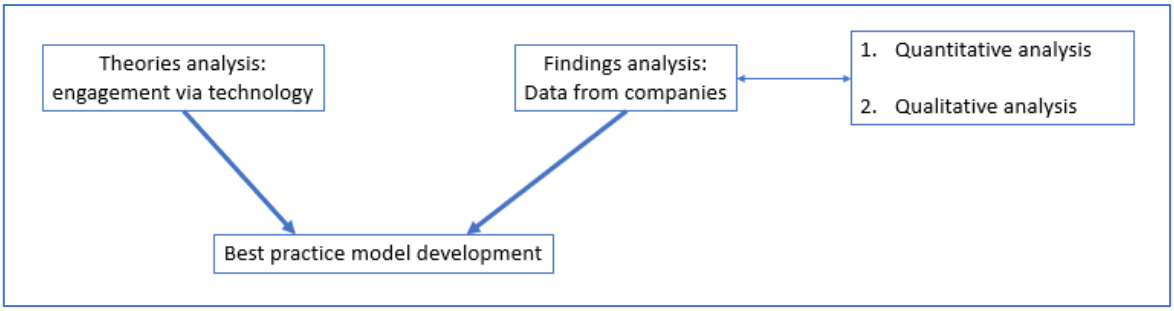

Figure 3 – Research Design Framework

Reasoning of mixed methods design: an exploratory sequential mixed methods design was selected because this methodology helps with the selection of the right sample and indicators (in the quantitative analysis) and with the valuation of the phenomenon (the qualitative part), and it can also provide explanatory power. (Creswell, Plano Clark, Gutmann, & Hanson, 2003)

3.2.1 Research strategy

Within the mixed methods design, a multiple case study strategy was conducted. Case study research is focused on investigating a particular phenomenon in its real-life context. (Yin, 2018) In the current study, the multiple case study has a holistic approach (the focus is on technology systems used across the whole organization), and it is focused on the linkages between technology and engagement.

Strand (the component of the research that includes posing a question, collecting data, analyzing data, and interpreting results based on the data) key decisions (Creswell, 2011):

- The level of interaction between the strands: interactive level of interaction, the two methods mixed before the final interpretation, qualitative strand depends on the quantitative strand (done at the beginning).
- The timing of the strands (it refers to the temporal relationship of the data collection from quantitative and qualitative strands and the order of using their results in the research): sequential timing, with the quantitative analysis first and the qualitative second.
- The procedures for mixing the strands (important concepts are *where* – point of interface – and *how* – mixing strategy – to mix the strands): the mixing occurs during data collection with connecting strategy to build the result of the qualitative strand on the quantitative one; in particular, for sample and indicators selection.

3.2.2 Research method

The secondary sources used include data and information from the extant literature around employee engagement and the technology and work interface, and from databases (like *EBSCO Information Services*), books, and web sites (of researchers, universities, associations, and practitioners). The primary

sources include two measures: The Techno-Work Engagement Scale (TechnoWES) (Mäkiniemi et al., 2020) and the Technostress scale (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008; Salanova et al., 2013); and in-depth personal interviews (with workers from companies selected as the sample from Italian SMEs).

3.2.3 Sampling

For the current research, a sample has been selected because of the impossibility to collect and analyze data from all the target population: the Italian SMEs. Indeed, in Italy there were 3,610,877 SMEs in the 2020. (Statista, 2021) The selection of firms was made between the Italian SMEs on the entire territory, with no focus on any specific region, industry, or size. Furthermore, information on these aspects was collected for further analysis. Requests for in-depth collaboration were made contacting directly employees from the professional network of the researcher, and through professional association of Italian SMEs.

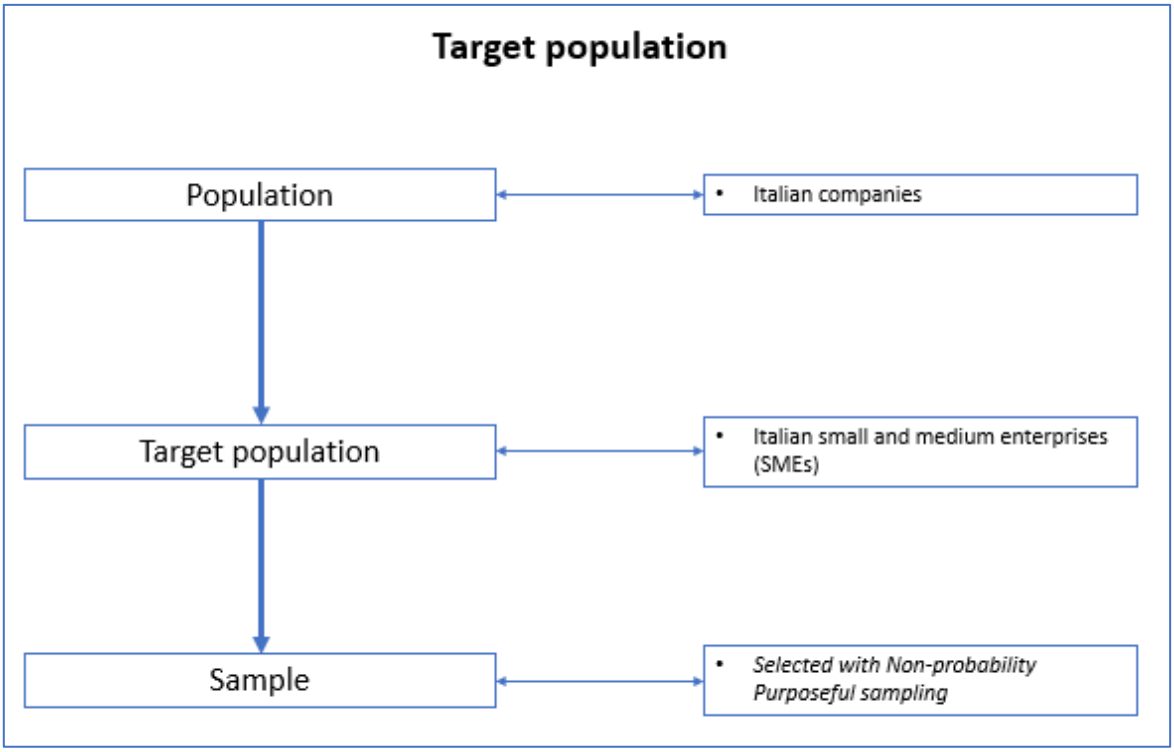

Figure 4 – Target population

The research was designed to undertake an in-depth study on a small number of SMEs, interviewing their employees, and conducting a multiple case study analysis. Thus, the non-probability sampling technique (Heterogeneous sampling strategy) has been used to select the sample analyzed in this study.

There are several non-probability sampling techniques available, including *Quota*, *Purposive*, *Volunteer*, and *Haphazard*. (Saunders, Lewis, & Thornhill, 2016) Although each of those technique has advantages

of its own, the purposive sampling has been selected because it offers the best chance to include participants who may express a wide range of perspectives.

With purposive sapling the researcher must use his judgement to select the sample that will best help respond research questions, and meet research objectives; for example, selecting cases that are particularly informative. (Saunders et al., 2016) While samples generated by purposive technique cannot be considered to be statistically representative of the target population, the selection of informative cases could generate rich and diverse data and thus justify its adoption. (Patton, 2002)

Moreover, the purposive sampling includes some strategies, the more common of which are: Extreme case (or deviant) sampling, Heterogeneous (or maximum variation) sampling, Homogeneous sampling, Critical case sampling, Typical case sampling, and Theoretical sampling. (Saunders et al., 2016) The Heterogeneous sampling strategy was selected because it allowed to obtain the greatest variation possible of data: the researcher, through his judgement, has selected participants with diverse characteristics and backgrounds, and from different regions, industries, and company size. Furthermore, to guarantee the maximum diversity possible in the sample, the selection criteria have been determined before the selection of the participants to the study. (Patton, 2002)

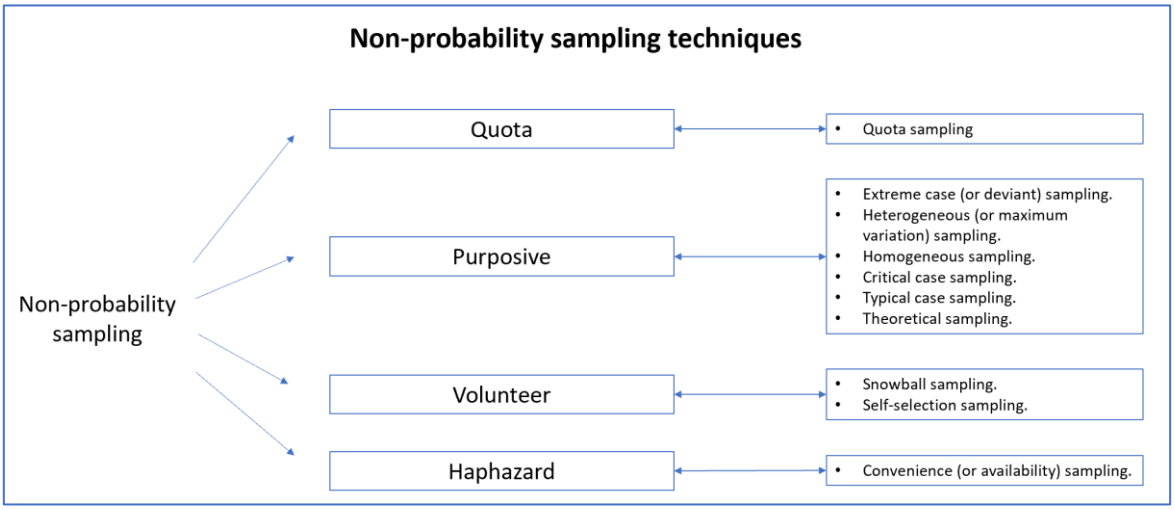

Figure 5 – Non-probability sampling techniques | Adapted from (Saunders et al., 2016)

3.2.4 Research stages

The study was conducted by observing the following stages:

I. Introduction – Concepts definition

The goal at this stage is to provide a definition for concepts and theories used during the study. Firstly, grounding from an extensive literature review, it was defined the concept of engagement and analyzed the main drivers and barriers to engagement, as well as concepts and theories of motivation and behind

organizational theories. Then, high reliable and valid tools to measure the engagement level were presented; these tools – scales used to develop a questionnaire, and methods to construct and analyze interviews – were used during the investigations made by the researcher to assess and analyze engagement levels of Italian SMEs' employees.

II. Organizational data analysis

- Phase 1 – Quantitative analysis

At this point, quantitative data is collected and analyzed to identify potential trends to be further analyzed in detail during the qualitative analysis. The questionnaire was developed using the Techno-Work Engagement Scale (TechnoWES) and the Technostress scale. Data collected during this phase, and its analysis, was fundamental to elaborate questions used during the interviews and to conduct them productively.

- Phase 2 – Qualitative analysis

At this point, qualitative data analysis is used for examining and evaluating the phenomenon – through thematic analysis. The qualitative analysis was essential to understand the current situation of engagement among Italian SMEs' employees and, above all, to understand in depth the reasons behind it.

III. Conclusion – Outcome

A framework (a best practice model) about the effective use of technology to improve the engagement of employees is formalized and explained in detail.

3.2.5 Data analysis strategy

Quantitative data from primary sources analyzed in this research has been tested using descriptive statistics, and with the Cronbach's alpha coefficient for verifying its consistency.

Qualitative data was analyzed using thematic analysis, in accordance with the following six steps (Braun & Clarke, 2018):

Step 1: Familiarizing with the data and identifying items of potential interest,

Step 2: Generating initial codes,

Step 3: Generating initial themes,

Step 4: Reviewing initial themes,

Step 5: Defining and naming themes,

Step 6: Producing the report.

3.2.6 Validity and reliability issues

Each part of the research project was performed transparently and described in detail; this would allow the reader to judge its quality and to be able to replicate it if wanted. The data sources used were selected respecting three main points: they need to be helpful for answering the research questions; their benefit should be greater than the associated cost (both obtaining and analyzing); they need to be accessible and disposable (considering aspects like company's proprietary data, ethical issues, and more).

Moreover, the quantitative data was analyzed for data reliability and validity for assessing research quality. Additionally, the scales used in the research – the Techno-Work Engagement Scale (TechnoWES) (Mäkiniemi et al., 2020) and the Technostress scale (Ragu-Nathan et al., 2008; Salanova et al., 2013) – have high reliability and validity.

For the qualitative analyses, because of their different nature (they refer to social science, and data reflects the analyzed scenario at the time of the observation), it is not fair to assess their quality through their replication or generalizability (Baxter & Sommerville, 2010; Jones, 2013; Saunders et al., 2016). Instead, any used techniques were described with accurate explanation of how data was obtained and analyzed. Furthermore, techniques of validation, like participant validation, were used to avoid (or at least minimize) any possible bias.

3.3 The quantitative study

The primary sources used for this study include data obtained from Italian workers collected through surveys and interviews. The scales used are the *Techno-Work Engagement Scale* from Mäkiniemi, Ahola, and Joensuu (Mäkiniemi et al., 2020) and the *Technostress Scale* from Ragu-Nathan, Tarafdar, Ragu-Nathan, and Tu (Ragu-Nathan et al., 2008).

The study started collecting data (anonymously) from 30 employees working in Italy for small and medium-sized enterprises: those employees have been asked to answer nine questions from the TechnoWES scale, and 47 from the technostress scale – a total of 56 questions.

Following the analysis of data from surveys, the information obtained from the literature review and the secondary data have been adjusted to the Italian market. Furthermore, data from primary data has been used to select and prepare the in-depth personal interviews with subject-matter experts, workers, and employers from companies selected as the sample from Italian SMEs, in addition to freelances – the latter category has been picked to make a comparison between work life of workers hired by SMEs and work life of workers who operate in the same SMEs but like service providers. Analysis from the data collected helped to elaborate some guidelines to improve employee engagement at SMEs with a focus to the Italian current situation.

3.3.1 Questionnaire

The questionnaire was submitted in two languages (Italian and English) – using validated translations – and each employee who answered the questionnaire had the possibility to select the preferred language. All the pages of the questionnaire (introduction, questions, explanations, etc.) were available both in Italian and English. A copy of the questionnaire used (in both languages) is available in the appendix.

At the beginning of each page of the questionnaire, it was explained that the word *technology* referred to the digital tool(s) used by employees during their work, whether it was done at the office, home or anywhere else. Moreover, it was clarified that the term *technology* could be a computer program (for example, ERP, Excel, etc.), a smartphone or a cloud-based application (used both through mobile phone and via web, such as WhatsApp, etc.), or any other *digital* tool that the organization provided to them (for example, e-mail, collaboration and videoconferencing tool, etc.).

Responses to questions of the questionnaire were given on a 5-point Likert scale, with the following values:

1 = Strongly disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly agree

The questions about the Technostress have been divided into two categories – technostress creators and technostress inhibitors – and organized by theme in 8 groups, plus questions on job satisfaction, commitment to the organization, and turnover intention.

- Technostress creators (23 questions)
    - Techno-overload (5 questions)
    - Techno-invasion (4 questions)
    - Techno-complexity (5 questions)
    - Techno-insecurity (5 questions)
    - Techno-uncertainty (4 questions)
- Technostress inhibitors (24 questions)
    - Literacy facilitation* (5 questions)
    - Technical support provision* (4 questions)
    - Involvement facilitation* (4 questions)
- Job satisfaction* (3 questions)
- Organizational commitment* (4 questions)

- Continuance commitment (4 questions)

The questions from TechnoWES and ones in those groups shown above with an asterisk "*" (Literacy facilitation, Technical support provision, Involvement facilitation, Job satisfaction, Organizational commitment) are expressed with a positive connotation (i.e., questions are asked as positive feelings). The remaining questions are expressed in the opposite way – they have a negative connotation.

In questions with positive connotation a greater rate in answers mean positive feelings (i.e., top value is the best feeling, bottom one is the worst feeling), while a higher value means a negative feeling for the other questions (ones formulated with negative connotation). For this reason, it is important to keep in mind that for the answers to questions formulated with a negative connotation it is expected to have a negative correlation, whereas a positive correlation exists between the other questions with a positive connotation.

Furthermore, to be able to make a comparison possible between all the questions, it is important to consider the different way of express the questions or, alternately, it is possible to transform the questions to have all of them formulated uniformly: convert the scale from 1 to 5 to a scale from 5 to 1; thus, the answers with value of 1 becomes of 5, ones with value of 2 becomes of 4, and so on.

Additional information about respondents – industry, number of employees of the company, and details of the working territory have been collected for additional analysis. Moreover, a copy of all the responses – as received, in their original version and not transformed – is available in the appendix.

3.4 The qualitative study

The exploratory sequential mixed methods design was selected because this methodology helped with the selection of the right sample and indicators (in the quantitative analysis) to be used in the planning of the qualitative research and improve the analysis' accuracy.

To benefit the interviews flow, and their analysis, questions were divided into categories with similar topics – engagement, technology, platform, Italy focus, and final thoughts. That categorization also helped the discovery of the main headings and the word counting for related context.

In the section *Engagement*, questions have been created to discover the emotions felt by employees in both situations in their everyday life (in general, at home) and in their professional settings. This helped the researcher to go in depth with the interviewees' feelings and be able to comprehend what the emotions generated by company, by technology, and by other factors were.

The information acquired from this section has been expanded with the questions focusing on the situation in Italy (*Italy Focus*). It has been asked what employees' perceptions about employee engagement were of the Italian companies against foreign others. Moreover, one question explicitly asked why

Italian companies are performing so bad in employees' points of view (*Why do you think companies in Italy do so badly in terms of employee engagement?).*

Questions grouped in the section *Technology* have been asked to find what emotions were generated by technology itself (feelings perceived in general life) and what by its use at work (feelings perceived in professional life). Understanding that division has been very useful in analyzing the relationship of interviewees with technology (in both settings) and thus describing what could be beneficial, and what not, for engagement.

The last group of questions (*Final Thoughts*) has been useful for collecting additional information about employees' feelings and thoughts, also explicitly asking one suggestion to their companies for improving engagement. It ends with any further comments employees wanted to add.

The qualitative data was analyzed using thematic analysis, observing the following six phases (Braun & Clarke, 2018):

Phase 1: Familiarizing with the data and identifying items of potential interest,

Phase 2: Generating initial codes,

Phase 3: Generating initial themes,

Phase 4: Reviewing initial themes,

Phase 5: Defining and naming themes,

Phase 6: Producing the report.

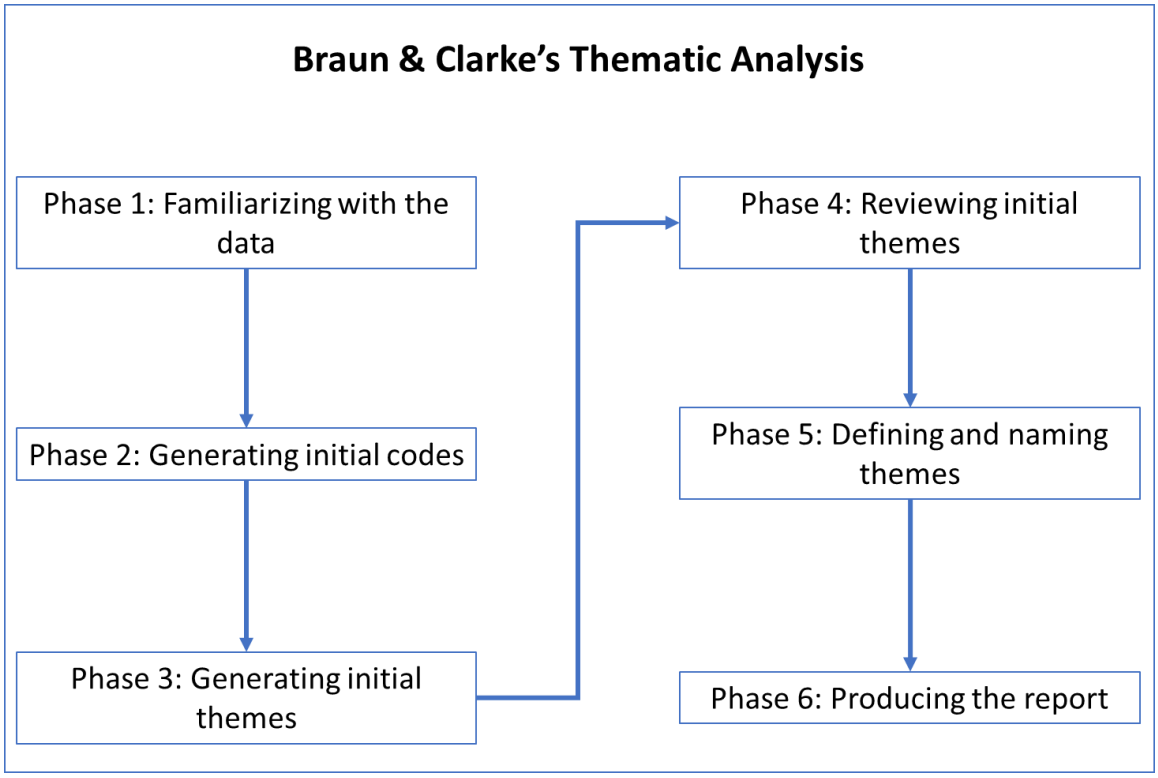

Figure 6 – Adaptation of Virginia Braun and Victoria Clarke's Thematic Analysis (Braun & Clarke)

3.5 Ethical considerations

Since the beginning of the research design, ethical aspects were taken into consideration, and the research was evaluated from a risk management approach perspective (risk assessment; recognition of conflicting interests) to find ethical concerns that could have arisen and act accordingly to minimize risks if not possible to eliminate them at all (anticipating risks). Moreover, the researcher followed the guidelines about research ethics and principles of data protection and data management suggested by Saunders, Lewis, and Thornhill. (Saunders et al., 2016)

3.5.1 Level of access

The required level of access needed was considered through the concepts of *feasibility* and *sufficiency*. The former was to evaluate if access to the data could have been possible, and the latter to establish the extent of the data could have been needed to answer the research's questions.

When contacting the companies, the purpose of the research and the researcher role – as an *external researcher* – was carefully explained; furthermore, informed consent was requested.

It was used the following approach to minimize the issues related to the level of access:

- Physical level of access – Explaining how the research could help the company itself, assuring confidentiality and anonymity, proving credibility and competence of the researcher.

- Continuing level of access – It could be needed for further research and to interview different participants from the previous interviews: negotiating it from the beginning of the process (from the request of entering the company) and highlighting confidentiality.
- Cognitive level of access – People interviewed could be different from the ones who obtained access (owner/managers against workers) thus, it is important to receive information from them: explaining the research's aim and the participant information sheet in all the details.

3.5.2 Informed consent

Interviews were taken in-person, where feasible, and virtually via videoconferencing tools (Microsoft Teams and Zoom). The interviews were audio (and video) recorded, if it was useful, and only after having received the informed consent of each participant to the research. Each interviewed participant received a *participant information sheet* – that summarizes the research project – and was asked to complete and sign a *consent form*.

Templates of both documents are available in the research's appendix section:

- participant information sheet (Appendix B),
- consent form (Appendix B).

3.5.3 Data protection and data management

The participation in both the survey and the interview was on voluntary basis, and the participant had, at any time, the right to withdraw without giving reason. Moreover, the participant had the right to decline to answer a question or set of questions.

The questionnaire was distributed through the University's Microsoft Forms platform, and the researcher was the only one authorized to collect responses. Moreover, the answers were collected anonymously.

When the video of the interview was recorded, it was used only to create the transcript of the interview. The latter was obtained through a third-party company – a cloud platform specialized in audio transcription or from Microsoft Teams directly. The original video recording was destroyed as soon as the transcript became available, and in any case not later than the publishing of the current research.

Furthermore, the transcripts were anonymized and then analyzed using a specialized software for qualitative analysis (CAQDAS, Computer Assisted Qualitative Data Analysis) on the researcher's computer. The researcher was the only one authorized to use the software and access to the analysis of the anonymized transcripts. After the process of making the original transcript anonymous, no one was more able to correlate collected answers with real names of the interviewees.

Data was managed in respect of the GDPR and local laws, and no personal or sensitive data was asked or stored, and only anonymized data was kept for further analysis.

3.5.4 Conflict of interest

No potential conflict of interest was reported by the author.

3.6 Summary of research methodology

This study inquires the connection of employee engagement with technology adoption inside Italians SMEs conducting a multiple case study analysis. It is a combination of both exploratory (describing the current impact of technology on employee engagement in SMEs) and evaluative studies (assessing the extent to how technology can drive engagement).

The research starts with the quantitative data collection and analysis to frame the current situation in Italy, and continues with the qualitative analysis to go in depth to the engagement condition among Italian SME's employees and to explain the correlation between employee engagement and company's adoption of technology.

Indeed, the study is built on the analysis made on data and information from secondary sources (the extant literature around employee engagement and the technology and work interface, from several databases, books, and web sites), and from primary sources (a survey based on the Techno-Work Engagement Scale and the Technostress scale, and the in-depth semi structured interviews).

The scales used in the research – the Techno-Work Engagement Scale and the Technostress scale – have high reliability and validity. Additionally, the quantitative data analyzed in this research has been tested using descriptive statistics, and with the Cronbach's alpha coefficient for verifying its consistency.

Qualitative data was analyzed using thematic analysis, in accordance with the Braun & Clarke's six steps (Braun & Clarke, 2018):

1. Familiarizing with the data and identifying items of potential interest,
2. Generating initial codes,
3. Generating initial themes,
4. Reviewing initial themes,
5. Defining and naming themes,
6. Producing the report.

Moreover, the study was conducted by observing the following stages:

I. Introduction – Concepts definition
II. Organizational data analysis
    a. Quantitative analysis

b. Qualitative analysis

III. Conclusion – Outcome: a best practice model

Lastly, considerations on ethics, data management, and possible conflict of interest for the study were taken into consideration since the research design. Indeed, the research was evaluated from a risk management approach perspective (risk assessment, recognition of conflicting interests) to find ethical concerns that could have arisen and act accordingly to minimize risks if not possible to eliminate them at all (anticipating risks). Moreover, the researcher followed the guidelines about research ethics and principles of data protection and data management suggested by Saunders, Lewis, and Thornhill. (Saunders et al., 2016)

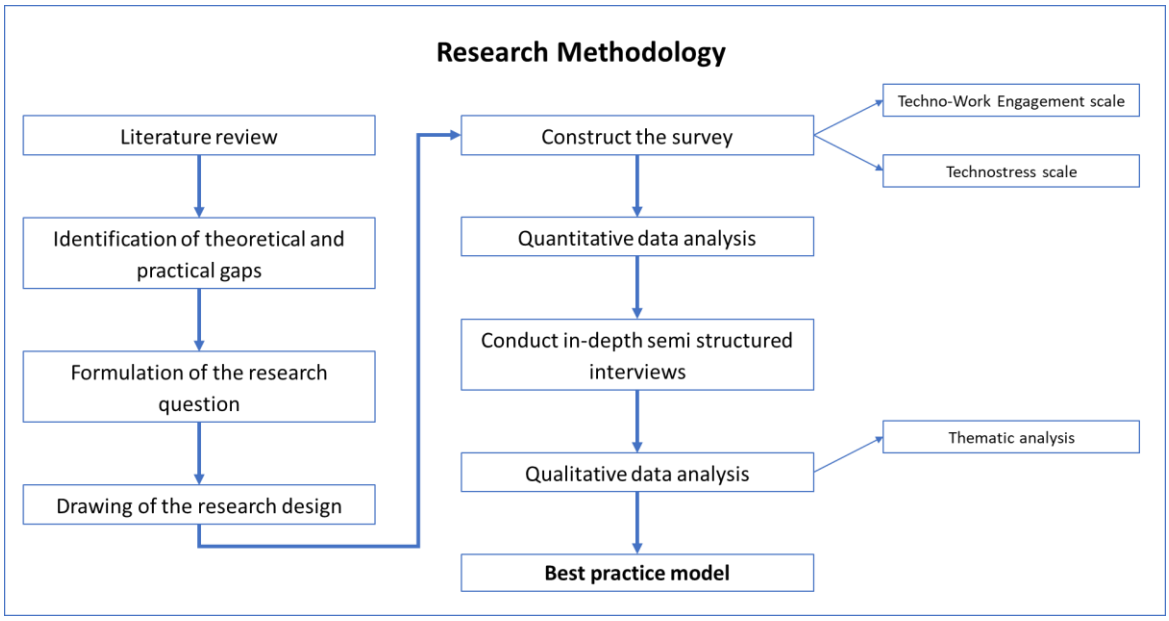

Figure 7 – Research Methodology

4 Results and Data analysis – Quantitative data

4.1 Introduction

This section contains data from the questionnaire and its analysis. Indeed, the research starts with quantitative data collection and analysis to frame the current situation in Italy. Then, building on the quantitative analysis, the study continues the inquiry on the correlation between engagement and technology with the qualitative analysis stage.

4.2 Participants

The selection of participants to the study was made between workers of the Italian SMEs from the entire territory, with no focus on any specific region, industry, or size. Nonetheless, the majority of the respondents to the survey are from the North region of Italy (80%), one fifth comes from regions of the Center, and no one comes from the South.

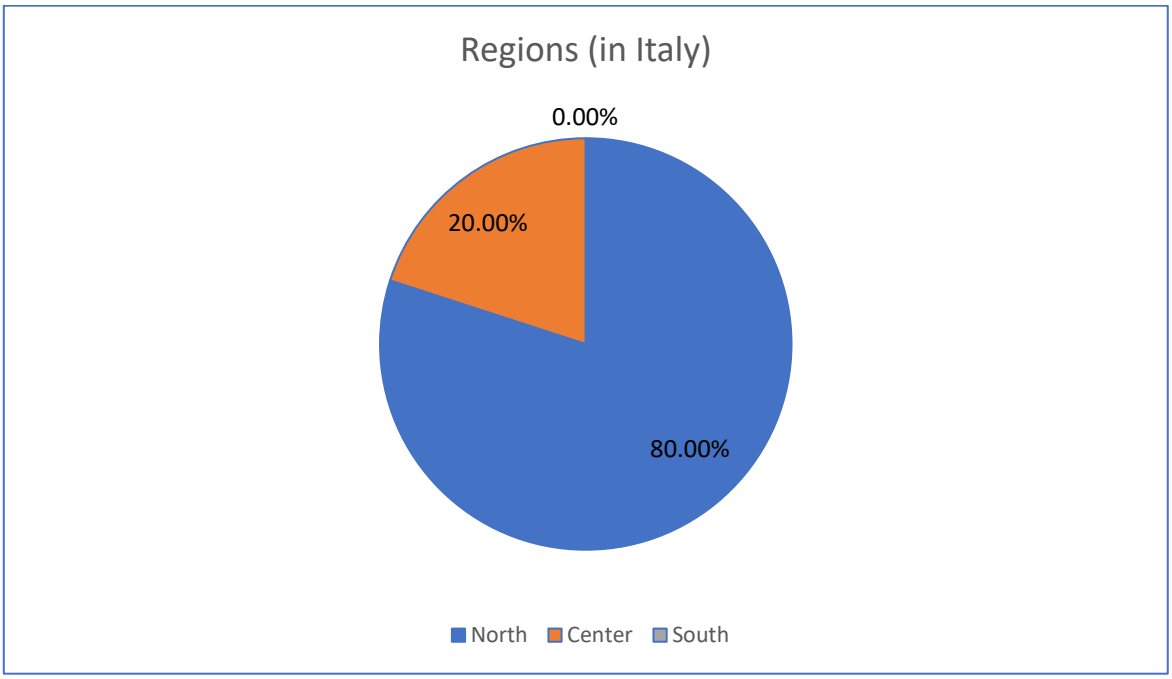

Figure 8 – Regions of Participants' Companies

Most of the participants in the study (60%) are from bigger SMEs (more than 100 employees), whereas participants from companies with less than 50 employees account for the 26.67% of the entire sample. Employees from companies in the middle (51-100 employees) count for 13.33% of the sample.

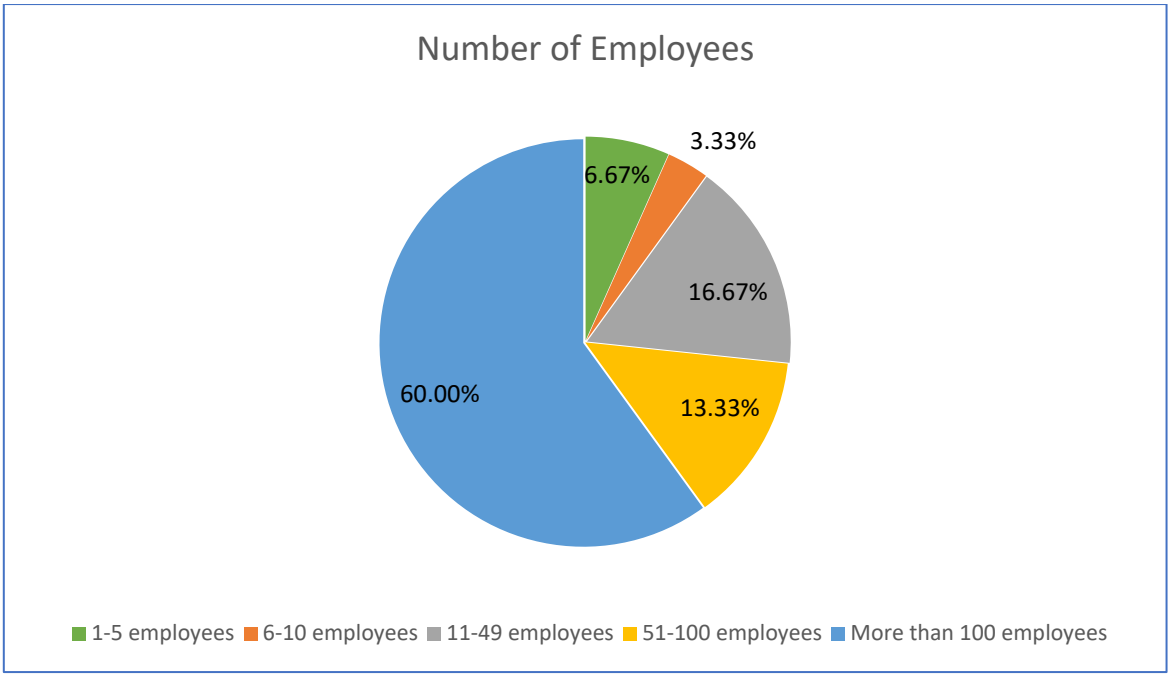

Figure 9 – Number of Employees of Participants' Companies

The industries represented in this study are few (Construction, Food, Import/Export, IT, Oil & Gas, Pharma, Public Health, Services, Telecommunications, and Other), with a majority of companies from the Information Technology sector.

The IT companies account for 50% of the study, with almost all of them working as IT consultants (the 40% of the entire sample). The other IT sectors are Artificial Intelligence, Data Management, and Vendor.

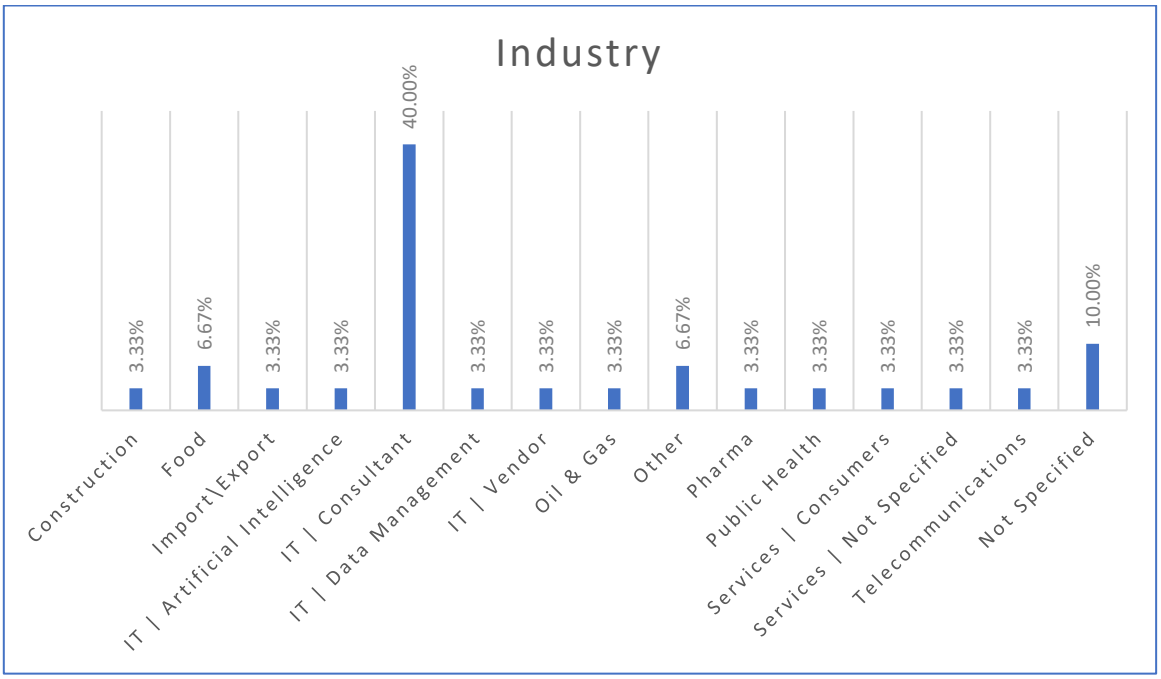

Figure 10 – Industries of Participants' Companies

4.3 Measures

Data has been tested for its reliability by calculating the *Cronbach Alpha* coefficient.

The computation has been made with the last version of the Cronbach Alpha cloud software (current version 1.0.6), available in the suite of *Free Statistics Software* (current version 1.2.1) developed by Patrick Wessa, PhD and performed on the *Big Analytics Cloud Computing Center's R Server*. (Wessa, 2021)

The alpha values of the data collected meet the suggested minimum acceptable value of 0.70 for applied research (Lance, Butts, & Michels, 2006; Nunnally & Bernstein, 1994), except for the questions related to the turnover intention (grouped into *continuance commitment*).

Because of the lack of its reliability, questions regarding the turnover intention have been analyzed for preparing the in-depth personal interviews, but they are not either integrated into the analysis of the current situation of employee engagement nor used for the development of the guidelines.

Cronbach Alpha and Related Statistics

Items	Cronbach Alpha	Std. Alpha	Average R
All questions	**0.9185**	0.9222	0.1747
TechnoWES (q.1-9)	0.8818	0.8901	0.4737
Technostress creators (q.10-32)	0.9036	0.909	0.3028
Techno-overload	0.8484	0.8483	0.5279
Techno-invasion	0.7378	0.7555	0.4358
Techno-complexity	0.8326	0.85	0.5312
Techno-insecurity	0.7491	0.7939	0.4352
Techno-uncertainty	0.9135	0.9138	0.726
Technostress inhibitors (q.33-45)	0.9324	0.9326	0.5356
Literacy facilitation	0.9075	0.9081	0.6639
Technical support provision	0.9174	0.9168	0.7337
Involvement facilitation	0.7591	0.7613	0.4436
Job satisfaction (q.46-48)	0.8911	0.8953	0.7402
Organizational commitment (q.49-52)	0.8854	0.8862	0.6607
Continuance commitment (q.53-56)	0.6857	0.6942	0.362

Table 3 – Cronbach Alpha coefficient

The Techno-Work Engagement Scale has been used to evaluate the level of well-being perceived by employees because of the use of technology at work. The scale measures the employee engagement level capturing its three dimensions: vigor (questions 1-3), dedication (questions 4-6), and absorption (questions 7-9).

The Technostress scale was used to investigate the phenomenon of technostress (stress caused by the extensive use of technologies at work to employees), and to measure the impact of technostress creators (factors that increase the level of technostress) and technostress inhibitors (factors that reduce the level of technostress or offset its negative effects) to employees of Italian SMEs.

In addition, it was used to assess employees' levels of job satisfaction, commitment to the organization, and turnover intention.

The technostress creators were grouped into five categories:

- Techno-overload – With the questions in group techno-overload the research investigated technology related aspects or factors that cause a faster and longer work.
- Techno-invasion – Questions in the group techno-invasion examined the invasion of the technologies used at work into the personal life, being connected and available all the time.
- Techno-complexity – The group of questions in techno-complexity inquired the workers' perception of their skills compared to the complexity of technologies used at work, measuring how they are feeling inadequate and how much technologies force them to constantly study and upgrade their technology skills.
- Techno-insecurity – With the group techno-insecurity the study analyzed the level of insecurity perceived by the employees about their jobs due to the technology used at work, because they felt threatened by the automation created by technology or by the superior technology skills of coworkers.
- Techno-uncertainty – Lastly, with questions related to the techno-uncertainty group, the research investigated the context of uncertainty created by the continuous changes and upgrades of technology perceived by employees.

The technostress inhibitors were grouped into three categories:

- Literacy facilitation – The group of questions in literacy facilitation examined the aspects related to the sharing of knowledge related to technology used in the company, allowing workers to improve their skills, and reducing the feeling of inappropriateness.
- Technical support provision – The group technical support provision measured the level of support received by workers about the use of the technology at work.
- Involvement facilitation – With the questions in group involvement facilitation the research investigated the level of awareness of employees about the introduction of new technologies at work, and about the rationale behind those technologies.

Job satisfaction

Questions of the 'job satisfaction' group analyze the positive emotional state felt by employees resulting from the positive evaluation of their job.

Organizational commitment

In the group 'organizational commitment' there are questions designed to measure the employee's level of identification with and involvement in the company.

Continuance commitment

Lastly, with questions in the 'continuance commitment' group, the research investigated the intention of employees to remain at the current company – assessing the perceived costs for the worker to leave the organization.

4.4 Data analysis

The findings from the analysis of the questionnaire (quantitative analysis) are showed in this section.

The analysis of the data from the questionnaire has been analyzed to show the answer that appears the most often – in statistics referred as the *mode*. That helped to highlight the trends in employee engagement in Italian SMEs and helped to focus the further qualitative analysis (in-depth personal interviews).

It is provided the analysis and a table that summarizes the results for each section of the questionnaire except the group of questions defined as *continuance commitment* (as mentioned early in the chapter, because of the lack of reliability, that group of questions has not been deeply analyzed and thus it is not showed here).

4.4.1 TechnoWES

The questions in the section TechnoWES were used to measure the level of perceived well-being because of the use of technology at work in the employees who answered the questionnaire.

Techno-Work Engagement Scale (TechnoWES)		
Dimension measured	**Question**	**Mode (statistics)**
Vigor (dimension)	When I utilize technology in my work, I feel that I am bursting with energy.	4
	I feel strong and vigorous when I use technology in my job.	4
	I always persevere with using technology in my work, even when it does not go well.	3
Dedication (dimension)	I am enthusiastic about utilizing technology in my job.	4
	Utilizing technology inspires me in my job.	4
	I am proud that I utilize technology in my work.	5
Absorption (dimension)	I feel happy when I am immersed in using technology in my work.	3
	I am completely immersed in using technology in my work.	4
	I get carried away when I'm working with technology.	4

Table 4 – List of questions with related mode for the TechnoWES part

Percentage of the total questions:

- "1 = Strongly disagree": 3.70%

- "2 = Disagree": 13.33%
- "3 = Neutral": 29.63%
- "4 = Agree": 34.44%
- "5 = Strongly agree": 18.89%

The majority of the answers received are "4 = Agree" (34.44%) and "3 = Neutral" (29.63%).

The top two answers – "4 = Agree" and "5 = Strongly agree" – count for 53.33% of the total answers of the section.

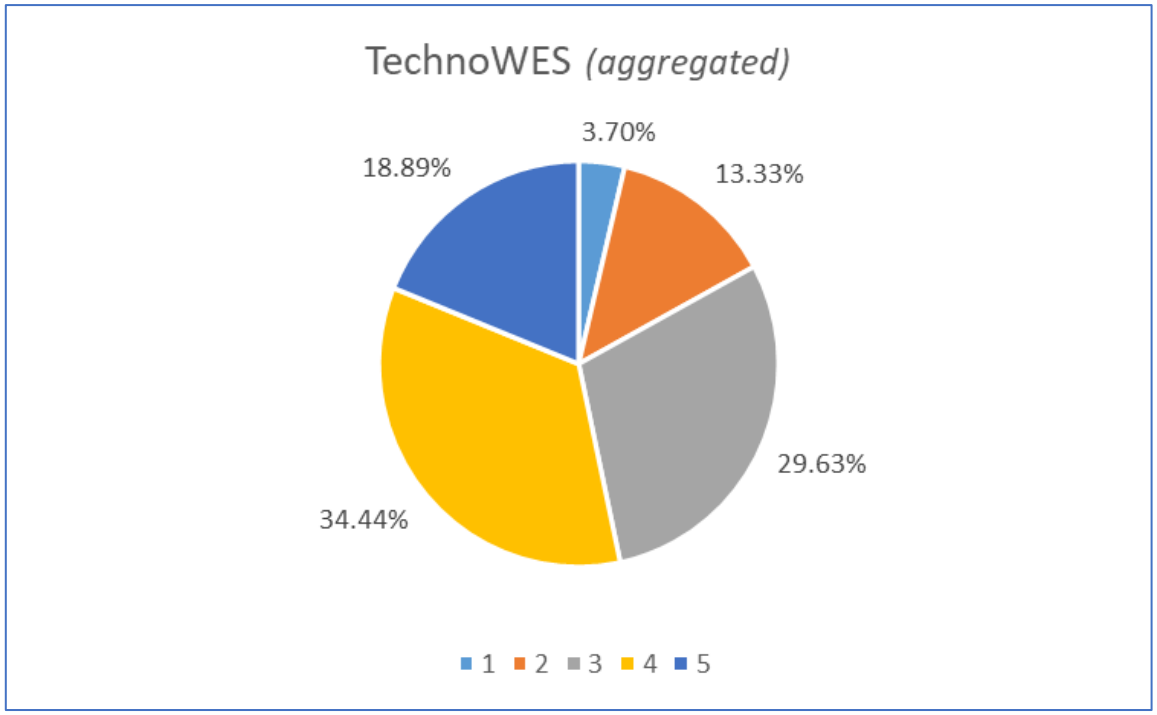

Figure 11 – Count of each answer provided for the TechnoWES part

4.4.2 Technostress Creators

The questions in the section technostress creators were used to investigate the phenomenon of technostress – the stress caused by the extensive use of technologies at work to employees. In particular, the section's questions measure the impact of technostress creators – the factors that increase the level of technostress.

The data analysis has been performed for each category of the technostress creators: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty.

Technostress Creators		
Dimension measured	**Question**	**Mode (statistics)**
Techno-overload	I am forced by this technology to work much faster.	3
	I am forced by this technology to do more work than I can handle.	3
	I am forced by this technology to work with very tight time schedules.	4
	I am forced to change my work habits to adapt to new technologies.	3
	I have a higher workload because of increased technology complexity.	2
Techno-invasion	I spend less time with my family due to this technology.	2
	I have to be in touch with my work even during my vacation due to this technology.	5
	I have to sacrifice my vacation and weekend time to keep current on new technologies.	1
	I feel my personal life is being invaded by this technology.	5
Techno-complexity	I do not know enough about this technology to handle my job satisfactorily.	3
	I need a long time to understand and use new technologies.	1
	I do not find enough time to study and upgrade my technology skills.	3
	I find new recruits to this organization know more about computer technology than I do.	3
	I often find it too complex for me to understand and use new technologies.	1
Techno-insecurity	I feel constant threat to my job security due to new technologies.	1
	I have to constantly update my skills to avoid being replaced.	1
	I am threatened by coworkers with newer technology skills.	1
	I do not share my knowledge with my coworkers for fear of being replaced.	1
	I feel there is less sharing of knowledge among coworkers for fear of being replaced.	1
Techno-uncertainty	There are always new developments in the technologies we use in our organization.	3
	There are constant changes in computer software in our organization.	3
	There are constant changes in computer hardware in our organization.	2
	There are frequent upgrades in computer networks in our organization.	3

Table 5 – List of questions with related mode for the Technostress Creators part

4.4.2.1 Techno-overload

Percentage of the total questions:

- "1 = Strongly disagree": 19.33%
- "2 = Disagree": 22.00%
- "3 = Neutral": 26.00%
- "4 = Agree": 20.67%
- "5 = Strongly agree": 12.00%

In the category techno-overload, most of the answers received were almost equally distributed around 20%, except for the answer "5 = Strongly agree" (with a 12%).

The questions "1 = Strongly disagree" and "2 = Disagree" count for 41.33% of the total.

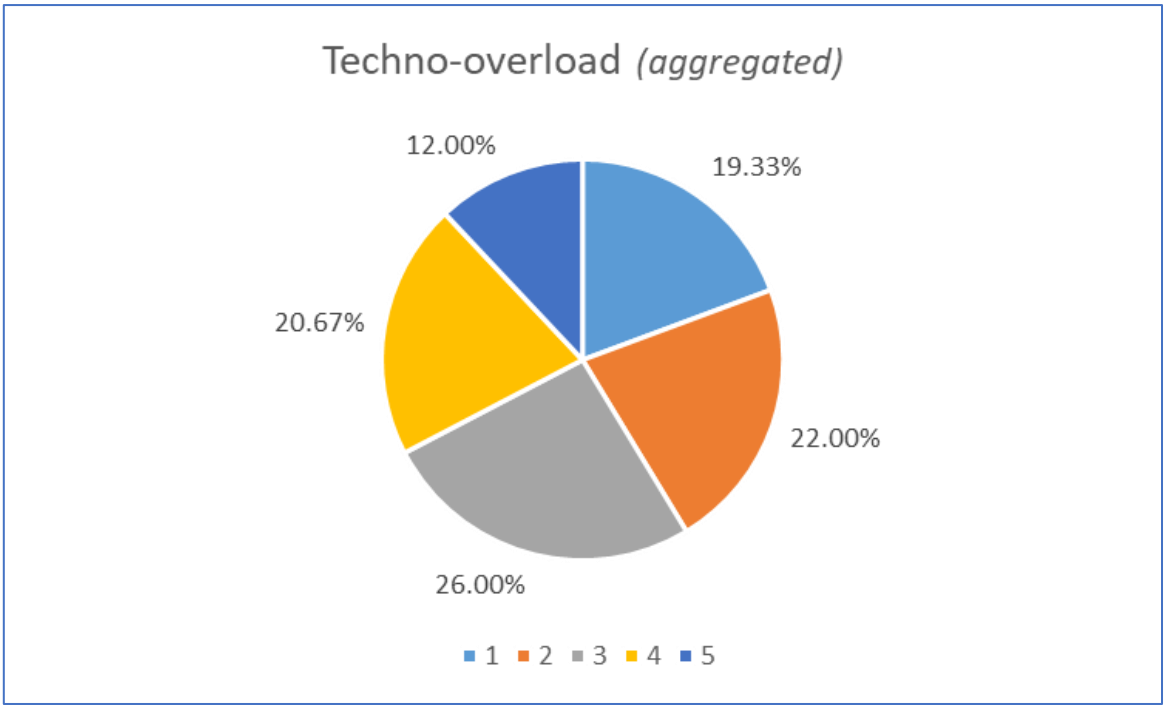

Figure 12 – Count of each answer provided for the Techno-overload part

4.4.2.2 Techno-invasion

Percentage of the total questions:

- "1 = Strongly disagree": 26.67%
- "2 = Disagree": 24.17%
- "3 = Neutral": 15.00%
- "4 = Agree": 18.33%
- "5 = Strongly agree": 15.83%

For the category techno-invasion, the majority of the answers received were "1 = Strongly disagree" (26.67%) and "2 = Disagree" (24.17%) – representing 50.83% of the total.

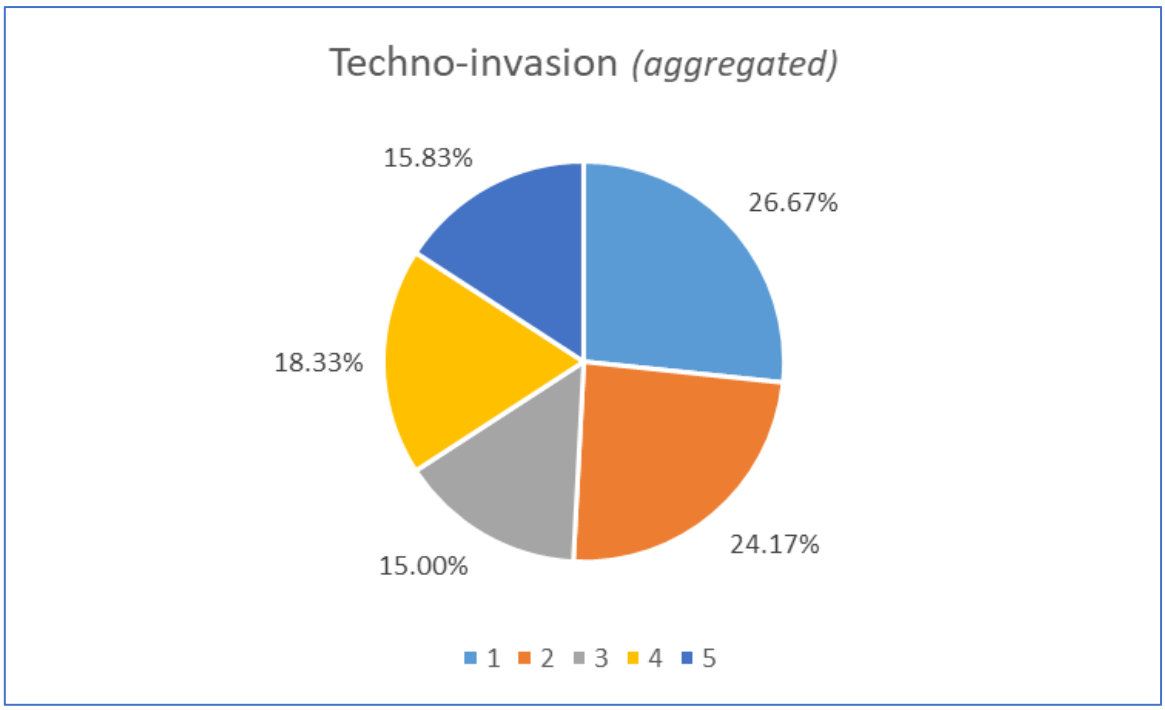

Figure 13 – Count of each answer provided for the Techno-invasion part

4.4.2.3 Techno-complexity

Percentage of the total questions:

- "1 = Strongly disagree": 34.00%
- "2 = Disagree": 18.00%
- "3 = Neutral": 30.67%
- "4 = Agree": 10.00%
- "5 = Strongly agree": 7.33%

For the category techno-complexity, the majority of the answers received were "1 = Strongly disagree" (34.00%) and "3 = Neutral" (30.67%).

The answers "1 = Strongly disagree" and the answers "2 = Disagree" count for 52.00% of the total.

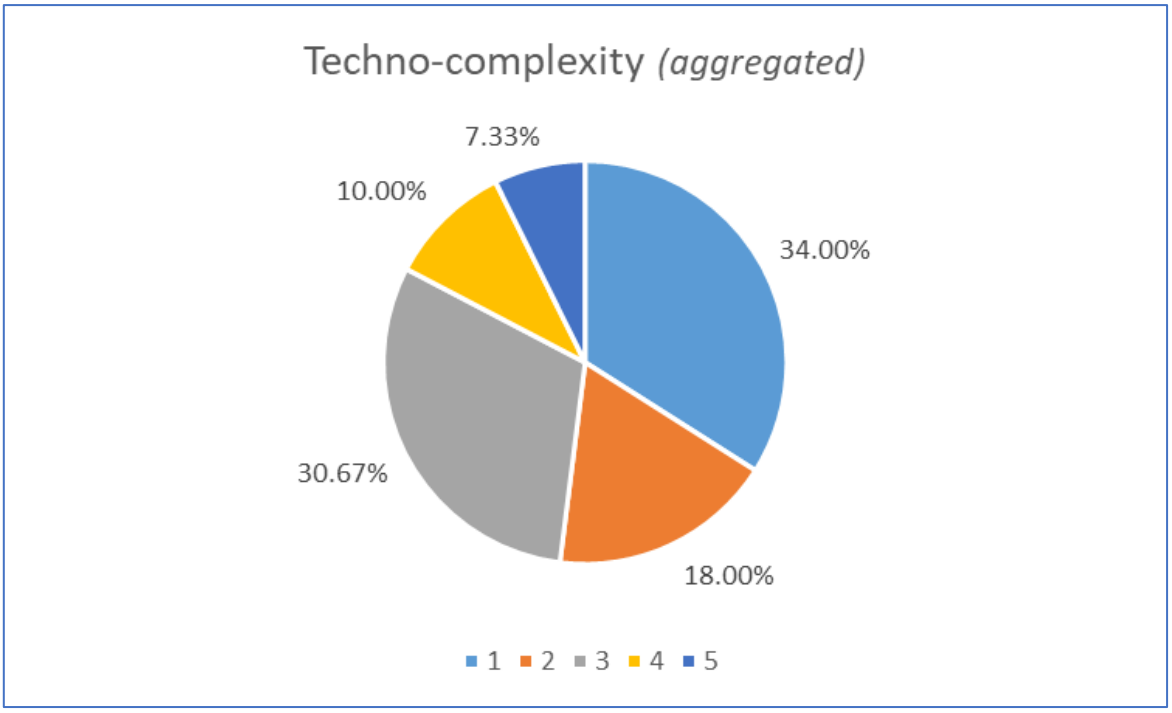

Figure 14 – Count of each answer provided for the Techno-complexity part

4.4.2.4 Techno-insecurity

Percentage of the total questions:

- "1 = Strongly disagree": 58.67%
- "2 = Disagree": 17.33%
- "3 = Neutral": 16.67%
- "4 = Agree": 6.00%
- "5 = Strongly agree": 1.33%

For the category techno-insecurity, the majority of the answers received were "1 = Strongly disagree", counting for 58.67% of the total.

The answers "1 = Strongly disagree" and the answers "2 = Disagree" count for the 76.00% of the entire section.

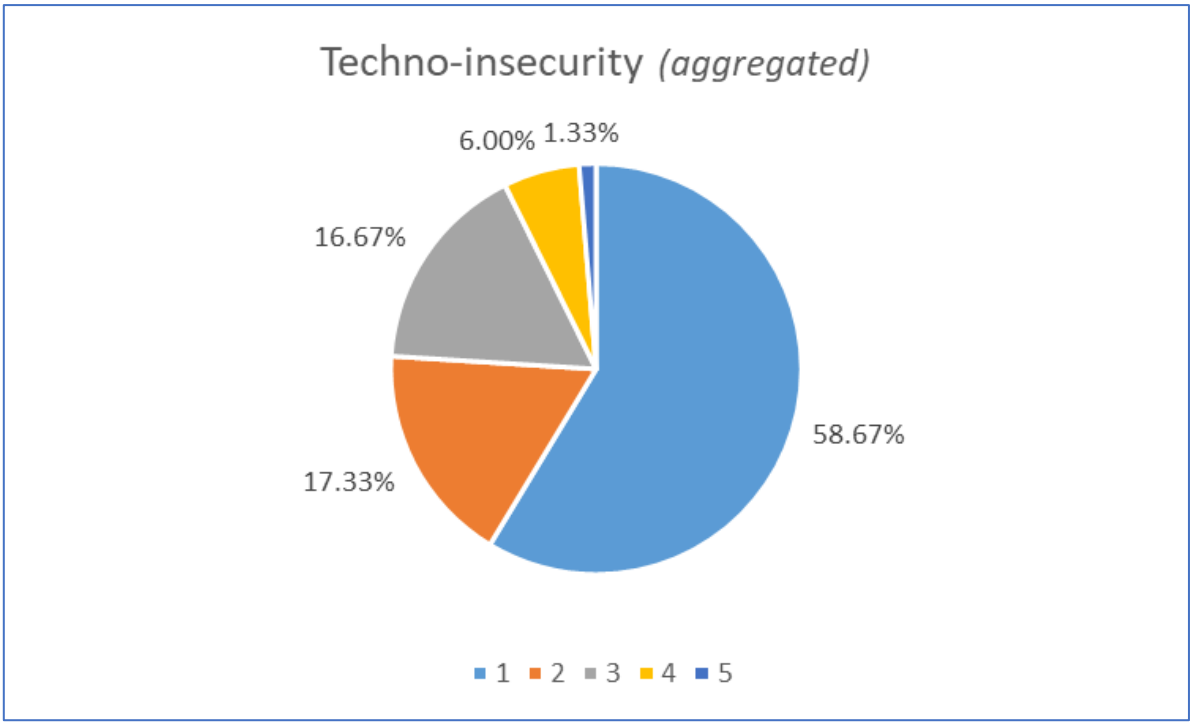

Figure 15 – Count of each answer provided for the Techno-insecurity part

4.4.2.5 Techno-uncertainty

Percentage of the total questions:

- "1 = Strongly disagree": 16.67%
- "2 = Disagree": 20.00%
- "3 = Neutral": 31.67%
- "4 = Agree": 20.00%
- "5 = Strongly agree": 11.67%

For the category techno-uncertainty, the majority of the answers received were "2 = Disagree" and "4 = Agree", both with 20.00% of all the answers provided for the section.

The questions "1 = Strongly disagree" and "2 = Disagree" count for 36.67% of the total.

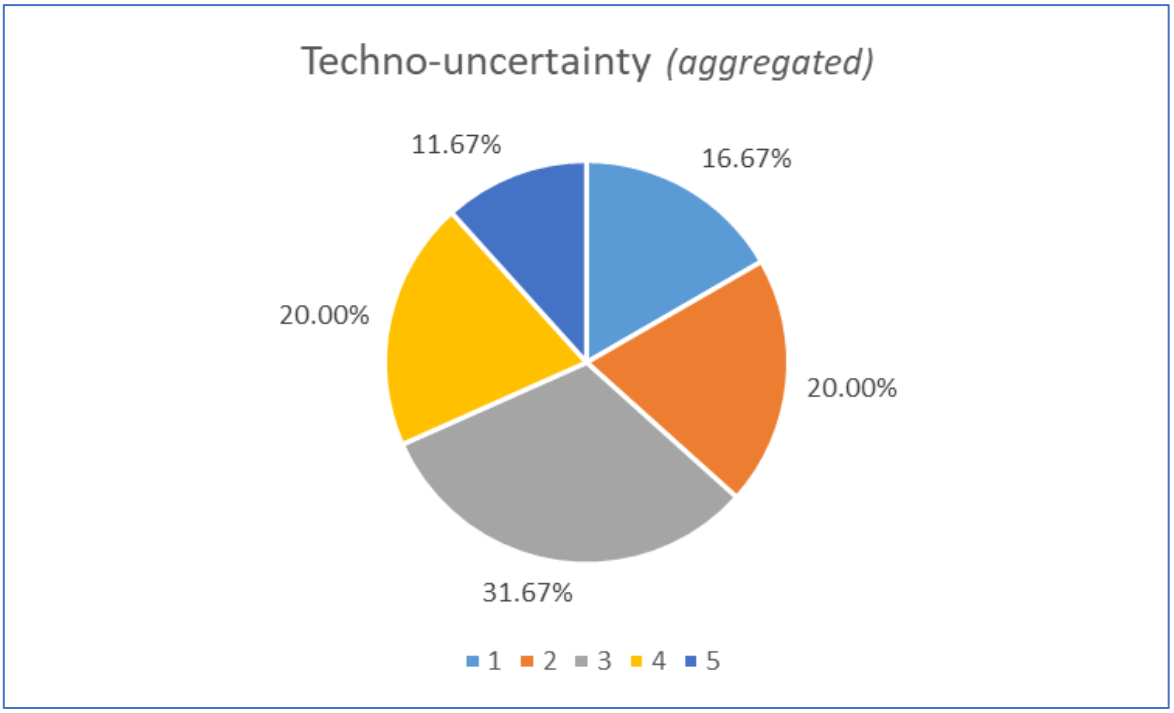

Figure 16 – Count of each answer provided for the Techno-uncertainty part

4.4.3 Technostress Inhibitors

The questions in the section technostress creators were used to investigate the phenomenon of technostress – the stress caused by the extensive use of technologies at work to employees. In particular, the section's questions measure the impact of technostress inhibitors – the factors that reduce the level of technostress or offset its negative effects.

The data analysis has been performed for each category of the technostress inhibitors: literacy facilitation, technical support provision, and involvement facilitation.

Technostress Inhibitors		
Dimension measured	**Question**	**Mode (statistics)**
Literacy facilitation	Our organization encourages knowledge sharing to help deal with new technology.	4
	Our organization emphasizes teamwork in dealing with new technology-related problems.	4
	Our organization provides end-user training before the introduction of new technology.	4
	Our organization fosters a good relationship between IT department and end users.	4
	Our organization provides clear documentation to end users on using new technologies.	3
Technical support provision	Our end-user help desk does a good job of answering questions about technology.	3
	Our end-user help desk is well staffed by knowledgeable individuals.	5
	Our end-user help desk is easily accessible.	5
	Our end-user help desk is responsive to end-user requests.	5
Involvement facilitation	Our end users are encouraged to try out new technologies.	5
	Our end users are rewarded for using new technologies.	2
	Our end users are consulted before introduction of new technology.	1
	Our end users are involved in technology change and/or implementation.	3

Table 6 – List of questions with related mode for the Technostress Inhibitors part

4.4.3.1 Literacy facilitation

Percentage of the total questions:

- "1 = Strongly disagree": 10.00%
- "2 = Disagree": 11.33%
- "3 = Neutral": 20.67%
- "4 = Agree": 34.67%
- "5 = Strongly agree": 23.33%

For the category literacy facilitation, the majority of the answers received are "4 = Agree" (34.67%) and "5 = Strongly agree" (23.33%).

The top answers – "4 = Agree" and "5 = Strongly agree" – count for 58.00% of the total answers for the category.

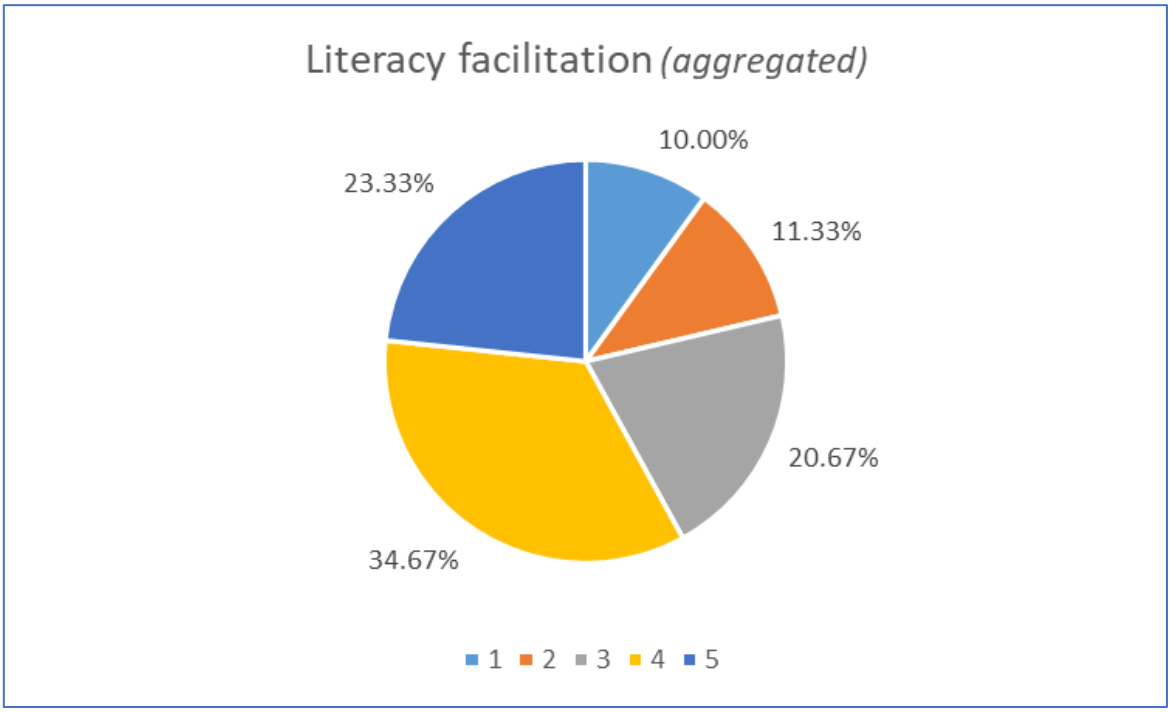

Figure 17 – Count of each answer provided for the Literacy facilitation-overload part

4.4.3.2 Technical support provision

Percentage of the total questions:

- "1 = Strongly disagree": 1.67%
- "2 = Disagree": 19.17%
- "3 = Neutral": 24.17%
- "4 = Agree": 22.50%
- "5 = Strongly agree": 32.50%

For the category technical support provision, the majority of the answers received were "3 = Neutral" (24.17%) and "5 = Strongly agree" (32.50%).

The questions “4 = Agree” and “5 = Strongly agree” count for 55.00% of the total.

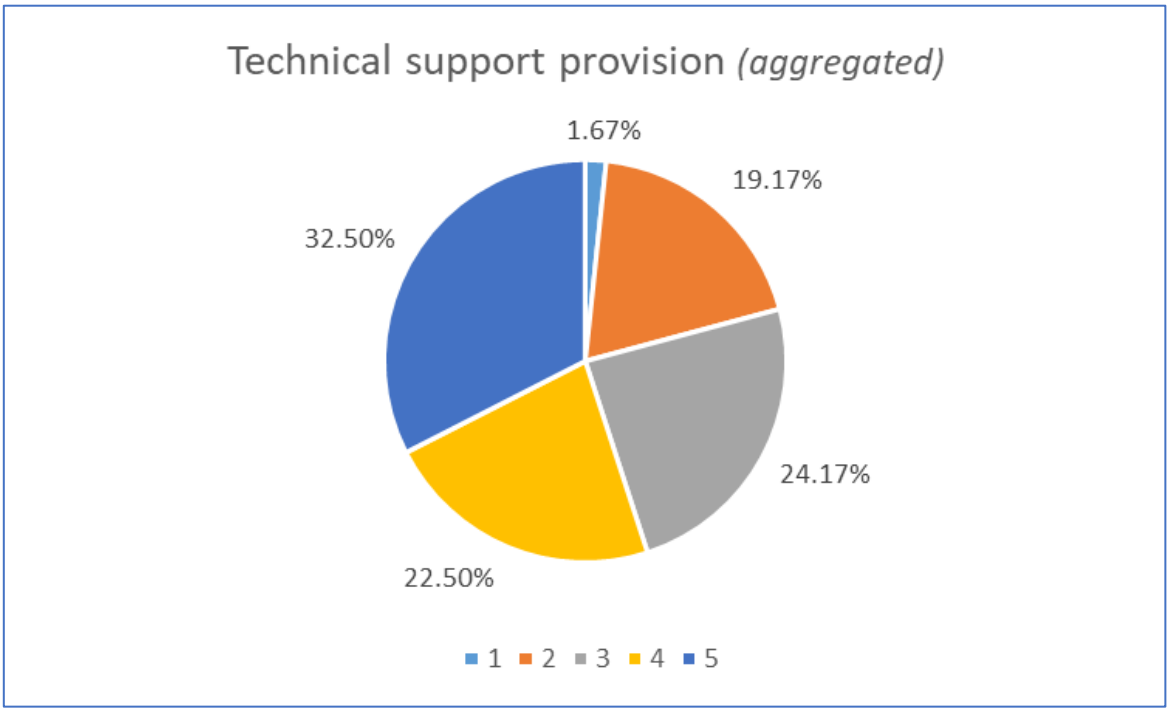

Figure 18 – Count of each answer provided for the technical support provision part

4.4.3.3 Involvement facilitation

Percentage of the total questions:

- “1 = Strongly disagree”: 20.00%
- “2 = Disagree”: 24.17%
- “3 = Neutral”: 22.50%
- “4 = Agree”: 20.00%
- “5 = Strongly agree”: 13.33%

In the category involvement facilitation, most of the answers received were almost equally distributed around 20%, except for the answer “5 = Strongly agree” (with a 13.33%).

The questions “4 = Agree” and “5 = Strongly agree” count for 33.33% of the total.

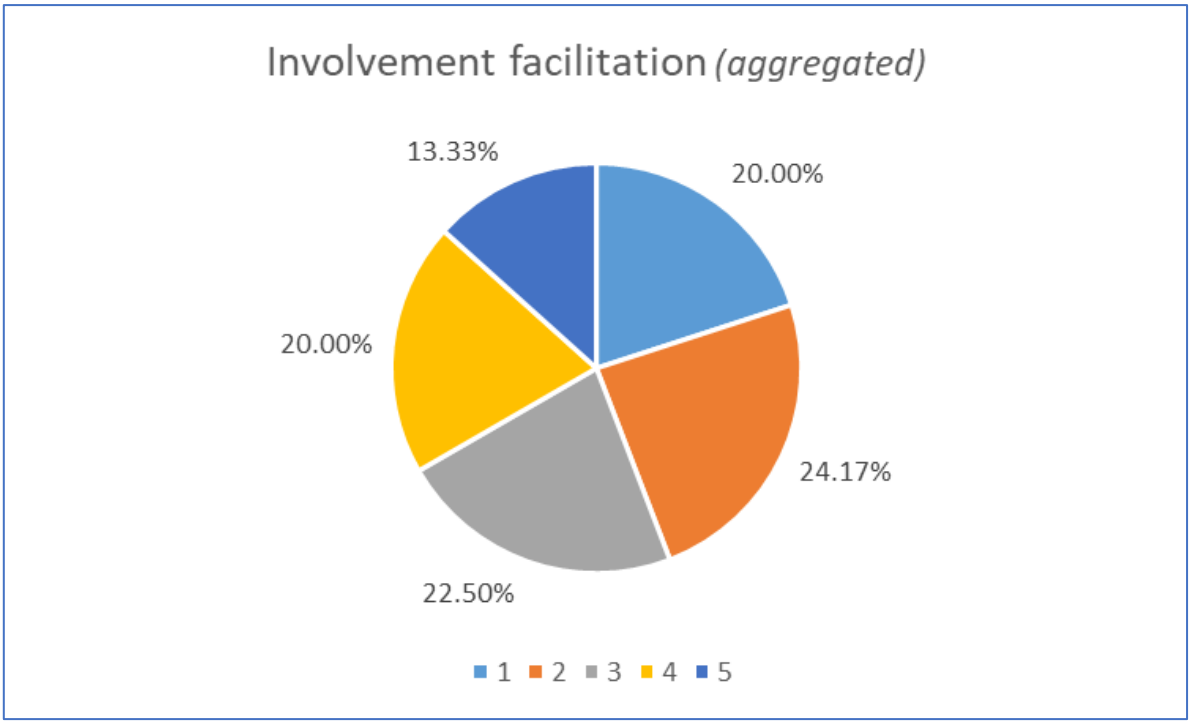

Figure 19 – Count of each answer provided for the Involvement facilitation part

4.4.4 Job satisfaction

The questions in the section job satisfaction were used to measure the positive emotional state felt by employees resulting from the positive evaluation of their job.

Job Satisfaction	
Question	**Mode (statistics)**
I like doing the things I do at work.	5
I feel a sense of pride in doing my job.	5
My job is enjoyable.	5

Table 7 – Job satisfaction (mode)

Percentage of the total questions:

- "1 = Strongly disagree": 2.22%
- "2 = Disagree": 8.89%
- "3 = Neutral": 17.78%
- "4 = Agree": 27.78%
- "5 = Strongly agree": 43.33%

The majority of the answers received are "5 = Strongly agree" (43.33%).

The top two answers – "4 = Agree" and "5 = Strongly agree" – count for 71.11% of the total answers of the section.

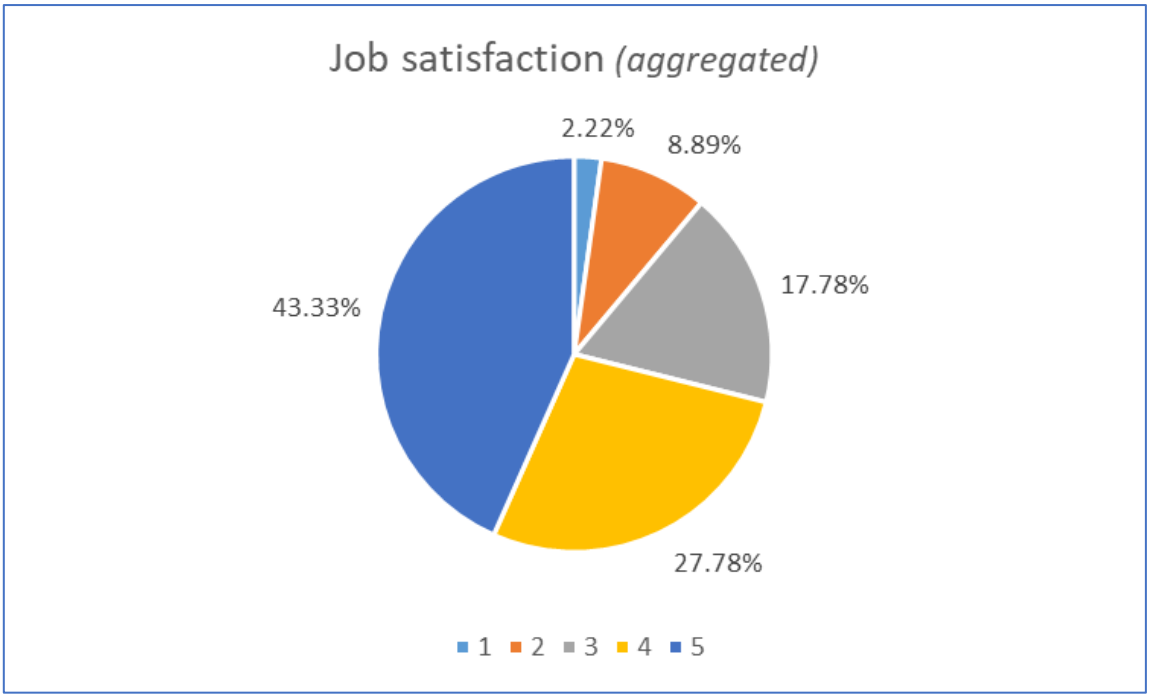

Figure 20 – Count of each answer provided for the Job satisfaction part

4.4.5 Organizational commitment

The questions in the section continuance commitment were used to measure the employee's level of identification with and involvement in the company they work for.

Organizational Commitment	
Question	**Mode (statistics)**
I would be happy to spend the rest of my career in this organization.	4
I enjoy discussing my organization with people outside it.	5
I really feel as if this organization's problems are my own.	5
This organization has great deal of personal meaning for me.	5

Table 8 – Organizational commitment (mode)

Percentage of the total questions:

- "1 = Strongly disagree": 17.50%
- "2 = Disagree": 9.17%
- "3 = Neutral": 19.17%
- "4 = Agree": 23.33%
- "5 = Strongly agree": 30.83%

The majority of the answers received are "4 = Agree" (23.33%) and "5 = Strongly agree" (30.83%).

The top two answers – "4 = Agree" and "5 = Strongly agree" – count for 54.17% of the total answers of the section.

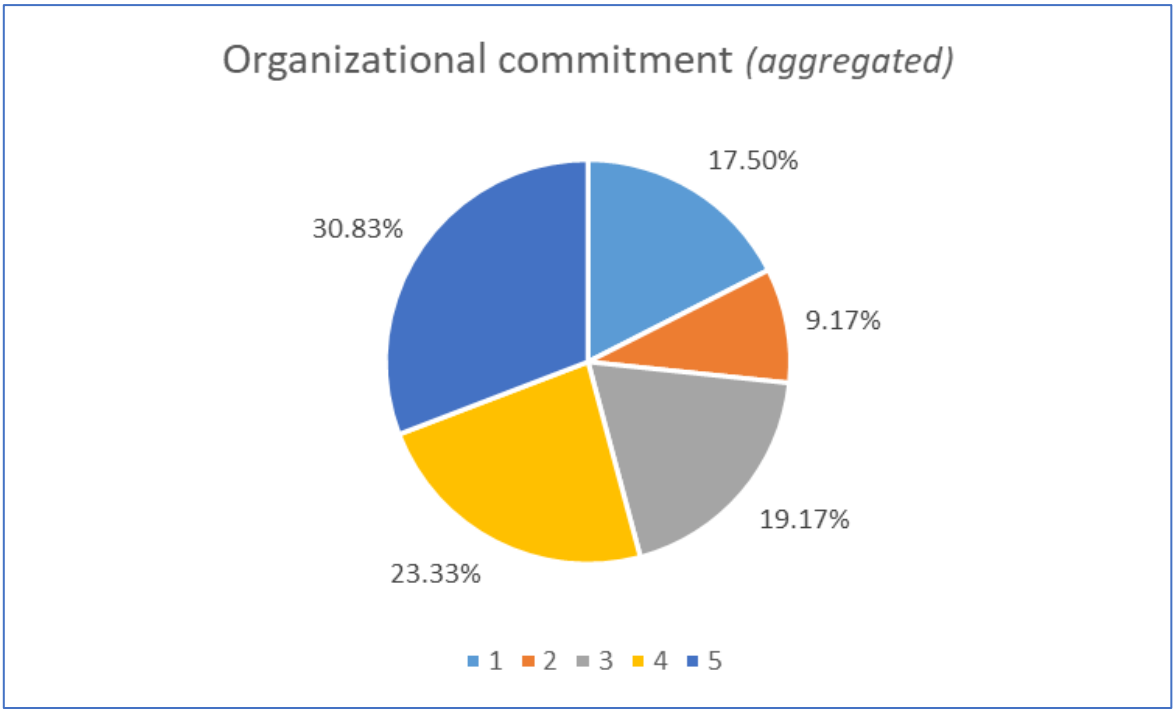

Figure 21 – Count of each answer provided for the Organizational commitment part

4.5 Conclusion

The data collected seems suggesting a correlation between technology and engagement also between the small and medium-sized enterprises in Italy. The employees interviewed for the research showed positive perceived feelings produced by their use of technology at work (TechnoWES scale): the participants who "agree" or "strongly agree" to statements that affirm to experience positive feelings as an outcome of the use of technology were the majority – 53.33%.

The opposite was observed in the section that measures the impacts of technostress creators. This supports the negative correlation of engagement with the technostress creators. The higher the levels of technostress creators are, the lower the level of engagement will be.

Having observed positive levels for the TechnoWES scale, it was supposed to observe low levels for technostress creators. Indeed, for most of the technostress creators sections – techno-invasion, techno-complexity, and techno-insecurity – the majority of answers are "1 = Strongly disagree" and "2 = Disagree". Respondents who answered "1 = Strongly disagree" or "2 = Disagree" to the questions of the sections techno-invasion, techno-complexity, and techno-insecurity are 50.83%, 52%, and 76%, respectively.

Similarly, having observed positive levels for the TechnoWES scale, it was supposed to equally observe high levels for technostress inhibitors. This supports the positive correlation of engagement with the technostress inhibitors. The higher the levels of technostress inhibitors are, the higher the level of engagement will be.

For two of the three groups in the technostress inhibitors – literacy facilitation, and technical support provision – it has been observed a majority of “4 = Agree” and “5 = Strongly agree” answers. Aggregating the answers “4” and “5”, they count for 58% in the literacy facilitation section, and for 55% in the technical support provision section.

Furthermore, it has been observed high levels for job satisfaction and organizational commitment. Also these two last measurements are supported by the positive levels observed with the TechnoWES scale. The low presence of technostress creators and the high presence of technostress inhibitors, in addition to experience positive feelings as outcome of the use of technology at work, bring to a satisfying job and to a commitment to the company someone is working for. Lastly, for the job satisfaction section, the respondents of “4 = Agree” or “5 = Strongly agree” are 71.11%, while for the organizational commitment one is 54.17%.

5 Results and Data analysis – Qualitative data

5.1 Introduction

The findings from the analysis of the in-depth personal interviews (qualitative analysis) are showed in this section. Indeed, built on the analysis of the questionnaire, the research continued with the analysis of interviews, and the following chapter shows that qualitative analysis's process and the insights discovered.

5.2 Participants

The employees invited for the interview process were nine from different companies, from different sectors, industries, positions, and (Italian) territories. All these diversities allowed the researcher to analyze data from different environments having little or nothing in common, and this helped to find a common trend, that was not specific to a particular industry, sector, or territory.

Most of the participants to the study is from the North region of Italy, and no one comes from the Center one.

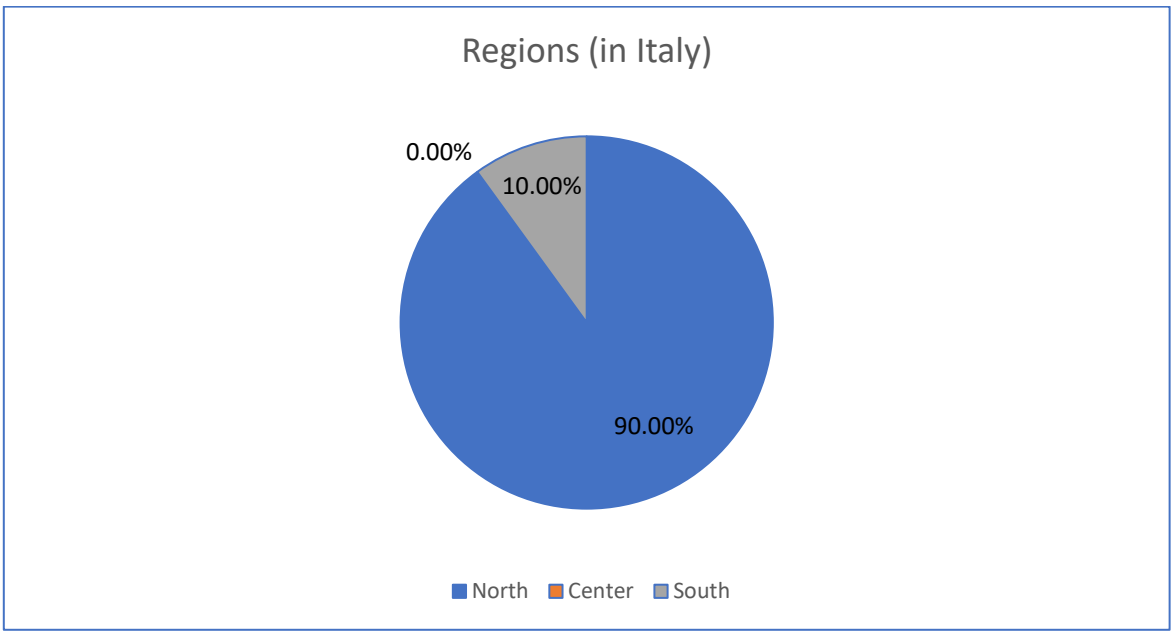

Figure 22 – Regions of Participants' Companies

The majority of the participants in the study (56%) are from medium-sized companies (more than 100 employees), whereas participants from companies with employees between 51 and 100 count for 33% of the entire sample.

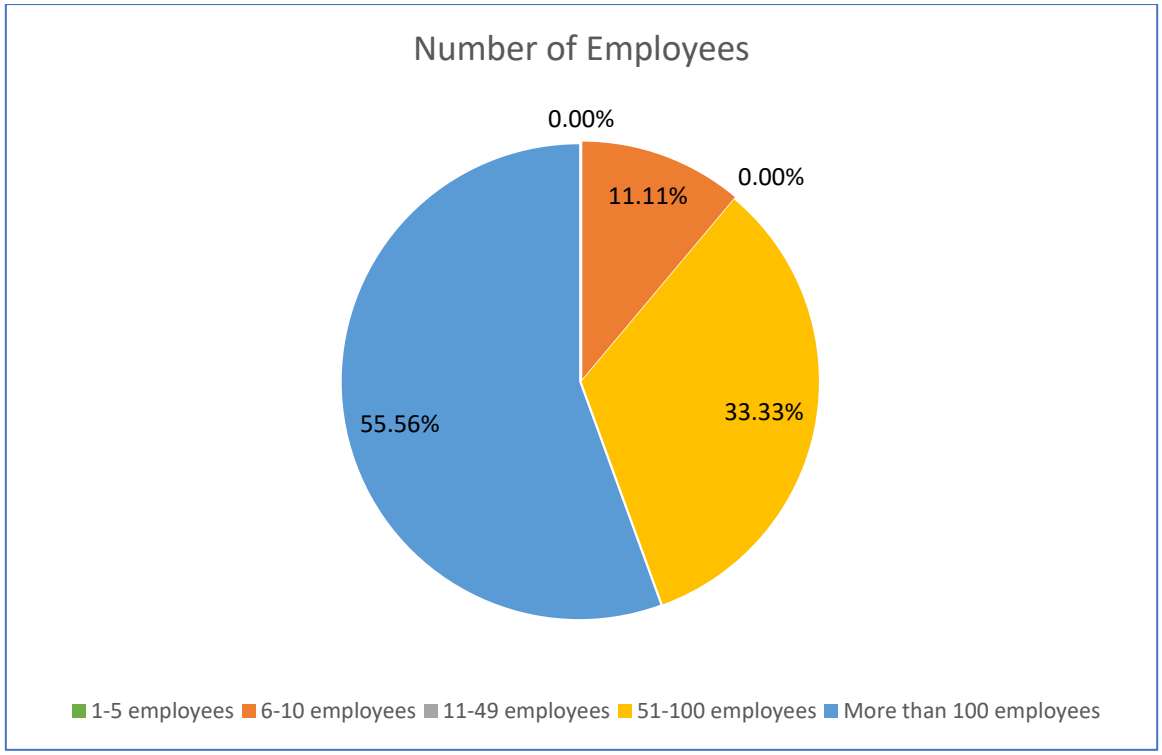

Figure 23 – Number of Employees of Participants' Companies

The employees interviewed are from a few industries (represented: Food, IT | Consultant, Public Health, Services | B2B, and Other), with a majority of companies from the Services sector.

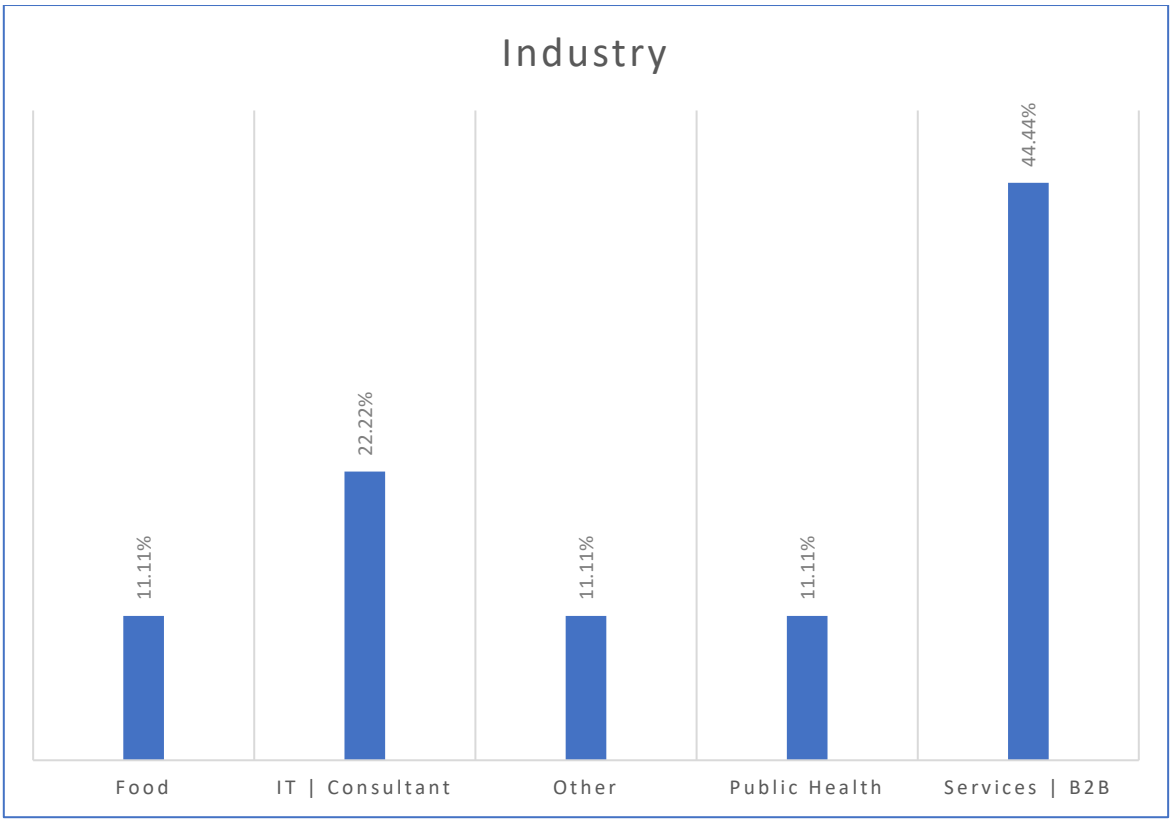

Figure 24 – Industries of Participants' Companies

5.3 Key Words and Main Themes

5.3.1 Word cloud

The following section shows the most frequently words used during the interview process through the visual representation of the *word cloud* framed in the map of Italy. The world cloud image has been elaborated using the web platform *WordClouds.com*.

Figure 25 – Word cloud

5.3.2 Words frequencies and analysis

The values that follow show the frequency of each word or similar words per each question; moreover, to simplify the comprehension they are expressed in percentage (with the exception of some quotes where the value expresses the recurrence in digits). Tables with numbers in digits (instead of percentage) are available in Appendix B.

The following table shows the aggregated responses to the question 'What words would you use to describe your mood when you are at work?'. The question helped to analyze the moods felt by employees while working; it is crucial to know employees' feelings when at work to be able to analyze their engagement.

State of mind when at work		
Positive feeling	22%	
		Feeling actionable
		Feeling motivated
Negative feeling	44%	
		Agitation
		Anxiety
		Boredom
		Dissatisfaction
		Frustration
		Resignation
		Tension
		Tiredness
		Uselessness
Both	33%	

Table 9 – Word counts | Employees mood while working

The following table shows the aggregated responses to the question 'Is that changed in the last six months?' and 'If so, why?'. The question helped to analyze if something changed in employees' mood during the last six months, and the reason for the change. It has been used, where recent changes in employers occurred, to compare the different working environments and receive comments about them from the same employee. The researcher had the chance to interview two employees who moved, in the last months, from one Italian company to a foreign one and vice versa, and this opportunity helped also to double check results obtained from other interviews.

It is quite interesting to observe that the improved working condition occurred in the presence of a new job (i.e., a completely new environment) and a greater job awareness (caused by an increased perception in employee's position because of greater responsibilities and higher esteem by her direct manager).

Change during last 6 months		
		Reasons
Improved	33%	
		Greater job awareness
		New job
Worsen	44%	Worsening of the working situation
Same	22%	N/A

Table 10 – Word counts | Mood change in the last 6 months

The following table shows the aggregated responses to the question 'What words would you use to define your company?'. Unfortunately for Italian SMEs, more than half of the words used by interviewees to describe the company they work for were negative, and only one third of them were positive like *enjoyable* or *stimulating*.

Company description		
Positive	35%	
		Enjoyable
		Inclusive
		International
		Open to change
		Precise
		Stimulating
Neutral	10%	
		Complex
		Normal
Negative	55%	
		Contradictory
		Demeaning
		Disorganized
		Not present
		Obsolete
		Oppressive
		Profiteering
		The result matters, not the how
		Useless

Table 11 – Word counts | Employees' words to describe their companies

The following table shows the aggregated responses to the question 'What words would you use to define your job?'. The perception of jobs is a little bit different compared to the one related to companies, the words with positive and the ones with negative sense were equally used.

Job description		
Positive	44%	
		Always new
		Fulfilling
		Interesting
		Stimulating
Neutral	11%	
		Concrete
		Organizational
Negative	44%	
		Boring
		Chaotic
		Not very stimulating
		Stressful

Table 12 – Word counts | Employees' words to define their jobs

The following table shows the aggregated responses to the question 'How would you evaluate your relationship with your direct supervisor?'. The results from the previous two questions (employees' perceptions on company and job) with this one clearly point as the main problem for the poor employee engagement in Italian SMEs to the company's approach to its employees. It is important to clarify that with *company* interviewed employees referred to owners and to executives of the company, and not to their direct supervisor (the latter is the object of the current question).

Supervisor description		
Positive	78%	
Negative	22%	
		Fake
		Nonexistent

Table 13 – Word counts | Employees' evaluation of relationship with their supervisors

The following table shows the aggregated responses to the question 'How would you evaluate your relationship with your colleagues?'.

Colleagues description		
Positive	50%	Good/excellent
Neutral	33%	Improvable
Negative	17%	Nonexistent

Table 14 – Word counts | Employees' evaluation of relationship with their colleagues

The following table shows the aggregated responses to the question 'Does someone explain company's objectives to be achieved and why to you?'.

Goals communicated	
Yes	22%
No	44%
Partially	33%

Table 15 – Word counts | Goals communicated

The following table shows the aggregated responses to the question 'What does cause you stress at work?'. It is important to highlight that the most causes of negative stress at work are related to owners and (higher) management: employees complain about poor planning, and poor communication; furthermore, they denounce the incompetence of several managers.

Stress causes at work	
Absence/Poor Programming-Planning	29%
Absence/Poor Communication	24%
Incompetence (of management)	18%
Be appointed to a role/position I can't handle	6%
Lack of consideration for the employee	6%
Lack of professional growth	6%
Poor quality of work	6%
The (internal) competition	6%

Table 16 – Word counts | Stress causes at work

The following table shows the aggregated responses to the question 'What do you think is the biggest obstacle to employee engagement?'. Employees include poor communication inside the company (i.e., no information is shared between units and teams) and poor dialogue in the list of main barriers to engagement. The other main obstacle to engagement is the company owners' lack of consideration for the employee. Furthermore, because that unfortunate behavior comes from the top of the company, it is spread to all the company's levels.

Hurdle to engagement	
Absence/Poor Communication (No Information Sharing)	27%
Absence/Poor Dialogue	27%
Lack of consideration for the employee	27%
Competition among colleagues	9%
Lack of organization	9%

Table 17 – Word counts | Hurdle to engagement

The following table shows the aggregated responses to the questions 'In general (in everyday life), how would you rate your relationship with technology?' and 'And what impact does technology have on your personal life?'. The word *impact* here refers to the extent of the effect made on employee's life

by technology (i.e., how disruptive technology is on employee's life). Almost all the interviewed employees have a positive (or at least neutral) relationship with technology, with only one exception who declared <*I avoid it when I can*>. (Participant 7)

Technology and personal life	
Relationship with technology	
Good	78%
Neutral	11%
Bad	11%
Impact on personal life	
High	89%
"I avoid it when I can"	*1*

Table 18 – Word counts | Impact of technology on personal life

The following table shows the aggregated responses to the questions 'At work, how would you rate your relationship with technology?' and 'And what impact does technology have on your professional life?'. The word *impact* here refers to the extent of the effect made on employee's life by technology (i.e., how disruptive technology is on employee's life).

Technology and professional life	
Relationship with technology	
Great	29%
Could be improved	29%
Essential	43%
Impact on professional life	
High	89%
Moderate	11%

Table 19 – Word counts | Impact of technology on professional life

The following table shows the aggregated responses to the questions 'Three words that positively describe the impact technology has on your life' and 'Three words that negatively describe the impact technology has on your life'.

Employees' words to describe technology	
3 positive words	
Solves	26%
Helps keeping relationships	21%
Informs	16%
Keeps company	16%
Forms/trains	11%
Enabling	5%
Essential	5%

3 negative words	
Steals time	25%
Addiction	19%
Health problems from overuse	13%
Intrusiveness	13%
Weakens communication (between people)	13%
Difficulty of use	6%
Environmental impact	6%
Reduces human capabilities	6%

Table 20 – Word counts | Employees' words to describe technology

The following table shows the aggregated responses to the questions 'Have you selected the technologies you use at work most?'.

Have you selected the technologies you use at work most?	
Yes	0%
Partially	22%
No	78%

Table 21 – Word counts | Selection of technology at work

The following table shows the aggregated responses to the questions 'If not, who does make these decisions and how have you been asked to use them?'.

Who does make technology selection and training	
respondents	
7	Company or dedicated team
2	The customer we work for
4	Word of mouth and/or self-taught (sometimes, superficial training)
1	Official courses and training
1	Technical support team

Table 22 – Word counts | Selection of technology at work and training

The following table shows the aggregated responses to the questions 'At work, have you ever been asked for your opinion about one technology used in your company (or that would be introduced)?'.

At work, have you ever been asked for your opinion about one technology used in your company (or that would be introduced)?	
Yes	33%
Partially	17%
No	50%

Table 23 – Word counts | Opinion on technology used at work

The following table shows the aggregated responses to the questions 'Does your company offer you team building or well-being activities?'.

Does your company offer you team building or well-being activities?	
Yes	11%
"Only in theory"	11%
No	78%

Table 24 – Word counts | Team building and well-being activities at work

The following table shows the aggregated responses to the questions 'Do you participate in them?'.

Do you participate in them?	
Yes	13%
"Yes, if offered"	75%
No	11%

Table 25 – Word counts | Participation to team building and well-being activities

The following table shows the aggregated responses to the questions 'In your private life, do you make meditation?'.

In your private life, do you make meditation?	
Yes	50%
Sometimes	17%
No	33%

Table 26 – Word counts | Meditation in private life

The following table shows the aggregated responses to the questions 'Would you practice meditation if your company offered it to you?'.

Would you practice meditation if your company offered it to you?	
Yes	78%
Maybe	11%
No	11%

Table 27 – Word counts | Meditation at work

The following table shows the aggregated responses to the questions 'Would you use an App created to bring together your company's proposals for working life (for example: how to create communities at work; share information with company and colleagues; receive and give feedback; recreate the *coffee machine* in a virtual way to meet colleagues; to learn new skills and notions; but also, to take advantage of well-being programs)?'.

Would you use an App created to bring together your company's proposals for working life?	
Yes	88%
No	13%

Table 28 – Word counts | Willingness to use an APP for working life

The following table shows the aggregated responses to the questions 'Why?'.

Reasons for using the APP	
44%	Help to know each other better
22%	Same information for everyone
22%	Usefulness
11%	Sense of involvement

Table 29 – Word counts | Willingness to use an APP for working life (reasons)

The following table shows the aggregated responses to the question 'How do you think Italian companies are performing in terms of employee engagement globally?'. This question was asked to evaluate employees' perception on how Italian SMEs are performing against foreign ones in terms of employee engagement. All the participants said they believe that the poor performance regarding employee engagement they are experiencing is a common situation in all the country.

Italian SMEs' employee engagement level against foreign	
Well	0%
Neutral	0%
Bad	100%

Table 30 – Word counts | Perception on Italian SMEs engagement against foreign ones

The following table shows the aggregated responses to the question 'Why do you think companies in Italy do so badly in terms of employee engagement?'. All the participants pointed to a *cultural problem* (no culture of the employee, old mentality, do not think a different administration style exist, no room for young workers, etc.), and a *lack of management* (inability of management, do not know how to communicate, etc.) as the main causes of the poor employee conditions in Italian SMEs.

Why Italy so bad	
We no longer have the culture of the employee, of the human resource	42%
Inability of management	17%
Companies do not know how to communicate	8%
Companies do not know how to plan	8%
Companies do not think that there are alternative ways	8%
No room is left for young people	8%
Old mentality	8%

Table 31 – Word counts | Employees' suppositions of the poor performance on engagement

The following table shows the aggregated responses to the question 'What are your top three concerns at work right now?'.

Main concerns	
Not achieving goals	16%
Psychological	16%
Health	11%
Reduction of turnover	11%
being involved in a job I do not like	5%
I do not see a future	5%
increase in workload	5%
Lack of personal time	5%
Lack of turnover (people renewal)	5%
Legal	5%
The salary that is not enough (for inflation)	5%
to be fired	5%
Transfer to another company	5%

Table 32 – Word counts | Main current employees' concerns at work

The following table shows the aggregated responses to the question 'If you could suggest one recommendation to your company, what would it be?'.

Advice to employer	
Improve communication and dialogue (between company and employees)	33%
Give credit (to employees)	17%
Improve company's organization	17%
Take care of the employee	17%
Increase automation	8%
Make room for young people	8%

Table 33 – Word counts | Recommendation to company

The following table shows the aggregated responses to the question 'Do you have any concluding comments?'.

Final comment	
	respondents
"I want to quit"	3
"I hope interviews like this can lead to greater awareness among workers and employers"	1
"I hope the organization and planning will improve"	1
"[companies should] look elsewhere to improve their situation" (i.e., get new ides to improve engagement)	1

Table 34 – Word counts | Employees' final comments

5.3.3 Main themes and tree nodes

This section shows the findings from the interviews that have been grouped according to the main themes as they emerged from the analysis of interviews: following the thematic analysis, data from interviews has been organized in a thematic structure of main headings (tree nodes) and their sub-headings (daughter nodes).

The following table shows the tree and daughter nodes structure – main headings, sub-headings – from thematic analysis; it also shows the number of sources contributing to each tree node (i.e., the number of interviewees supporting the heading).

Main Headings (tree nodes)	Sub-headings (daughter nodes)	Sources
Employees' feelings		
	Related to company	9
	Related to job/activities carried out	9
	Related to her/his mood	9
	Concerns about future	9
	Stress at work	9
Employees' relationship		
	With her/his boss	9
	With her/his colleagues	6
Employees on engagement		
	Hurdle to engagement	8
	Suggestions to company	9
	Situation in Italy (employee's perceptions)	9
Technology		
	At work	9
	In personal life	9

Table 35 – Main themes | Tree and daughter node structure

5.4 Discussion

The current research is a combination of both describing the current impact of technology on employee engagement in SMEs (exploratory study) and assessing the extent to how technology can drive engagement (evaluative study) through the two research questions 'To what extent is technology enhancing work engagement in Italian SMEs?' and 'How is technology increasing (or decreasing) work engagement?'.

5.4.1 Research Question 1: To what extent is technology enhancing work engagement in Italian SMEs?

From the interviews emerged very clear that the main impact on employee engagement is from the quality of activities performed at work and, above all, from the quality of the relationship with boss and colleagues, rather than the technology itself. It came out that where the relationship with the direct supervisor and/or with colleagues was good, the engagement was higher (compared to the other interviewed employees), and that helps employee to handle with everyday stress. Unfortunately, that was true only at unit level and not valid for the entire company: the relationship with the company's top levels is, in most cases, very poor, and that causes disengagement. In other words, where the employee had a good relationship with her colleagues, she had a greater opportunity to feel less pressure and was inclined to work at the best possible, whereas the relationships were bad (or missing) employees feel more the stress to the point that some of them (participants 1, 4, and 8) want to resign.

One of the main perceived problems by employees is the presence of high negative stress at work and, unfortunately, nothing is done by their companies to reduce it. Instead, where the relationships among colleagues, and employee and manager are good, they join forces to correct companies lacks finding ways to reduce the negative stress. The principal way used by employees is organizing (by themselves) team building activities both in and outside the office.

<*My company does not propose us anything, but I organize activities with colleagues, like play beach volley or go out for dinner all together.*> (Participant 5)

<*We have created a WhatsApp group to connect colleagues in different locations, and sometimes we use it for joking and so reducing the stress.*> (Participant 2)

Moreover, the researcher had also the chance to interview workers who moved from an Italian company to a foreign one and vice versa in the last six months. This opportunity helped to strengthen the results that Italian companies are poorly performing in terms of employee engagement because of the Italian employers' custom regarding their employees. At Italian companies, employees are not treated as important and with respect; foreign employers behave as the opposite.

<*Now, I am relaxed, happy. […] Before I was annoyed, stressed […] I didn't have stimulus, a complete lack of stimulus.*> (Participant 3 – moved to a foreign company in the last six months)

<*In this period, I am feeling quite bored at work. […] I can define myself annoyed.*> (Participant 8 – moved to an Italian company in the last six months)

To mention all the interviewed employees' point of views, the central reasons for the poor engagement at Italian companies are the *employers' culture* (i.e., how employers perceive their employees and their role at company), and the *lacking management*.

<I think it's very much the Italian mentality, a bit bossy, perhaps of family businesses, where there are the owners (who administer the company)>. (Participant 5)

<Emergency is the norm. […] Managers administer companies by attempts, and they move forward only by chance, they are not able to do it at all.> (Participant 6)

5.4.2 Research Question 2: How is technology increasing (or decreasing) work engagement?

It is possible to consider, based on the interviews, that technology is a catalyst that could be used to amplify positive relationships at work and to be used to speed up and simplify tasks, although not for improving engagement per se. It is possible to refer to technology as a facilitator (for making easier, safer and faster tasks, for improving relationships, etc., in both worlds private and professional) with a substantial impact on the performance. At the same time, during all the interview process, no clues were found that could support the active role of technology alone on employee engagement – neither raising engagement nor decreasing it.

Furthermore, what was clearly revealed from the interviews is the controversial approach of the Italian SMEs regarding technology. All the interviewed employees, with different degrees, want more technology at their companies or, at least, the optimization of the one already in use. Employees ask for more technology in their companies principally for reducing errors, advancing performance, and making easier their tasks and, thus, improving their working lives. On the opposite side, there are employers that do not want to introduce more technology into their companies principally because they feel technology at work worthless and, above all, costly.

5.5 Conclusions

The data collected from the interviews provides a clear picture of the current situation of employee engagement at Italian SMEs, especially the employees' feelings and the reasons behind them. The interviews taken from employees working at SMEs completely supported the poor performance of Italian companies (on average) described by Gallup in its reports.

The first important aspect that clearly emerged from interviews is the general negative feelings felt by most of the interviewed employees. More than half of the words used by interviewees to describe the company they work for were negative, and only one third of them were positive like *enjoyable* or *stimulating*. Employees' perception of jobs is a little bit different instead; here, the words with positive and the ones with negative meaning were equally used (44% of words used were positive, 44% were negative, and 11% were neutral, percentages rounded).

The second interesting aspect is that it seems the main impact on employee engagement comes from the quality of activities performed at work and, above all, from the quality of the relationship with boss and colleagues, rather than the technology itself (i.e., only from technology).

From the data analysis it is possible to consider technology as a catalyst that could be used to amplify positive relationships at work and to be used to speed up and simplify tasks, although not for improving engagement per se. It emerged that technology, for both worlds private and professional, makes tasks easier, safer, faster, it improves relationships, and it has a substantial impact on performance. At the same time, during all the interview process, no clues were found that could support the active role of technology alone on employee engagement – neither raising engagement nor decreasing it.

It is quite interesting to observe that, among the interviewed workers, the improvement in working condition in the last months occurred for only two of them and at the presence of a new job (i.e., a completely new environment) and a greater job awareness (caused by an increased perception in employee's position because of greater responsibilities and higher esteem by her direct manager).

A third aspect is the companies' indifference to their employees' feelings and mental conditions at work. Even though one of the principal problems perceived by employees is the presence of high negative stress at work, nothing is done by their companies to reduce it. In companies where relationships among colleagues are good, employees themselves join forces to correct companies lacks finding ways to reduce the negative stress: they autonomously organize team building activities both in and outside the workplace. Even if it emerged that where the relationships with direct supervisors and colleagues were good the engagement was higher (compared to the other interviewed employees), that was valid only at team level and not for the entire company. A good relationship with colleagues and direct supervisors helps employees to handle everyday stress, but it is not enough to avoid disengagement if offset by a poor relationship with the company's top levels (that, for Italian SMEs, are often the owners of the company). It is important to remind here that, in the case of SMEs, contact with top levels happens daily, or at least very often in the week.

A final aspect that emerged from the interviews was that all the interviewed workers agreed on the central reasons for the poor engagement at Italian companies: the *employers' culture* (i.e., how employers perceive their employees and their *role* at company), and the *lacking management*.

Moreover, the researcher had also the chance to interview workers who moved from an Italian company to a foreign one and vice versa in the last six months. This opportunity helped to strengthen the results that Italian companies are poorly performing in terms of employee engagement because of the Italian employers' custom regarding their employees. At Italian companies, employees are not treated as important and with respect, foreign employers behave as the opposite.

Furthermore, interviewed workers declared that the most causes of negative stress at work were related to owners and (higher) management: employees complain about poor planning, and poor communication; in addition to that, they denounce the incompetence of several managers.

Employees claim as the main barriers to engagement the poor communication inside the company (i.e., no information is shared between units and teams), the poor dialogue, and the company owners' lack of consideration for the employee. Additionally, because that unfortunate behavior comes from the top of the company, it is spread to all the company's levels.

This point is clarified even more by the employees' suggestions to their companies: <*Improve communication and dialogue [between company and employees]*>, <*Give credit [to employees]*>, <*Improve company's organization*>, <*Take care of the employee*>, and <*Make room for young people*>.

Lastly, most interviewed workers described the impact of technology on their lives as *high*, the word *impact* here refers to the extent of the effect made on employee's life by technology (i.e., how disruptive technology is on employee's life). Moreover, almost of them also have a positive (or at least neutral) relationship with technology.

Furthermore, what was clearly revealed from the interviews is the controversial approach of the Italian SMEs regarding technology. All the interviewed employees, with different degrees, want more technology at their companies or, at least, the optimization of the one already in use. Employees ask for more technology in their companies principally for reducing errors, advancing performance, and making easier their tasks and, thus, improving their working lives. On the opposite side are employers that do not want to introduce additional technology into their companies principally because they identify technology at work as worthless and costly.

6 Findings discussion

6.1 Introduction

The chapter starts showing the theories and explaining in detail the rationale that are behind the best practice model that culminates in the adoption of a new digital platform designed for improving engagement among Italian SME's workers. The chapter also contains examples of approaches to improve engagement currently adopted by some practitioners and introduces the problem of the scarce participation to well-being initiatives by employees.

The best practice model has been thought as practical as possible and for this reason it has been designed around three main parts, namely 'design employee engagement initiatives', 'improving suggestions', and 'the digital tool'. Its description ends the chapter.

6.2 Technology and its impact on organizations

Companies use technology to build competences and create value; moreover, they can use it to improve communication and workers' life.

With the terms *technology* we refer not only to physical instruments – like computer, smartphone, and production machine –, or only tangible materials used in production, or intangible like software used in every office; but, also the skills, knowledge, abilities, and know-how of people at work.

Moreover, it is possible to categorize technology depending on its level in the company under three levels: individual level (e.g., skills, knowledge, abilities of single person); functional/department level (e.g., procedures and techniques at level of teams); company level (e.g., know-how of entire company).

6.2.1 Consequences of technology for employees

The study of disorders associated to the use of technology (in particular the reactions to the Information and Communication Technologies – ICTs) at workplace is not new among scholars of psychology, organizational behavior, and information systems just to cite some.

It has been observed and studied *anxiety and tension* by Heinssen (Heinssen, Glass, & Knight, 1987), *perceived higher work pressures and job dissatisfaction* by Smith (M. J. Smith, Cohen, Stammerjohn, & Happ, 1981), and *ambiguity from the job demands* by Love (Love, Simpson, & Walker, 1989).

Moreover, several analyses have been conducted between professionals of technology, analyzing the impacts on the feelings of those workers because of the rapid obsolescence of technical skills, and the demanding requirements for supporting end users (Sethi, King, & Quick, 2004; Thong & Yap, 2000).

Furthermore, with the current extensive use of technology by end users (for example, the growth and intensive use of computing and communication technologies in everyday life), the researchers started

to witness a widespread feeling of stress related to the large use of technology – now, no more common only between ICT professionals, like was used to notice just a few years ago – that is referred as *technostress* (Brillhart, 2004; Clark & Kalin, 1996; Weil & Rosen, 1997). Like happen for ICT professionals, also the end users (i.e., workers; nowadays everyone uses ICT extensively during both work and personal life) face the negative spillover caused by using technologies that continually evolve, and the changes in interactions with others and everyone's habits brought by those technologies. Some of the negative consequences have been evidenced (Brod, 1984; Weil & Rosen, 1997) in perceived work overload, demoralized and frustrated users, information fatigue, loss of motivation, and dissatisfaction at work.

Therefore, technostress is the stress correlated to the use of technology; we can find in the literature a few interesting definitions for technostress: <*a modern disease of adaptation caused by an inability to cope with new computer technologies in a healthy manner*> (Brod, 1984) and also a <*state of arousal observed in certain employees who are heavily dependent on computers in their work*> (Arnetz & Wiholm, 1997).

The main aspects that have a big impact on the presence of technostress among employees are the always more dependence on technology to complete their job duties, the growing sophistication and complexity of the technology used at work (and more specifically the presence of a gap in employees' knowledge related to the use of the technology present at workplace), and the changing work environment and culture. (Ragu-Nathan et al., 2008)

All employees are facing a workplace where (almost) all their duties need a kind form of technology (such as personal computers, tablet, smartphone, enterprise applications, collaboration applications, video conferencing applications, etc.) to be completed. Furthermore, due to the complete dependence on technology, employees are also experiencing the impact of its constant change: new updated versions – with new features or new ways to complete old tasks –, or a completely new software, are released almost every month, and so their users have to constantly learn how to use the new releases.

Moreover, new and constantly released features, as well as the growing sophistication in the technology and in the complexity to use it, expand the gap between the knowledge that employees possess, and the knowledge needed to complete assigned tasks.

Lastly, the extensive presence of technology in both working and personal life started a process of change for the work environment and company culture. If from one side, technology helped to make possible working from home diminishing the commute time, to have flexible work schedule optimizing tasks, and to reduce the physical distance between team members from different branches, on the other side, it increased the multitasking, the social isolation, and the abstraction of work. (Zuboff, 1988)

In addition, technology changed the conventional workday – resulting in a dangerous *always on* culture – and employees who struggle to adapt to the new setting experience technostress.

Lazarus, McGrath, Folkman, and Cooper provided several definitions of stress, very useful to define and analyze it and, most importantly, they contributed to the creation of the Transactional-Based approach that is helpful to understand the mechanics of stress and thus helps to create a framework to lower the level of stress. It is possible to use this approach to understand and so to also lower the level of stress derived by the extensive use of technology – the technostress. (Cooper, Dewe, & O'Driscoll, 2001; Lazarus, 1966; Lazarus & Folkman, 1984; McGrath, 1976)

The aforementioned scholars defined the stress as the individual's perception of inability to handle the current situation:

- <*Environmental situation that is perceived as presenting a demand which threatens to exceed the person's capabilities and resources for meeting it, under conditions where he or she expects a substantial differential in the rewards and costs from meeting the demand versus not meeting it*>. (McGrath, 1976)
- <*Psychological reaction to some sort of an imbalance between a person and the environment*>. (Cooper et al., 2001)
- <*Anticipation of inability to respond adequately to perceived demand, accompanied by anticipation of negative consequences for inadequate response*>. (McGrath, 1970)

The Transaction-Based model uses the combinations of stimulating conditions and the response made by the employee to it to analyze the stress; furthermore, the model has been developed around three elements that impact the employee's level of stress: the stressors, the strain, and the situational factors.

- *Stressors* are factors (events, conditions, etc.) that create stress; they could be 'role-related' (role ambiguity, etc.) and 'task-related' (task difficulty, etc.) stressors. In the context of technostress, we can call them *technostress creators*.
- *Strain* is the outcome of stress (psychological, behavioral, etc.) that is possible to observe in the person that is experiencing stress.
- *Situational factors* are mechanisms or tools (job redesign, stress management training, wellness programs, counseling, the level of perceived job control, etc.) that can reduce the impact of stress on employees. In the context of technostress, we can call them *technostress inhibitors*.

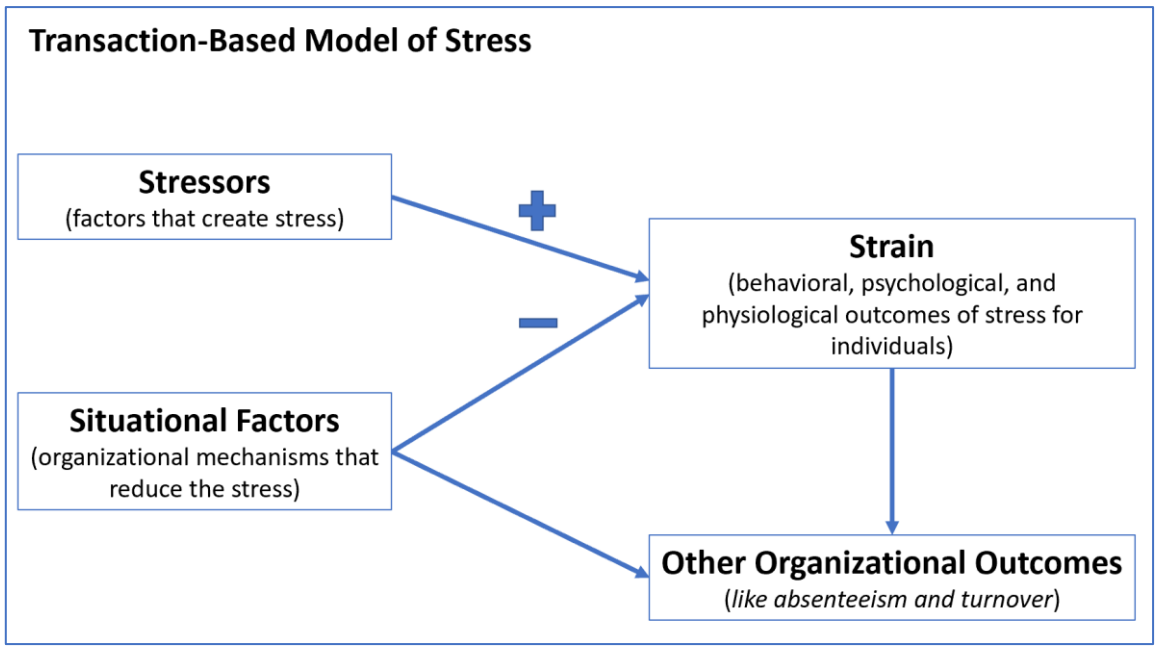

Figure 26 – Transaction-Based Model of Stress| Adapted from (Ragu-Nathan et al., 2008)

Ragu-Nathan, T. S., Tarafdar, Ragu-Nathan, B. S., and Tu (Ragu-Nathan et al., 2008) also studied the impacts of the broader use of ICT (i.e., the technostress) on employees' commitment toward the firm (*organizational commitment*) and their intent to remain at that company (*continuance commitment*), supporting the conclusions that high levels of technostress creators (stressors in the transaction-based model) bring to lack of employee's commitment, while presence of technostress inhibitors (situational factors in the transaction-based model) improves commitment.

Moreover, their findings on the impact of technostress related to individual differences (in particular the different impact of the technostress due to different levels of *education* and *computer confidence* of the employee), has been used in the developing of the framework (best practice model) of this study.

Quoting the authors:

- <*The more educated users would experience less technostress*>.
- <*Individuals with greater confidence in their ability to use ICTs will experience less technostress*>.

Other scholars (Salanova et al., 2013) focused their work on the psychological aspect of technostress – what employees actually experience while suffering of technostress –, and they refer to technostress as a multidimensional construct composed by *technostrain* and *technoaddiction* (two different and, at the same time, interrelated psychological experiences). The former's (independent and positively correlated) components are anxiety, fatigue, skepticism, and feelings of inefficacy related to technology use. The latter refers to the excessive and compulsory use of ICT with sense of fatigue and anxiety.

Moreover, the study supports their original hypothesis that job demand is positively correlated to technostrain and technoaddiction, and job and personal resources are negatively correlated to them. Furthermore, the authors discovered that while social support helps employees to lower their feeling of fatigue and exhaustion, it increases the sense of inefficacy. However, it is not clear the reason of that psychological experience: some explanations could be the sense of inefficacious due to the help received (i.e., task not completed autonomously); another explanation could lie in the law of reciprocity in social relationships (i.e., the employee experiences a sense of obligation towards whom helped her).

Analyzing the impacts of the use of ICT on employees' well-being is a complex task, especially because the adoption of ICT has positive and, at the same time, negative consequences. If from one side, using ICT is positively correlated with employees' well-being, because of the boost made on accessibility and communication efficiency; on the other, it is negatively correlated, because of the increasing in interruptions and unpredictability at work.

Considering these aspects emphasizes the necessity for companies to know how to balance the technology used by their employees, to intensify the positive consequences in favor of the advantages it brings (i.e., the positive outcomes of using technology like accessibility and communication efficiency), and to reduce the disadvantages.

Thus, a good approach that companies could follow to correctly manage the implementation of any technology at workplace and employees' well-being is to prioritize the types of ICT that enable accessibility and efficiency, while to adopt norms to reduce interruptions and unpredictability.

Furthermore, companies should embody in their culture a good balance between work and life, just as between being on- and offline.

6.2.2 Needs of *disconnection*

It is important to specify that in the literature, the number of papers available inquiring the *digital disconnection* or, more broadly, *disconnection studies* that research the new digital labor setting and the needs to *disconnect*, are increasing.

The constantly more integration between work and non-work roles, spaces, and time, in addition to the always fewer clear boundaries between the two worlds, could have huge impact on the employee's life, increasing the level of stress and adding conflicts to the work-life balance (WLB). Furthermore, it is important to keep in mind that one crucial aspect that is behind the work-life balance (WLB) is the individual differences. (Senarathne Tennakoon, 2021)

Thus, taking into consideration those differences, ICT could also have a positive impact on employee's work-life balance (WLB). The suggestion is to request managers to work in conjunction with the Human

Resources department and psychologists to create the best – and tailored – approaches to use technology.

One good example could be the adoption of an enterprise APP used to:

- Manage boundaries and timing of work/non-work roles.
- Facilitate the break during the working day (like a *Tomato Timer*).
- Allow employees to access mindfulness and meditating resources.

Lastly, despite the *right to disconnect* is very important for keeping engagement high, it is important to note that, except for this paragraph, this study is referring to *disconnection* as the employee's psychological feeling.

6.3 Improving engagement leveraging on technology

6.3.1 Virtual meeting and virtual teams

Nowadays virtual meetings are the norm, and so is the disengagement that comes from their long duration and their monotonous approach. Thus, it is very important to enhance the way managers administer virtual meetings to improve employees' attention during them, and for increase employees' engagement in the long run.

It is to keep in mind, when you want to create effective virtual work practices, the importance of having a virtual team leader and that the person acting that role must be trained in the additional challenges a virtual team will face. A vital aspect to be governed by project leaders and project managers is the importance to keep projects members engaged during the entire life of the project, throughout all its phases. Furthermore, virtual teams face additional challenges (due to their virtual nature): the interactions between team members are mediated by technology for the most part, and the face-to-face communication is limited (if any).

Some suggestions to develop engagement in virtual teams come from Panteli, Yalabik, and Rapti (Panteli, Yalabik, & Rapti, 2019): firstly, for any virtual teams, start creating the engagement, then, continue bolstering it, and finally, carry on feeding it.

1. Developing Engagement:
    - Clarity – Be as clear as possible on the nature, roles, and tasks of the project; and on the technology to be used and its modality.
    - Virtual introductions: Who is Who – Make it clear *who is who* conducting virtual introduction of all the members present during the virtual meeting.
    - Face-to-face meetings when possible – The face-to-face approach should be preferred.
2. Supporting Engagement:

- Open communication about the state of the project, including challenges – An open and transparent approach to communication should be used, informing all the stakeholders of the project about its overall status and potential challenges.
- Updates on members' status on the project (e.g., change of roles, contract, etc.) – All the changes made to the project should be quickly shared with the project's stakeholder.
- Peer-to-peer support – The reciprocal support of project members should be encouraged.

3. Nourishing Engagement:
   - Reflection and lessons learned – At the end of every project, take the time to discuss and reflect of the lessons learned along the progress of the project, that will improve further projects' forecasting, efficiency, and effectiveness, and it will increase the project members engagement too.
   - Celebrating the end of the project – Celebrating important milestones, like the end of a project, allows members of the project to feel rewarded for their job, and improves the team spirit.
   - Developing links for future projects – Take the opportunity of the end of a project to develop links to other projects to maintain high the feeling of community created during the delivery of the project.

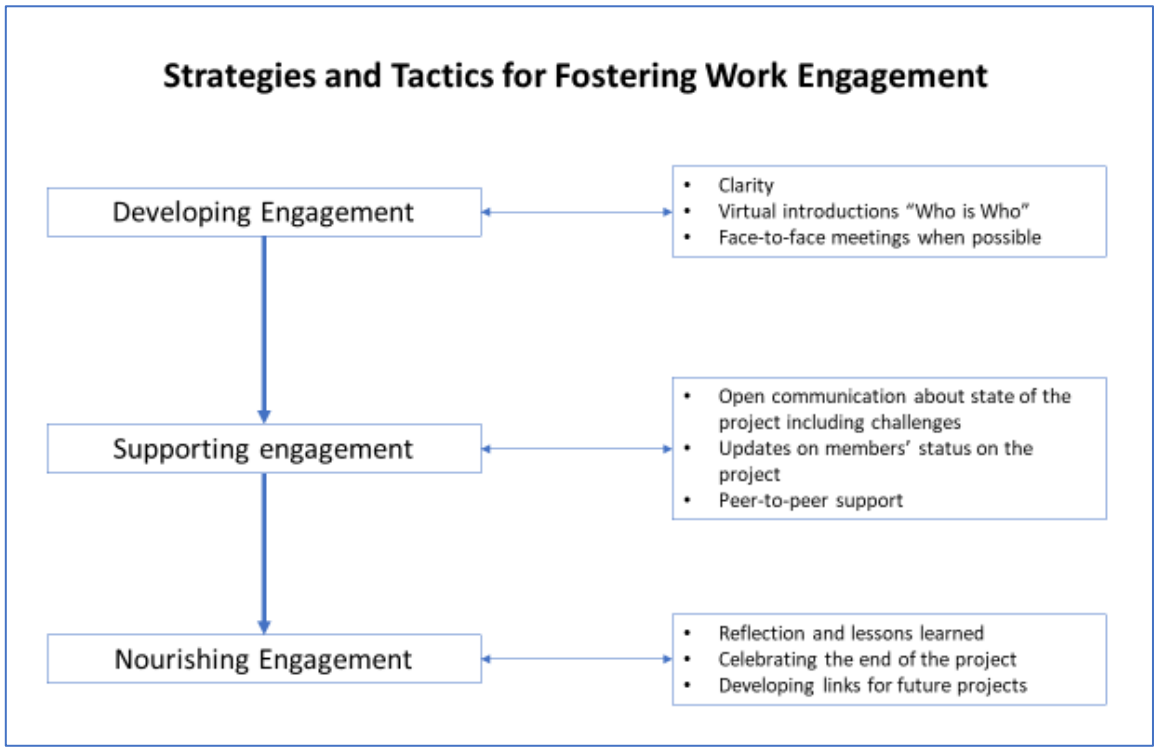

Figure 27 – Strategies and Tactics for Fostering Work Engagement | Adapted from (Panteli et al., 2019)

These strategies and tactics proposed for developing work engagement during the executions of projects using virtual teams are also useful for managing all types of teams (physical, hybrid, etc.) and

should be incorporated in the management style of any managers or team leaders. The outcomes for team members (and, indirectly, for the company too) will be many, starting from an enhanced feeling of belonging, and so a greater commitment.

6.3.2 Techno-work engagement

Starting from the empirical findings that workplace resources improve work motivation, well-being and performance (Nielsen et al., 2017), a Finnish research (Mäkiniemi, Ahola, & Joensuu, 2019) analyzed a group of teachers to support the positive correlation between workplace resources (technology-related self-efficacy, technology-related autonomy, and technology-related competence support) and techno-work engagement. Moreover, the scholars provided some suggestions to schools for improving the engagement at work.

Building on the research and the suggestions provided to schools by Mäkiniemi, Ahola, and Joensuu, it is possible – with a few adjustments – to develop some guidelines to improve techno-work engagement for other companies too.

- Listen to employees' opinions and views on technology (i.e., the new tool that will be implemented), and its impact on the workplace; moreover, let employees to be part of the decision-making process. It could be complex to involve them in the process, but it will have a huge impact on the success of the technology implementation, and the employees' well-being at the company (they are the most impacted from the adoption of the new technology).
- For employees being autonomous in their tasks at work is a source of well-being; thus, it is fundamental to have training programs in place – programs that explain how to use technology to complete tasks, that provide concrete examples, and that are practical in the nature. To have educated employees in technology is the key.
- Adding to the last point, the educational programs should not be neither static nor fixed in time; instead, they should provide continuous opportunity to develop new skills and improve expertise on current technologies (adopted at the company).

Moreover, some key aspects are inferred from studies on Industry 4.0 (Ajzen, 1991; F. D. Davis, Bagozzi, & Warshaw, 1989; Hill, Fishbein, & Ajzen, 1975; Monica, Claudio, & Chiara, 2020; O'Driscoll, Brough, Timms, & Sawang, 2010; Venkatesh & Bala, 2008; Venkatesh, Morris, Davis, & Davis, 2003):

- A positive attitude to the technology needed to accomplish tasks may bring to work engagement.
- There is a positive relationship between training and work engagement; it is important to create a strategic and defined plan to introduce (new) technology to the workplace.
  Thus, the suggestion is the following: first step should be to share information about new technology and the change/impact it could have on tasks and everyday life for employees; second

one should be to provide general training (on technology) to employees; and the third step should be to furnish them with specific training to implemented technology.

- The crucial role played by leaders and supervisors.
- The user acceptance of information technology (IT) is given by the individual's perceptions about the new technology (i.e., the individual's perceptions anticipate the actual usage or not of the IT assessed by the individual).
- The Technology Acceptance Model (TAM) suggests that the intention to use technology is contingent on the perceived usefulness and ease of use.

  Thus, the suggestion is the following: explain and show how the specific technology will improve employees' job performance to all workers impacted by the adoption of the new technology. Moreover, the adequate training, in addition to allowing workers to be aware of the newly adopted technology, makes its use easier.
- The Unified Theory of Acceptance and Use of Technology (UTAUT) suggests that the acceptance and the intention to use technology are affected by performance expectancy (employee's job performance), effort expectancy (technology's easy to use for employee), social influence (pressure from employee's social environment to use that technology), and facilitating conditions (degree of company support in the usage of technology).

6.3.3 Flow

The concept of *flow* – from psychology – comes in to help understanding the positive contribution to engagement by the right balance (adjusted to each employee's characteristics) of challenges and skills and so to create engaging environment at workplace.

The *flow* is a mental state of concentration, in which the person who is experiencing it is entirely focused and immersed in the activity, and enjoying a feeling of energized focus, a full involvement, and joy in performing the activity itself. (Csikszentmihalyi, 1990)

Because the state of flow is experienced by employees when they perform tasks that they perceive as balanced – between tasks challenge and the skills possessed to complete them – (Csikszentmihalyi, 1990; van den Hout, Davis, & Weggeman, 2018), good and personalized job demand and technology, and training could help employees to stay in the *flow channel*. With this custom approach, the job of managers and leaders is paramount: each of them must really know their workforce, and the unique capabilities of each employee, to be able to correctly develop the essential adaptation.

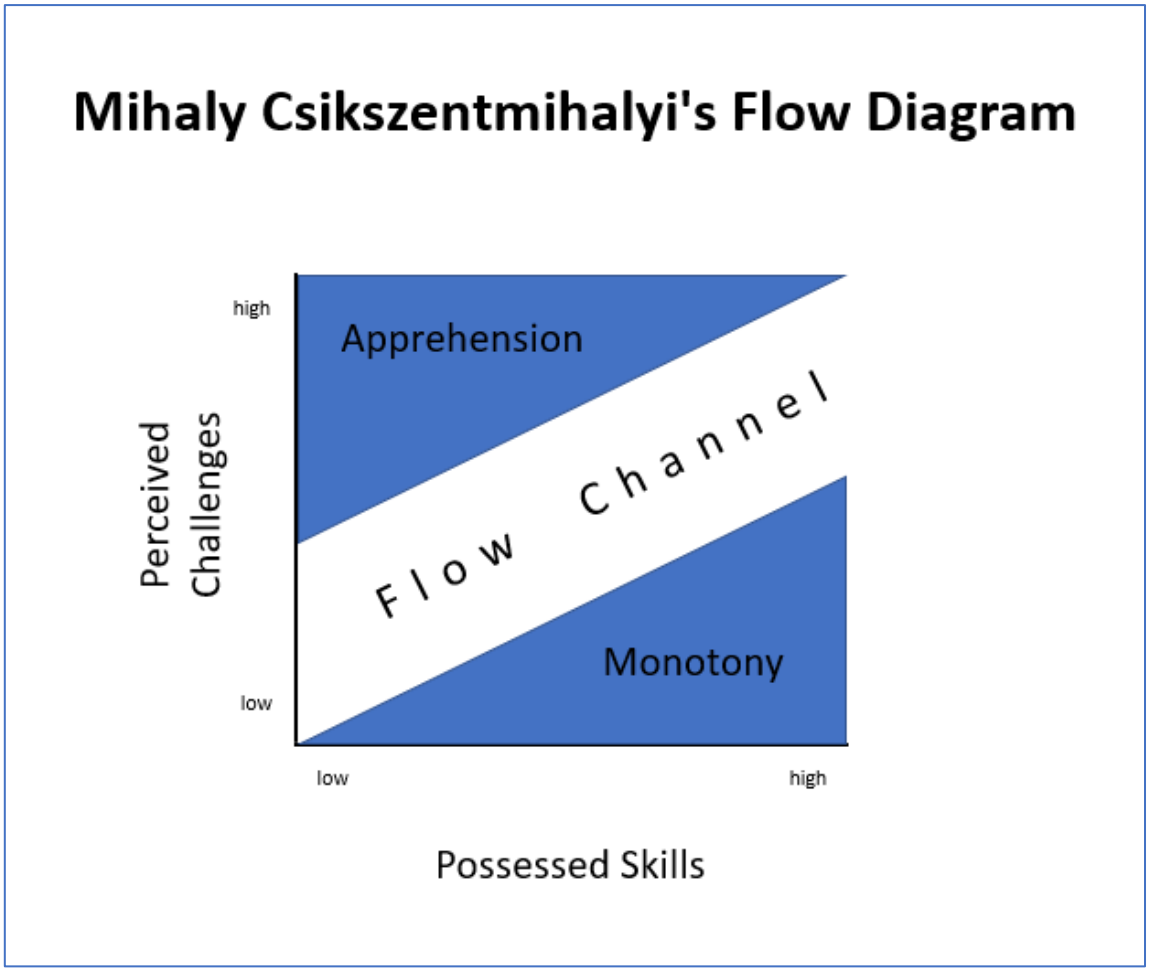

Figure 28 – Mihaly Csikszentmihalyi's Flow Diagram | Adapted from (Recto, 2022)

Unfortunately, adoption of some type of technology could bring to a lower engagement. For example, in a study performed by Braganza et al. (Braganza, Chen, Canhoto, & Sap, 2021), the authors found that the adoption of Artificial Intelligence (AI) lowered the level of employee engagement. Or, in another study (Recto, 2022), the author implied that the automation of most tasks by technology like AI could be perceived by employees like passive activities or could cause technostress. Thus, it seems that tools like AI would impact the balance of challenges/skills and consequently lower the engagement levels in companies that adopted the technology.

One more time (this one deducing it from studies about technology implementation (Ekandjo, Cranefield, & Chiu, 2021; Wisskirchen et al., 2017)), the approach that seems to work is to gradually introduce technology at workplace and establishing clear rules for working with it.

6.3.4 Eustress

Stress is often analyzed and used with a negative meaning, although the good (i.e., healthy) stress could help improve employees' feelings in respect to their lives at work. The positive stress has been defined as *eustress*.

The researchers Jim and Jonathan Quick depicted eustress as the <healthy, constructive outcome of stressful events> (p. 61); the researchers Bret Simmons and Debra Nelson reformulated its definitions adding the psychological aspect: <the positive psychological response to stressor> (p. 61). (Hargrove, Nelson, & Cooper, 2013)

The concept of eustress could be useful in the creation of a healthy and thriving work environment – where employees feel appreciated, full of energy and with a positive and high feel of engagement. To obtain this outcome, the suggestion for companies is to produce eustress (i.e., healthy stress) in their employees.

The suggestion comes from two frameworks – the Challenge Hindrance Framework (CHF) and the Holistic Stress Model (HSM) – about eustress, that define and support the healthy stress for receiving positive outcomes like improved performance, commitment, and well-being.

6.3.4.1 Challenge Hindrance Framework (CHF)

At the foundation of the Challenge Hindrance Framework, there is the findings of *challenge* (i.e., positive) and *hindrance* (i.e., negative) related stress among 1,886 U.S. managers by Marcie A. Cavanaugh and her colleagues at Cornell University. (Cavanaugh, Boswell, Roehling, & Boudreau, 2000)

Their and other empirical findings show that *challenge related stress* is positively connected with desirable outcomes (like job satisfaction, commitment, and improved performance, while negatively connected with turnover). On the other hand, *hindrance related stress* brings undesirable outcomes (it is negatively connected with job satisfaction and positively connected with turnover). (LePine, LePine, & Jackson, 2004; Podsakoff, 2007)

Podsakoff also defined scales to measure challenges (with four dimensions) and hindrances (with seven dimensions); the dimensions used to evaluate challenge stressors were: workload, work pace, job complexity, and job responsibility. (Podsakoff, 2007) Understanding and managing in the best way possible these challenge stressors are fundamental to obtaining an engaged workforce and, above all, to keep the momentum.

- Workload – Managers should assign to their workers a workload that is consistent with their capabilities: it should not be either under or over stimulating.
- Work pace – Managers should carefully understand the speed of completing tasks requested by their workers and request a fair time to complete jobs. In addition to achievable outcomes (in terms of timing and speed; in terms of skills, it has been examined in the previous point), managers should explain to workers the rationale behind their requests (i.e., why it must be completed in a short amount of time; why by that time; etc.). The latter will also help managers to make workers feel part of the team and thus lower the chances for workers to feel abandoned, not listened to, and so become demotivated.

- Job complexity – Similar to *workload*, but broader, job complexity refers to the job as whole. Thus, like for *workload*, managers should assign jobs that are consistent with their capabilities. Very important is assigning people to the right position (i.e., people with the right capabilities to be able to handle the position's functions) and develop training programs.
- Job responsibility – Like for the other challenge stressors, administering job responsibility correctly requires a deep knowledge of the workforce. Job responsibility involves the subjective level of each individual, and so responsibilities should be assigned commensurate with the capabilities and knowing the willingness of each worker to handle them.

Even though *challenges* could improve employees' life at work, it is important to keep in mind that there is a limit, that changes from person to person, in the quantity of stress that everyone can manage (be it positive or negative). Thus, any companies that would generate eustress for improving its workplace, should be conscious of the limitation and consequently train its managers to understand to what extent each of the employees their supervise can effectively face (i.e., the point from which positive stress becomes exhaustion and burnout).

6.3.4.2 Holistic Stress Model (HSM)

The other model used to build the framework to improve employee engagement is the Holistic Stress Model proposed by researchers Simmons and Nelson. It poses the emphasis on the individual's response to stressors, that are, for the model, intrinsically neutral: stress can be both positive and negative, what makes the difference is the perception of the person who faces the stressor – in other words, employees experience eustress if they perceive that stressor as a beneficial contributor to their well-being. (Nelson & Simmons, 2003)

According to the two scholars, there are some indicators of eustress; these are hope, positive affect, vigor, meaningfulness, and manageability. Because all these are psychological states that are present also in the state of engagement, it is easy to imagine a straight and positive connection between eustress and employee engagement. In addition to these states, there is also a unique idea that comes from the model, it is the concept of *savoring* – that is the positive (or even enjoyable) feelings that comes from facing and overcoming the stressor.

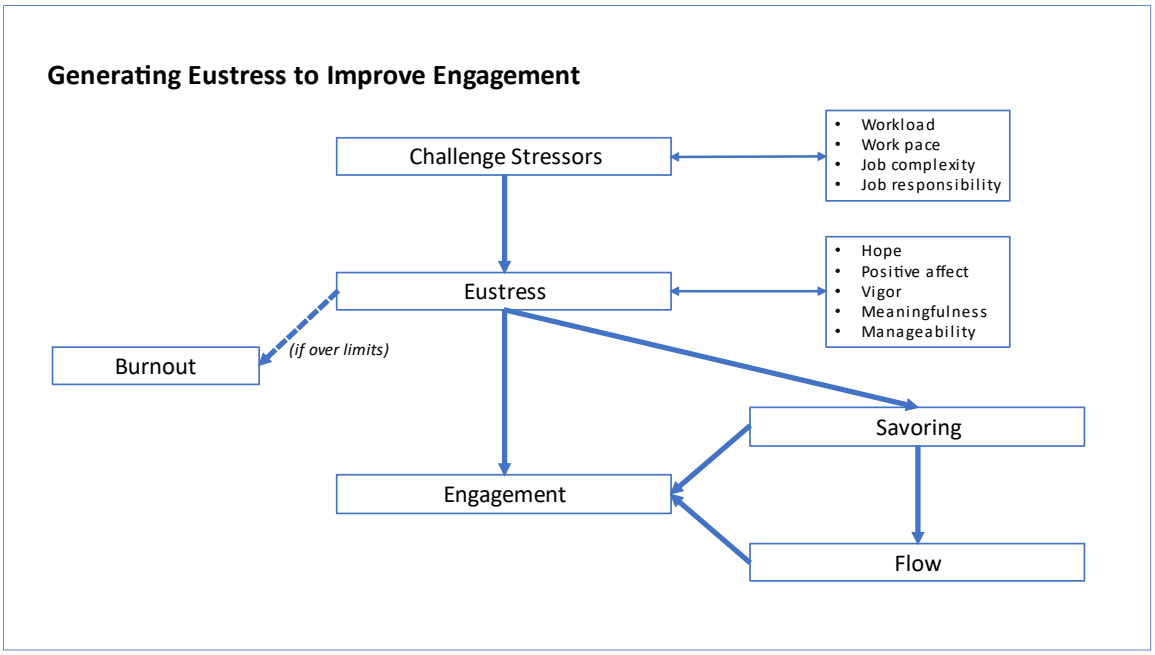

Figure 29 – Generating Eustress to Improve Engagement | Adapted from (Hargrove et al., 2013)

Leveraging on the insights of the two models, the suggestion for managers is to take the advantages of the good stress to create a healthy and engaging workplace.

Accordingly, managers should identify the aspects of work that employees perceive as engaging, and that could increase the eustress at the workplace to the right level. Thus, the following steps are suggested – to both managers and companies – in order to obtain engagement via eustress.

1. Based on Challenge Hindrance Framework (CHF), the focus should be on the four dimensions perceived as challenging:
    a. workload (should be consistent with workers capabilities, it should not be either under or over stimulating),
    b. work pace (request a fair time to complete jobs and explain to workers the rationale behind their requests),
    c. job complexity (refers to the job as whole; managers should assign jobs that are consistent with workers capabilities and develop training programs),
    d. job responsibility (involves the subjective level of each individual; managers should assign responsibilities commensurate with workers' capabilities and their willingness to handle them).
2. Be sure that the level of challenge generated by the introduced stressor is appropriate. This is an important aspect to keep in mind because if it is too much, the positive stress turns into negative stress. It is also important to keep in mind that limits change from individual to individual, and that everyone needs to recover energy (both physical and mental). Push too much, and for a long period, employee's boundaries give rise to burnout.

3. Moreover, starting from the definition of challenge stressors by Podsakoff, it is important to carefully manage the following aspects:
    a. Make sure that the first reactions of workers to challenge stressors are as positive as possible.
    b. Explain the rationale behind the demands and the links with the outcomes.
    c. Create a win-win situation between the company and its employees: create a common purpose that allows workers to obtain their personal achievements and, at the same time, reach the company's goals.
4. Another crucial aspect to wisely administer is energy management. In respect to this point, one of the most helpful advice comes from Tony Schwartz: manage your energy, not your time. (Schwartz, 2007)

A few examples of real programs adopted by some companies to allow employees to enjoy eustress follow.

- Zappos – Its CEO, Tony Hsieh, managed the company advocating happiness at work as a business strategy. The strategy, not only increased the number of happy customers (happy employees lead to happy customers), brought to one of the most resilient and sustainable intrinsic motivators: higher purpose. (Hargrove et al., 2013)
- Google – The company established a program to practice mindfulness at work – called *Search Inside Yourself*. Through the program, Google's employees developed healthy mental habits (pay attention on the present moment, on the purpose, and non-judgmentally) that helped them to experience eustress. (Hargrove et al., 2013)
- Sony Pictures Entertainment – The company established an energy initiative that helped to improve its performance as a consequence of better energy management of its workers. The initiative was implemented after the company became fully aware of two important aspects: the first, it recognized the importance for workers of rotating between periods of intense focus with periods of energy regeneration; the second, company started to be concentrated on workers' needs and health (physical health, emotional well-being, mental clarity, and spiritual significance). (Hargrove et al., 2013)

O'Boyle and Hogan, authors of an interesting report published on the Deloitte Review (O'Boyle & Hogan, 2019), provide stimulating insights to apply to employee engagement from the customer experience practice. Basically, they argue that technologies should be used with different strategies (borrowed from the customer engagement indeed), in spite of just creating boundaries (like often actual solutions to improve employee engagement using technology are used for).

Technology should be used to:

- Automate repetitive and routine tasks (for example, reducing the time spent on administrative tasks), and thus allow workers to use their time in a more productive way, and help them keep focus and commitment for their duties high.
- Help workers to have easy access to all the information needed to complete their tasks and empower them.
- Mitigate boredom and tiredness (before it becomes burnout) creating a stimulating environment and provide each worker jobs that fit their specific needs.

Moreover, they highlight some important considerations to keep in mind when designing a successful employee engagement strategy:

- It is very important to eliminate all the stress and anxiety that come from the adoption of a new technology – for example, the perception that technology could eliminate jobs and make employees themselves worthless, or the unhealthy custom of the *always on* condition.
- Companies should improve the internal communication (on the new technology, its adoption, and the impact on workers' professional lives).
- Organizations should implement a seamless experience (physical mixed with digital) for employees too – Like *omnichannel* is the effortless experience for customers.
- Managers should guide workers into digital transformation, educating them about its benefits and its drawbacks.
- It is essential to understand that transformations to last need time (to be implemented and absorbed).

Lastly, the authors, for reducing anxiety and improving engagement, suggest companies to create communities (even better, allow workers to build their own communities based on their interests). In this way, it will improve the feeling of belonging between workers, and technology could help to eliminate (or, at least, reduce) distance caused by different physical locations and time zones, and to strengthen and to deepen their relationships.

Another important aspect where technology could come to help improve engagement levels in companies is when it is used as an *enabler* of flexibility. It is crucial for companies to provide their employees with all the flexibility possible. It is not enough to allow employees to work from home, managers should provide more flexibility (i.e., autonomy): employees should be able to decide on what, with whom, and how much to work. One research made by Gartner in 2021 (*The Gartner 2021 EVP Benchmarking Survey*, 2021) found that the adoption of this kind of flexibility increased the number of the *high-performing* employees by 40%. The situation just described is a win-win one for both the company and its employees.

6.4 Delivering employee engagement programs correctly

Once the problem of disengagement at work has been recognized, it is the time to develop programs aimed at correcting the issue. It is possible to observe several programs in place in just as many companies, and to count the huge amount of funds spent on recognition programs, motivational speakers, different kinds of rewards, and motivational events, just to cite some. Unfortunately, it is not so common to be able to evaluate these programs, from the point of view of their outcomes and goals reached, or their alignment to business objectives. Often this happens because a credible measurement process is not used or even not considered during the design phase of the projects and programs.

Like for most of the projects and programs executed in companies, to accomplish their goals and to use the effort in the best efficient and effective way, also motivational initiatives need to follow some guidelines:

- Programs need to be aligned to business goals.
- Objectives need to be *SMART* (Specific, Measurable, Attainable, Relevant, and Time-Based).
- Initiatives need to be evaluated, and it should be done in a credible (it should show the real value of the project) and systematic way (it should be replicable).
- There should be one clear and precise definition of success, that should be used for all the projects and programs (i.e., definition of success must be unique and not change from project to project).

In addition to these guidelines, it is suggested to use a different approach to measurement the outcomes, and justifies the effort, of any project and program:

- Motivational programs should be evaluated at the Return on Investment (ROI) level (i.e., use a return-driven approach of impacts from motivational initiatives), in addition to using the intangible or data from a macro-level, to efficaciously suggest and justify their implementation.
- Moreover, the Return on Investment (ROI) methodology – an approach to ROI evaluation by the ROI Institute – could help provide a strong plan to follow to design a motivational initiative efficiently and efficaciously. (J. J. Phillips, Phillips, & Schell, 2015; P. P. Phillips, Phillips, & Ray, 2016)

The ROI methodology suggests the following steps:

1. Establish an evaluation framework to define the levels of and the method to evaluate the program and to clearly show the objectives and needs.
2. Establish a process model to show the steps of the calculation needed to evaluate the program, and to distinguish the different aspects that have an impact (i.e., influences by the motivational program from the others).

3. Establish operating guidelines to be followed during the process that help to stay aligned to the it.
4. Establish enough resources to be able to perform the program until the end (or, at least, until the realization of the defined goals), and be precise on the responsibilities (i.e., who is responsible for what).

Thus, the process to measure the impact of motivational initiatives helps, firstly, to align programs to the business goals, and secondly, to recognize the impact that they create in all the company. For this reason, if a program does not determine any (or the desired level of) business value, it must be redesigned until its improvements meet the desired level of business value.

Furthermore, measuring the impact of any engagement initiatives is crucial to allow the practitioner (or the internal manager) to persuade the company's executives to adopt it. It is not only important to provide proof of positive effects from the macro view (using the several studies that prove the positive correlation between engagement and better performance from both academics and practitioners), but also from the micro view. Therefore, it is crucial to provide evidence suggesting that the evaluated engagement initiative is feasible, valuable and – above all – that it adds value. The optimum would be to be able to show the *amount of value* the initiative could bring in monetary terms to their company (and not in a general one).

To help engagement programs to be effective and to deploy, at the same time, *tangible* contributions to the business, the process starts aligning the program to the business, and ends measuring the program's effects on the business.

Moreover, because the engagement should be analyzed continuously, and not just once during the life of the company, the same should be for the programs aimed to improve the engagement at work: the entire engagement process (both measuring and improving it) should be cyclical. The implemented initiatives should be linked to the workforce engagement level in the company, and thus aimed at fixing the current aspects generating the lack of the engagement. When one initiative has been completed (after its completion and the analysis of its impacts, that includes the *lesson learned*), a new analysis of the engagement level should be performed, and a new initiative designed to address the new problems should be developed and executed.

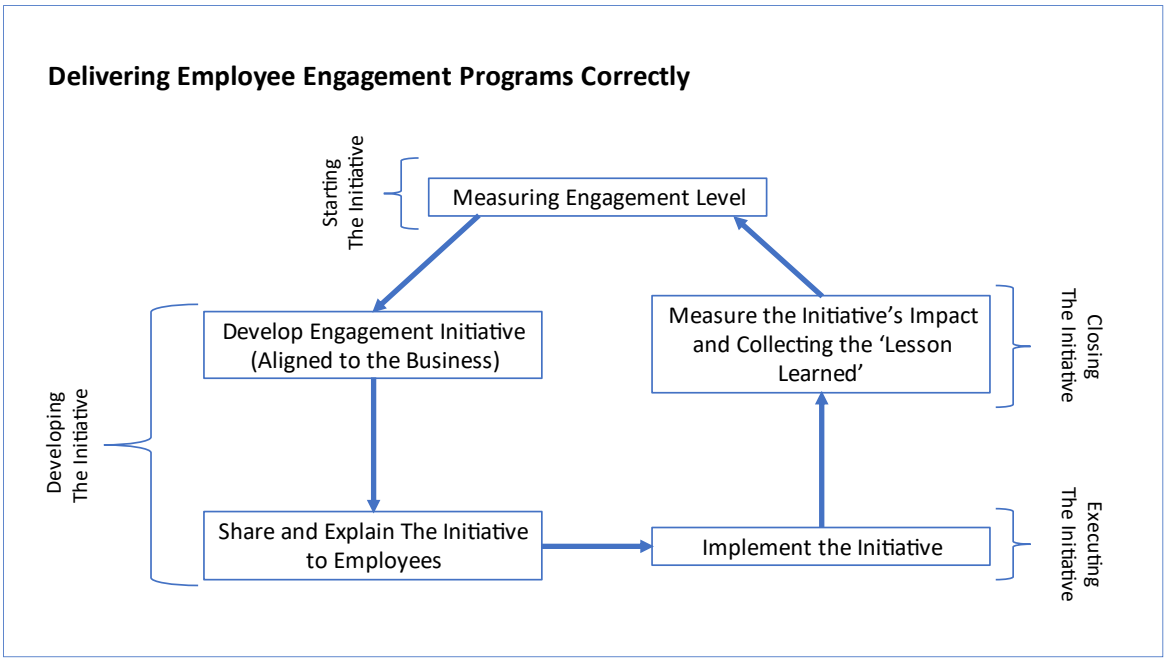

Figure 30 – Delivering Employee Engagement Programs Correctly

Business initiatives aimed to improve engagements between employees are, from the point of view of their management and performance measurement, similar to other business projects. Like all the others, the employee engagement programs should also follow some guidelines to be sure to bring outcomes that provide value and that they are efficient and effective.

Questions like the following should have positive answers:

- Is the results-based approach used – instead of the activity-based one?
- Is the employee engagement initiative aligned with business goals and needs?
- Is the employee engagement initiative's strategy aligned with the company's strategy?
- Has a gap analysis been conducted?
- Is the initiative supported by key stakeholders?
- Have specific and measurable objectives been selected?
- Have specific, measurable, and feasible metrics been selected to measure and evaluate a program's performance?

When setup a framework to be used to measure and analyze performance, it should be systematic (to provide data that is reliable and of high quality) and designed in a way that makes it easily replicable to other projects (to provide data that is comparable).

More specifically, the plan to follow to develop and execute a program – efficiently and efficaciously – should be the following.

1. Starting the initiative:

   a. Measure the engagement level.
   b. Collect data before the initiative (essential to perform the gap analysis).
2. Developing the initiative (initiative's design and communication):
   a. Develop goals to be accomplished by the initiative.
   b. Design the initiative.
   c. Design the evaluation.
   d. Design the controls.
   e. Prepare the environment (executives/employees/company's culture) for the initiative:
      i. Establish strong partnerships with key stakeholders.
      ii. Share and explain the initiative to employees.
3. Executing the initiative:
   a. Implement the Initiative.
   b. Collect Data:
      i. Collect data during the initiative.
4. Closing the initiative:
   a. Collect Data:
      i. Collect data after the initiative.
   b. Analyze Data:
      i. Isolate the effects of the initiative.
      ii. Evaluate the initiative's effects on business (tangible impacts: monetary value, benefit-cost ratio, etc.).
   c. Evaluate the initiative's impact.
   d. Evaluate the initiative's intangible benefits.
   e. Report:
      i. Report the results of the initiative.
      ii. Collect lessons learned to better replicate the initiative in the future.
5. Move to the next engagement initiative.

The collection of data should be performed at three stages (to obtain information from the entire initiative lifecycle): before, during, and after the initiative. *Before* the program takes place, data helps to analyze company starting situation and its problems, and to obtain crucial information to perform the gap analysis; *during*, it helps to check the evolution and the performance of the program and to learn reactions; *after*, to evaluate the efficacy and efficiency of the program and to recognize the impacts.

Moreover, concerning the data collection process, the selection of the methods to use is crucial. During its selection, it is important to take in consideration some aspects like the following: the type of data you need to analyze (depending on the initiative's impacts); the time that participants will spend for

data input (it should be minimized as much as possible, still receiving data that provides value); the cost associated to the selected method; the real need of extra methods and sources of data (the selection of additional methods adds more resources – costs as well as time – needed to complete the program, and the same impact has the selection of additional sources of data); the impact of the company's culture on the selected method (i.e., how well – positively versus negatively – employees will be inclined to spend time on, and to answer free of any bias, to the questions of the data collection phase); the accuracy and the efficiency of the chosen method. The common methods for collecting data are questionnaires and surveys, interviews, focus groups, observations, action plans, and performance agreements. Where present and accessible, it is suggested to collect data using tools already present (to be able to confront, even if in part, with data collected in the past; harmonize the tools present at the company; and to not add complexity with new instruments). Additionally, the sources of data are many and could be internal or external, business and operational databases (DBs), employees, managers, teams or peer groups.

Another crucial aspect in the collection of data is timing. The scheduling of the follow-up evaluation is critical because the observation of the initiative's impacts depends on it. The delay that occurs between the implementation of the plan and the measurement of the impacts that it has generated could prevent the correct data collection. The time passed could have an impact on the outcomes of the initiative, like allowing other aspects, that are not correlated to the executed initiative, to interfere with the results, and making very difficult to separate impacts genuinely generated by the initiative to the ones generated by other aspects. Thus, it is important to determine the earliest time that could be possible to take the measurement.

The custom says that the majority of the engagement initiatives provide their impacts between one and six months. (P. P. Phillips et al., 2016) In spite of that, it is not easy to decide the timing because of the complexity and could be useful to analyze the situation with someone who is familiar with the circumstances to help find the right timing. This is true also for the design and the implementation phases: ask for advice in the early stage of the initiative to subject matter experts could be crucial for implementing the program efficiently and to obtain valuable impacts at the end of the initiative. Lastly, it should also be useful to quantify the employees' learning curve of the new tool that will be implemented (or the willingness to embrace the new practice) for the success of the initiative and its performance measurement.

Once the data has been collected, the following step to be performed is its analysis. The suggested steps to analyze data of engagement initiatives are the following:

- Isolate the initiative's impacts from the ones made by other factors.

- Analyze the outcomes of the initiative in terms of tangibles (i.e., the monetary value added by the program):
    - Convert them to monetary values.
    - Analyze the costs of the initiative.
    - Calculate the cost/benefit ratios and other performance results that could be useful for analyzing the initiative and its achievements (and to be able to compare it with other programs inside the company, and to benchmark with programs in different companies).
- Analyze the outcomes of the initiative in terms of intangibles (i.e., the non-monetary value added by the program).

To be able to correctly evaluate any initiatives, it is important to separate the impacts made by programs aimed to improve the employee engagement to impacts that come from other factors. There are many tools and techniques that could be used to isolate the initiative's impacts: a list of some of the most used methods follows.

- Using a control group – Like during clinical trials, this method involves the use of two groups during the application of the employee engagement initiative; people in these groups should have similar characteristics and be exposed to comparable internal and external influences. One group receives the program's benefits, and the second one – the control group – does not.
- Using a trend line analysis – With this technique, the isolation is made by the analysis of the predicted trend and the real performance (of selected aspects) obtained by the initiative. Before the start of the program, it is created a graph with the trend line showing the performance direction of the aspect taken in consideration: the line starts with current data at time 0 (the start) and continues with the predicted direction until time 1 (the end). After the completion of the initiative, the actual line is compared with the predicted one to analyze the differences that are used to separate effects of the initiative.
- Using a participant estimation – It is based on estimation of impacts made by employee involved in the engagement initiative. To improve the precision of the evaluation, a multi-step approval process could be implemented: an initial assessment is made, then it is discussed with other peers and managers, and finally an agreement on the value is made.
- Using an expert estimation – It is similar to the participant estimation method, with the difference that the estimation is made by an expert of the field.

To be able to compare the benefits of an engagement program with its cost, it is fundamental to translate those benefits into monetary amounts. The latter is not an easy process; furthermore, it is not always possible, like for the intangible benefits. Some approaches can assist in the process of converting

benefits into monetary units; for example, it is possible to use production aspects, suggestions from experts, or also external sources.

For instance, it is possible to use the *increase of the output units* (i.e., more sales, more units of production, etc.), the *save of time* (i.e., reducing time to run a process or deliver a service, being able to generate a quicker response to a request, etc.), the *improve of the quality* (i.e., less defective products, less waste, etc.).

In addition to inputs from the production, it is possible to estimate the initiative's monetary benefits employing experts (that could be internal such as external), and external studies. There are several studies (from both academia and business) that analyzed data of improvements programs, and compiled lists with values of benefits converted in monetary amounts. These numbers – with some adjustments – could be easily used in any company.

A (not exhaustive) list of common costs associated to projects (for designing, executing, and closing them) is:

- needs assessment,
- design and development,
- acquisition costs,
- implementation costs:
    - salaries and benefits,
    - materials and supplies,
    - equipment.
- maintenance and monitoring,
- administrative support and overhead,
- evaluation and reporting.

A (not exhaustive) list of common formulas associated to projects for calculating their return is:

- Return on Investment (ROI),
- benefit-cost ratio,
- payback period.

In addition to the benefits that originate from *tangible* assets, the value that comes from the *intangible* assets is equally important to be quantified and to be recreated. Often, the latter is the origin of a company's competitive advantage because of its difficult to be copied and replicated.

Intangibles are called in this way because they are not *touchable*; in addition, they are difficult to be quantified and, precisely for this reason, frequently the value that could be originated by them is not generated (or at least, not completely).

Form the point of view of employee engagement, some of the most important intangible aspects to be studied, measured, and improved through engagement initiatives are:

- company culture,
- work climate,
- diversity and inclusion in organizations.

During the initiative, to keep the momentum, it is very important to communicate the performance and its trend effectively; likewise, at the end of the program, to expand the consensus on engagement initiatives and thus to receive support from stakeholders on future initiatives, it is decisive to disclosure its results properly, with a systematic process, ant to the right audience.

Best communication guidelines follow:

- The Dos list (i.e., approaches to be followed):
    - Communicate promptly.
    - Customize communication with the audience.
    - Select the communication way scrupulously.
    - Produce neutral communication.
    - Use testimonials during communication.
    - Keep consistency.
    - Keep in mind that communication should inspire.
- The Do not list (i.e., approaches to be avoided):
    - Hide the results (both positive and negative).
    - Ignore the communication's political aspect.
    - Be frugal about the opinions of the audience.

Lastly, some suggestions on the communication aspect. The communication plan is another important aspect that key stakeholders need to agree with to implement a successful engagement program; moreover, it should be prepared and approved at the beginning of the program.

Some of the key aspects that a communication plan of an engagement initiative needs to cover are the following:

- *What* needs to be disclosed during the communication.
- *When* it should be done.
- *How* it should be done.
- *Where* it should be done.
- *Who* is responsible for the communication.
- *Who* is the target audience.

- *What are the actions* required/expected from the communication.

For any project and initiative, not only those with the goal of improving engagement, also the feedback process has a decisive role. With the offering of the right feedback (and, at the same time, being opened to also receive feedback) any manager will be advanced for the execution of the project with both making any adjustment needed along the way and keeping workers focused.

Suggestions about which could be great approaches to communicate effectively with workers (and also with clients) could be obtained from the bestseller Flawless Consulting by Peter Block (Block, 2011), and they are:

- Communicate quickly – News (both good and bad) should be communicated as soon as possible to people involved in the initiative.
- Make data easy to understand – The information provided should be easy to understand, and the receivers should be able to grab it in the in the shortest possible time: be concise and limit the details of detailed explanations and analysis.
- Manage the expectations of the information provided – Both positive and negative data could lead to misleading interpretations, thus the suggestion is to approach data communication in a constructive way. Furthermore, try to balance the receivers' expectations.
- Carefully choose the communication style – The approach used in the communication process should be attentively selected, it is suggested to use a language that is short, simple, and comes directly to the point; and, at the same time, avoid from a style that is too complex, long, and full of jargon.

6.5 A digital platform for improving engagement

An important part of the best practice model is the new digital platform designed for improving engagement among Italian SME's workers: its adoption will help, among other things, to receive and provide feedback, to measure and adjust the level of challenge, and so to *do not overdo it*. Moreover, the platform helps employees to be familiar with their capacity and limits, and thus improve their ability to take care of their energy more effectively. Lastly, to ensure that the usability of the digital tool was simple and that it was as beneficial as possible for all the employees, some guidelines deducted from past studies have been followed during its design.

A digital tool, based on both web and mobile technologies, has several positive features: it is relatively cheaper to implement and to distribute; could be accessible from everywhere, at every moment, and without prior reservation (i.e., employees can decide to use the tool at their convenience); can be customized to various users' needs. A digital tool is not only easy to use, it is also easy to provide and receive feedback; moreover, it is also possible to check progress conveniently and from everywhere.

The researchers Heikkilä, Mattila, and Ainasoja studied an effective way for improving the eustress among Finnish entrepreneurs, and so they prototyped an interesting web-based tool. (Heikkilä, Mattila, & Ainasoja, 2018) Their work provided some insights incorporated in the framework (best practice model) described in this paper.

One of them is the approach followed during the design of the tool: the web platform needed to minimize the user effort, to provide the freedom to discover, to enable follow-ups of progress, to enable learning from peers, and to support the integration of skills into daily life. Another insight that inspired the framework (best practice model) described in this paper was the logical flow inside the web-based platform: it starts with employee's analysis, it continues providing some initial needs' analysis, and it ends providing exercises to perform in order to become familiar with, and put in practice what learned. (Heikkilä et al., 2018)

The main difference with the platform proposed in this paper is that the tool is used as a way to share information between employees and managers (in both directions), and for managers to improve employees' well-being at workplace.

Employees who for the first time approach the platform receive a questionnaire used for analyzing their needs, after which they receive a first draft of their analysis developed by their supervisor, and this first phase ends with an interview between employee and supervisor. This phase is needed for supervisor to better know the colleague and so to be able to improve the alignment of goals of the company and the employee. The second phase continues through the platform and is needed for continuously incite the employee and check the alignment of goals.

Furthermore, the platform should provide a virtual place where to encounter other workers, a virtual version of the physical "water cooler", the traditional place where to informally meet and share ideas. This feature will promote the sharing of information and will improve both collaboration and communication among workers in the virtual environment.

The features and expected outcomes of the digital platform (web and APP):

- Features:
    - Facilitate breaks during the working day (like a Tomato Timer).
    - Allow employees to access mindfulness and meditating resources.
    - Create communities (allowing workers to build their own communities based on their interests) for improving the feeling of belonging between workers, and for strengthening and deepening their relationships.
    - Share information between employees and managers (in both directions).
    - Provide a virtual place where to encounter other workers, a virtual version of the physical "water cooler", the traditional place where to informally meet and share ideas.

    - Improve both collaboration and communication among workers in the virtual environment.
    - Receive and provide feedback (no more annually only, but more frequently with shorter versions that allow a faster identification of current issues and so to start corrective actions earlier).
    - Assign, measure, and adjust the right level of challenge at work (to *do not overdo it*).
    - Practice mindfulness (at work and not only).
- Outcomes:
    - stimulate eustress (i.e., positive stress),
    - generate happiness and motivation,
    - build a positive workplace,
    - allow employees to wisely administer their energy,
    - clearly communicate goals, scheduling, and their rationales to employees,
    - ease boundaries management of work/non-work roles,
    - promote the sharing of company information to all employees.

6.6 Lack of participation to well-being initiatives

Unfortunately, despite the increase of the well-being benefits provided by companies in the last years, their actual use by workers is just about one third of the entire workforce – according to 2021 EVP Benchmarking Survey by Gartner. (*The Gartner 2021 EVP Benchmarking Survey*, 2021)

The report depicts a discouraging picture, of the surveyed companies:

- 80% provides physical well-being initiatives, but only 32% of the workforce actually use them.
- 67% provides financial well-being initiatives, but only 25% of the workforce actually use them.
- 87% provides emotional/mental well-being initiatives, but only 23% of the workforce actually use them.

As noted in this research, providing engagement initiative is crucial, and what is even more important is to increase the participation to these programs by all the employees. The programs should be designed and delivered efficiently, but to be also efficacious, employees must be involved in all the program's phases, they must be educated about the program (and its benefits), and the employees' participation to these programs should be as effortless and straight as possible. This also implies, for managers, to understand the reasons behind the lack of employee participation and thus support workers to take part in the initiatives.

6.7 Some approaches from practitioners

To improve engagement among workers, Gartner (*The Gartner 2021 EVP Benchmarking Survey*, 2021) suggests not to completely stop with current offerings (the majority based on economic increases and/or bonuses), and to add an extra approach that is more at the individual level: managers (and thus companies) should care about their workers and – above all – make sure that them feel supported and understood (on both physical and emotional level). For example, the research found that only 37% of the workers interviewed agreed that companies understand their needs and the ones of their families.

Furthermore, what happens outside the workplace also has an impact on the work itself. Since 2009, the negative emotions felt by workers have been rising to alarming levels. The percentage of global employees feeling *a lot of the day* stress, worry, anger, and sadness rose from 31%, 30%, 19%, and 16% levels in 2009, to 44%, 40%, 23%, 21% respectively in 2021. Luckily, when employees are feeling engaged and are thriving the levels of stress, worry, anger and sadness clearly decrease. (Gallup, 2022)

At Microsoft (Klinghoffer & McCune, 2022), they leverage on data analytics to improve engagement performance of their employees. Moreover, they found that measuring (and improving) thriving provides more benefits to workers (and thus to the company) than evaluate *just* engagement. Indeed, the definition of *thriving* used at the company is very holistic: <*to be energized and empowered to do meaningful work*> (Klinghoffer & McCune, 2022).

The comprehensive approach to employee engagement that is used at Microsoft brought to adopt a completely different approach to engagement compared to other companies; indeed, its Chief People Officer (and the institution of this role is a clue of the importance of workers at the company) attributes employees' fulfillment to five different, and consecutive, aspects: pay, perks, people, pride, and purpose. It is a great example of a complete approach to employee satisfaction that starts with cash (pay and perks) and does not finish with it, instead continues providing gratifications to the person.

To support the Microsoft's approach – measuring and improving the thriving levels of its workforce – there is the annual Gallup research on the state of work around the world (Gallup, 2022): it stated that employees who are engaged but not thriving have more odds to suffer of burnout (+61%) compared to employees that are both engaged and thriving. The latter workers also experience less health problems, stress, and anger. Unfortunately, they are only 9% of the global workforce, a small portion of the work population especially if compared to the 57% of the global workforce that are neither engaged nor thriving.

Further, Microsoft developed a new product (on which there are high expectations) especially designed for the management and improvement of employee's well-being. That shows the increased interest in and awareness of employee well-being between companies. The product – Microsoft Viva – is a plat-

form (backed by a powerful Artificial Intelligence) that is asserted to help employees improve their enjoyment at work and their level of engagement, and thus productivity. It is, as published on the official website, <*an employee experience platform that brings together communications, knowledge, learning, resources, and insights in the flow of work. Powered by Microsoft 365 and experienced through Microsoft Teams, Viva fosters a culture that empowers people and teams to be their best from anywhere*>. https://www.microsoft.com/en-us/microsoft-viva (Microsoft, 2022)

The product promises to help with:

- balancing productivity and well-being,
- foster a heathy work culture,
- connect teams and individuals to common goals.

6.8 The framework (best practice model)

The best practice model has been thought as practical as possible and for this reason it has been designed around three main parts, namely *design employee engagement initiatives*, *improving suggestions*, and *the digital tool*.

The model starts providing advice on how to approach the design of any employee engagement initiatives. This section – design employee engagement initiatives – illustrates which should be the final goals for adopting any kind of technology in companies, it continues with the best uses for technology, and it ends illustrating a model for correctly delivering employee engagement initiatives.

In the second part of the model – improving suggestions – it is possible to find recommendations for improving employee engagement through suggestions for enhancing techno-work engagement (a state of well-being regarding the use of technology at work), for managing virtual teams, and for creating eustress (positive and beneficial stress).

In the last part – the digital tool – the newly developed digital platform is described illustrating in detail its features and benefits.

The best practice model is structured as following:

- Design employee engagement initiatives:
    - technology adoption initiatives' rationale,
    - best uses for technology,
    - model for delivering employee engagement initiatives correctly.
- Improving suggestions:
    - suggestions for enhancing techno-work engagement,
    - suggestions for managing virtual teams,

- suggestions for eustress creation.

- The digital tool:
  - the digital platform (web and APP).

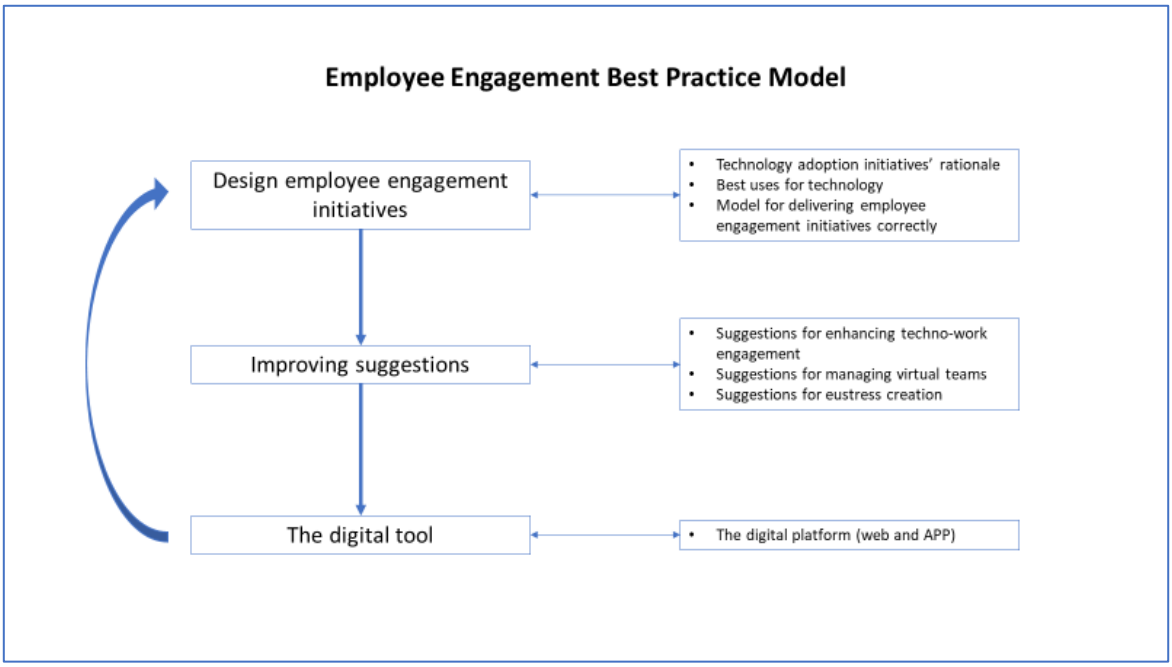

Figure 31 – Employee Engagement Best Practice Model

Lastly, in Appendix C, it is possible to find a visual summary of the best practice model.

6.8.1 Design employee engagement initiatives

Technology adoption initiatives' rationale:

- Balance the negative with the positive outcomes of any technology used at work.
- Embody into company culture:
  - a good balance between work and life,
  - a good balance between being on- and offline,
  - the understanding of the individual differences among employees, and managers that act consequently (mangers should work in conjunction with Human Resources department and psychologist to create the best – and tailored – approaches to use technology).
- Eliminate all the stress and anxiety that come from the adoption of a new technology.
- Improve the internal communication (on the new technology, its adoption, and the impact on workers' professional lives).
- Implement a seamless experience (physical mixed with digital) for employees.
- Guide workers into digital transformation, educating them on its benefits and its drawbacks.

- Acknowledge that digital transformations (like all the others), to last, need time to be implemented and absorbed.
- Use a holistic approach to employee engagement.
- Understand the reasons behind the lack of participation and thus support workers to take part in the initiatives.

Best uses for technology:

- Automate repetitive and routine tasks and thus allow workers to use their time in a more productive way.
- Help workers to have easy access to all the information needed to complete their tasks.
- Empower workers.
- Mitigate boredom and tiredness (before it becomes burnout) creating a stimulating environment, providing each worker jobs that fit their specific needs.
- Facilitate flexibility.

Model for delivering employee engagement initiatives correctly:

- Program management guidelines to accomplish projects goals in the best efficient and effective way are:
    - Programs need to be aligned to business goals.
    - Objectives need to be *SMART*: Specific, Measurable, Attainable, Relevant, and Time-Based.
    - Programs need to be evaluated in a credible (it should show the real value of the project) and systematic way (it should be replicable).
    - The definition of success must be unique and not change from project to project.
- To efficaciously suggest and justify program implementation act in accordance with the following suggestion:
    - Measure the outcome and justify the effort of any project and program using the Return on Investment (ROI) approach in addition to using the intangible and data from the macro-level.
- The planning to develop and execute a program – efficiently and efficaciously – should be the following:
    1. Starting the initiative:
        a. Measure the engagement level.
        b. Collect data before the initiative (essential to perform the gap analysis).
    2. Developing the initiative (initiative's design and communication):
        a. Develop goals to be accomplished by the initiative.
        b. Design the initiative.

c. Design the evaluation.
d. Design the controls.
e. Prepare the environment (executives/employees/company's culture) for the initiative:
    i. Establish strong partnerships with key stakeholders.
    ii. Share and explain the initiative to employees.

3. Executing the initiative:
    a. Implement the Initiative.
    b. Collect Data:
        i. Collect data during the initiative.
4. Closing the initiative:
    a. Collect Data:
        i. Collect data after the initiative.
    b. Analyze Data:
        i. Isolate the effects of the initiative.
        ii. Evaluate the initiative's effects on business (tangible impacts, like monetary value, benefit-cost ratio, etc.).
    c. Evaluate the initiative's impact.
    d. Evaluate the initiative's intangible benefits.
    e. Report:
        i. Report the results of the initiative.
        ii. Collect lessons learned to better replicate the initiative in the future.
5. Move to the next engagement initiative.

6.8.2 Improving suggestions

Suggestions for enhancing techno-work engagement:

- Gradually introduce any technology at workplace and establish clear rules about using it.
- Listen to employees' opinions and views on technology, and its impact on the workplace:
    - Let employees to be part of the decision-making process.
- Help employees to know the usefulness of technology at work, and its ease of use:
    - Explain and show how the implemented technology will improve their performance at work.
- Help employees to be autonomous in their tasks at work:
    - Create a strategic and defined plan to introduce new technologies to the workplace:
        - *First*, share information about new technology and the change/impact it could have on tasks.

        - *Second*, provide general training in technology.
        - *Third*, train to specific technology implemented.
    - Organize training programs.
    - They should have continuous opportunity to develop new skills and improve expertise on the technologies adopted by the company.
- Train supervisors, managers, and leaders in their crucial role for improving engagement:
    - Each of them must really know their workforce and the peculiar capabilities of each employee.
    - They should be able to correctly develop the essential job customization (all employees should perform tasks that they perceive as balanced between tasks challenge and the skills possessed to complete them).

Suggestions for managing virtual teams:

- Train the person acting as the virtual team leader role on the additional challenges a virtual team will face.
- Develop the engagement by:
    - clarity,
    - virtual introductions: Who is Who,
    - face-to-face meetings when possible.
- Support the engagement by:
    - open communication on all the aspects of the project,
    - updates on members' status on the project,
    - peer to peer support.
- Nourish the engagement by:
    - reflecting on lessons learned,
    - celebrating the end of the project,
    - developing links for future projects.

Suggestions for eustress creation:

- Companies should generate eustress (i.e., healthy stress) in their employees, and leverage it to create a healthy and engaging workplace.
- Companies should be conscious that there is a limit, that changes from person to person, in the quantity of stress that everyone can manage (be it positive or negative).
- Companies should be aware that everyone needs to recover energy (both physical and mental) – wisely administer energy management.
- Managers should increase the eustress at workplace, to the right level, by identifying the aspects of work that employees perceive as engaging (challenge stressors):

- Workload – Managers should assign to their workers a workload that is consistent with their capabilities: it should not be either under or over stimulating.
- Work pace – Managers should carefully understand the speed of completing tasks requested by their workers and request a fair time to complete jobs. In addition, they should explain to workers the rationale behind their requests.
- Job complexity – Managers should assign jobs that are consistent with workers' capabilities. Very important is to appoint people to the right position and develop training programs.
- Job responsibility – Managers should give responsibilities commensurate with the capabilities and knowing the willingness of each worker to handle them.

6.8.3 The digital tool

The digital platform (web and APP):

- Approach followed for the design of the digital platform:
  - minimize the user effort,
  - provide the freedom to discover,
  - enable follow-ups of progress,
  - enable learning from peers,
  - support the integration of skills into daily life.
- The platform's logical flow:
  - It starts with an employee's analysis.
  - It continues providing some initial needs' analysis.
  - It ends by providing exercises to perform in order to become familiar with and put in practice what learned.
- Features:
  - Facilitate breaks during the working day (like a Tomato Timer).
  - Allow employees to access mindfulness and meditating resources.
  - Create communities (allowing workers to build their own communities based on their interests) for improving the feeling of belonging between workers, and for strengthening and deepening their relationships.
  - Share information between employees and managers (in both directions).
  - Provide a virtual place where to encounter other workers, a virtual version of the physical "water cooler", the traditional place where to informally meet and share ideas.
  - Improve both collaboration and communication among workers in the virtual environment.

    - Receive and provide feedback (no more annually only, but more frequently with shorter versions that allow a faster identification of current issues and thus to start corrective actions earlier).
    - Assign, measure, and adjust the right level of challenge at work (to *do not overdo it*).
    - Practice mindfulness (at work and not only).
- Outcomes:
    - stimulate eustress (i.e., positive stress),
    - generate happiness and motivation,
    - build a positive workplace,
    - allow employees to wisely administer their energy,
    - clearly communicate goals, scheduling, and their rationales to employees,
    - ease boundaries management of work/non-work roles,
    - promote the sharing of company information to all employees.

6.9 Conclusion

Started analyzing the impact of technology to engagement of employee in general, and specifically, of Italian SMEs' ones, a best practice model has been suggested. The best practice model is founded on several theories and past studies on technology adoption, on modeling for projects delivery, on best approach to team management (especially virtual ones), and on creation of healthy stress and techno-work engagement. In addition to all of them, the best practice model is extensively based and tested on the feedback received by interviewed Italian workers. Lastly, a new digital tool designed for improving engagement among Italian SME's workers is presented.

The best practice model, that was designed as practical as possible, presents three main parts: design employee engagement initiatives, improving suggestions, and the digital tool.

The first part defines the foundations for creating engagement initiatives. It illustrates what the final goals for adopting any kind of technology in companies and which the best uses for technology should be, and proposing a model for correctly delivering projects about employee engagement.

In the second part of the model, there are recommendations for improving employee engagement. It focuses especially on approaches to enhance techno-work engagement, to better manage virtual teams, and to create eustress.

The last part of the model is dedicated to the new digital tool created for improving engagement among Italian SME's workers. It is a digital tool that is available as both a web platform and an APP for mobile devices.

7 Conclusion

7.1 Introduction

The role of the employee remains a critical aspect in any firm, especially for small and medium-sized enterprises (SMEs). Despite that, among scholars and practitioners, a growing body of research has demonstrated that happy and engaged employees lead to better performance, the effective management of workers is still a slow and difficult approach to implement.

While the disengagement costs to companies an average of $3,400 for every $10,000 of payroll (34%), Italy performs very poorly compared to the rest of the World: the amount of the engaged employees at Italian companies in 2021 was only 4% of the workforce sending Italy to the bottom of the list alone.

Furthermore, in recent years, employee engagement is even more crucial and difficult to achieve because of the hybrid work environment (working from the office and from home). Thus, manners in which technology could be used to improve engagement among employees were examined and a framework (best practice model) was developed to use technology to obtain higher levels of employee engagement in the context of Italian SMEs.

It is important to say that the most important precondition to a strong and long-lasting employee engagement at Italian SMEs is a genuine positive approach of companies owners to workers. Without that, any framework to improve engagement, and any effort put in its implementation, is useless. What emerged clearly from the in-depth interviews with workers at Italian SMEs is that the main obstacle to employee engagement is the culture. The old-style Italian SMEs owners' custom to perceive their employees only as a *mere company asset* – just a number – invalidates any contribution to engagement made by both technology and good relationship with colleagues.

The current research was not intended to study the problem of disengagement at work from the lens of organizational behavior, it was focused on inquiring about the contribution made by technology on employee engagement (if any). Thus, the outcome of the research is a framework (best practice model) that could improve employee engagement – through technology – only in working settings where the company atmosphere is not harmful, if not good.

The data collected from survey suggests a correlation between technology and engagement also between the small and medium-sized enterprises in Italy. Data showed a positive perceived feelings produced by use of technology at work (TechnoWES scale): the participants who 'agree' or 'strongly agree' to statements that affirm to experience positive feelings as an outcome of the use of technology were the majority – 53.33%. As expected, the opposite was observed in the section that measures the impacts of technostress creators (the higher the levels of technostress creators are, the lower the level of

engagement will be); and it was found high levels for technostress inhibitors (the higher the levels of technostress inhibitors are, the higher the level of engagement will be).

Furthermore, it has been observed high levels for job satisfaction and organizational commitment. Also these last two measurements are supported by the positive levels observed with the TechnoWES scale. The low presence of technostress creators and the high presence of technostress inhibitors, in addition to experience positive feelings as outcome of the use of technology at work, bring to a satisfying job and to a commitment to the company someone is working for.

One of the first thing that should be looked for (and be fixed) is the practical paradox of technology: the dual aspects of technology that, if from one side it helps the everyday life of any employee (and more in general, the life of everyone), on the other side the negative impacts of technology offset the positive outcomes. Thus, since its design, the first aspect to be incorporated in the best practice model (created to improve employee engagement through technology, and so enabling employees to feel more engaged and less disconnected) was the balance between these two aspects of technology at workplace: to provide guideline to let companies wisely balance the outcome from the technologies used by their employees, and to boost the advantages it brings (like accessibility and communication efficiency).

Lastly, the best practice model, that provides an important practical contribution, has been developed to be as practical as possible and to be easily adopted, and for this reason it has been designed around three main parts: design employee engagement initiatives, improving suggestions, and the digital tool.

7.2 Theoretical contribution

The study made the following theoretical contributions to the investigation of the employee engagement in the context of Italian SMEs:

- Of the extensive literature about employee engagement, the study provides an analysis of the most important contributions to definition of engagement, notion of employee engagement, and theories related to these concepts making them easily accessible (and gathered in one place) in the future from anyone interested in the subject.
- Moreover, the principal theories and the main studies about the extensive use of technology in companies, and its effects, have also been analyzed and presented in this paper.
- Lastly, the study provides a contribution to the literature with a current picture of the employee engagement in Italian SMEs with the analysis of the data obtained from the survey and interviews. Furthermore, data obtained during the research and its findings are available for future research on the topic.

7.3 Practical contribution

Even if all organizations want to gain their performance, most of the Italian employers still do not believe that they could achieve improvements increasing engagement, and that it is possible by a smart use of technology at work. Thus, this study wants to spur Italian entrepreneurs of SMEs to rethink the employee role in their companies, their relationships and, above all, to explain how to do that via technology. Thus, the practical contribution of this study is a framework – a best practice model – for improving employee engagement through technology and so enabling employees to feel more engaged and less disconnected.

Moreover, the literature review clearly showed the lack of research on employee engagement in the context of Italian SMEs, thus the researcher adapted the general studies and theories into this specific context and, in conjunction of the analysis of the data obtained from the survey and interviews, they were incorporated into the best practice model.

The best practice model makes contribution in the following ways:

- Explaining the rationale behind any technology adoption initiatives (to create a responsive business environment).
- Providing a process to follow for delivering employee engagement initiatives correctly (to obtain projects goals in the most efficient and effective way).
- Explain how technology should be used (to show *what to do* versus *what not to do* with technology to obtain higher level of engagement).
- Introducing suggestions for improving techno-work engagement (to offer approaches to obtain techno-work engagement – *well-being with the use of technology at work*).
- Presenting advice for managing virtual teams (to recommend best approaches to manage virtual teams).
- Suggestions for eustress creation (to propose advice to create eustress – *healthy stress*).
- Designing a digital platform to support employee engagement (to introduce a digital platform thought to help companies managing and increasing engagement levels among employees).

7.4 Research rationale aim and objectives

As described earlier, the overall goal of the current study was to explore the use of technology as an enabler of employee engagement and, more specifically, to define how technology could be used to enhance employee engagement in Italian SMEs. Moreover, the findings of the research were used to develop a best practice model.

The lack of empirical research about employee engagement in Italy and, specifically, in the context of SMEs, was the first motivating factors in carrying out this research. The second reason was to analyze

the use of technology in companies from a different angle – not analyzing how technology could be used to increase productivity, but how it could gain engagement levels. The final reason was to provide real contributions to companies with practical suggestions, that they could easily adopt and integrate into their environments and that could provide a positive outcome – increased levels of employee engagement – in a short time.

7.5 Literature gaps addressed

The literature review performed for this study has been conducted firstly to use definitions and tools largely consolidated and with deeply proved validity, and then to find and to analyze gaps in the literature over the context of the Italian SMEs. Thus, outcomes of the literature review have been extensively used to design the research method, to develop the best practice model, and kept in the researcher's mind during all the study in order to try to address them

Employee engagement is an essential topic in the context of company management and so it is understandable that exists extensive literature on it. What has been found very clearly during the process of analyzing literature is that there are few studies inquiring into employee engagement in the context of Italian companies – whether they are large or SMEs.

This study analyzed the most important contributions to definition of engagement, notion of employee engagement, and theories related to these concepts, and it also summarized them to be easily accessed in the future from anyone interested in the concept. Moreover, the principal theories and the main studies about the extensive use of technology in companies, and its effects, have also been analyzed and presented in this paper.

Unfortunately, no one of those studies were from the Italian context, and thus the researcher adapted his results to the Italian context and integrated them into the framework (best practice model). Moreover, this study inquired the employee engagement level in the Italian SMEs and the relationship between employee engagement and technology with a questionnaire (a multiple-choice questions survey, anonymously provided via internet) and in-depth interviews (open ended questions in semi-structured interviews, taken via live meetings). The primary data obtained during the research and its findings are available for future studies and provide a contribution to the literature with a current picture of the employee engagement condition in Italian SMEs.

7.6 Overview of the main empirical findings

The analysis of the data collected with the survey suggests a correlation between technology and employee engagement in the context of the small and medium-sized enterprises in Italy.

The majority of the employees interviewed for the research showed positive perceived feelings produced by their use of technology at work (TechnoWES scale), and also low levels for technostress creators. The latter supports the negative correlation of engagement with technostress creators – the lower the levels of technostress creators are, the higher the level of engagement will be.

Moreover, it has been observed high levels for technostress inhibitors, in most of the answers of the survey. This supports the positive correlation of engagement with the technostress inhibitors – the higher the levels of technostress inhibitors are, the higher the level of engagement will be. In addition to that, it has been observed high levels for job satisfaction and organizational commitment.

In conclusion, it is possible to affirm that the low presence of technostress creators and the high presence of technostress inhibitors, in addition to experience positive feelings as outcome of the use of technology at work, bring to a satisfying job and to a commitment to the company that is working for.

Furthermore, the analysis of the semi-structured interviews brought to the light the actual and profound reasons of the deep lack of employee engagement at Italian companies. The first important aspect that clearly emerged from interviews is the general negative feelings felt by most of the interviewed employees. More than half of the words used to describe their companies were negative; whereas the words used to describe their job were equally divided from positive and negative.

The second aspect is that, for the interviewed workers, the main impact on their engagement comes from the *quality* of activities performed at work and, especially, from the *quality* of the relationships they have with supervisors and colleagues, instead *just* the technology used.

A third aspect is the companies' disinterest in their workers' feelings and mental conditions at work. Employees complain about the high presence of negative stress at work; nonetheless, nothing is done by companies to reduce it.

A final and, at the same time, crucial aspect that emerged from the interviews was that all the interviewees cited as the root cause of the poor engagement at Italian companies the *employers' culture* (referring to it to for explaining how their employers perceive workers and the role of them at company), and the *lacking management* (most of the employees complained about poor planning and poor communication of their supervisors).

Building on the data collected and analyzed in this study, it is possible to consider technology as a catalyst that could be used to amplify positive relationships at work and to be used to speed up and simplify tasks, although not for improving engagement per se. It emerged that, even if technology makes tasks easier, safer, and faster, it improves relationships, and it has a substantial impact on performance, at the same time, no evidence came out that could support the active role of technology alone on employee engagement – neither raising engagement nor decreasing it.

Thus, it is important to clarify that the most important precondition to a healthy and long-lasting employee engagement – at Italian SMEs – is a genuine positive approach of entrepreneurs to workers. Without that any framework to improve employee engagement with the adoption of technology, and any effort put into its implementation, are useless. If the *old-style* Italian SMEs owners' custom to perceive their employees only as a *mere company asset* – just a number – do not change, it invalidates any contribution to engagement made by both technology and good relationship with colleagues.

In addition, it was clearly revealed the controversial approach of the Italian SMEs regarding technology: entrepreneurs do not want to introduce more technology into their companies principally because they perceive technology at work as worthless and, above all, costly.

7.7 Research limitations

In this section, it is reviewed the success in reaching the original objectives and meeting the original aim of the study, and its limitations in respect to the methodologies adopted. The overall quality of the study, as well as the validity and reliability of the data obtained and analyzed, are examined. Moreover, some limitations and decisions taken concerning practical considerations are exposed.

Because the overall aim of the current study is to explore the use of technology as an enabler of employee engagement in Italian SMEs, data collected and analyzed is from Italian SMEs' workers, and the best practice model has been developed specifically for the Italian SMEs' context. Thus, even if the observed trends seem to be relevant not only for (Italian) SMEs, it is not possible to affirm that the current study is generally applicable to all Italian companies. Moreover, the research was not carried out in any specific industry, but in the SMEs operating on the Italian territory; thus, the data could be used for generalizing trends for all the Italian SMEs, and they are free of any particular customs imposed by industry's dynamics.

Each part of this research project was performed transparently and described in detail, allowing the reader to judge its quality and to be able to replicate it if wanted. Moreover, the quantitative data was analyzed for data reliability and validity for assessing research quality. Additionally, the scales used in the research – the Techno-Work Engagement Scale (TechnoWES) (Mäkiniemi et al., 2020) and the Technostress scale (Ragu-Nathan et al., 2008; Salanova et al., 2013) – have high reliability and validity. Furthermore, the survey was completely anonymous, and the researcher did not know the respondents and so any kind of influence was not possible.

For the qualitative analyses, because of their different nature (they refer to social science, and data reflects the analyzed scenario at the time of the observation), it is not fair to assess their quality through their replication or generalizability (Baxter & Sommerville, 2010; Jones, 2013; Saunders et al., 2016). Instead, any used techniques were described with accurate explanation of how data was obtained and

analyzed. Additionally, techniques of validation, like participant validation, was used to avoid (or at least minimize) any possible bias.

Furthermore, it was selected the semi-structured interview as the method for collection data from live questioning to balance the researcher's need to receive information specific to some aspects of the worker's professional life and, at the same time, not limiting the possible information to be received, like information not known by the researcher and specific to the worker's environment and experience.

The researcher previously knew professionally some of the interviewed workers (because the researcher collaborated with some of them); despite that, no influence of any kind has been identified. The study was designed to prevent any influence and to counter any bias. For example, during the interviews, the perspective of the researcher and any previous results were not exposed until the end of the interview. Furthermore, it is important to say that the researcher did not have any involvement with the case-study firms, nor had any connection with the management or the owners of those companies.

The research did not experience the problem of potentially sharing company's confidential data. During all the interviews only perspectives and feelings of the interviewed workers (as well as some episodes that happened to them, general customs, and company culture) were discussed and no companies' confidential information has been shared.

The approach selected to theory development of the research was abductive because the research is based on research of data, generation of theory, test of it, and research for additional data. Moreover, the exploratory sequential mixed methods design was selected because this methodology helps with the selection of the right sample and indicators (in the quantitative analysis) and with the valuation of the phenomenon (the qualitative part) and can provide explanatory power. Indeed, the research, building on the quantitative analysis, explains the correlation between employees' engagement and company's use of technology.

Lastly, from a personal viewpoint, the researcher believes that he has been as independent and objective as could be possible; moreover, no potential conflict of interest has been raised. Nonetheless, this study is based on a limited sample of Italian SMEs, and this could be a limitation to the generalization of the theory to all the SMEs on the Italian territory. It is still not clear to the researcher the reasons of the very limited responses to the study (especially for the questionnaire) from the Italian southern territories. The reasons behind the lack of territories represented in the study should be analyzed further and mitigated when additional studies covering companies on Italian territories will be designed.

7.8 Further areas for research

The current research was not intended to study the issue of low engagement at Italian SMEs from the point of view of organizational behavior, it was focused on inquiring its relationship with technology instead. Thus, the outcome of the research is a framework (a best practice model) used to improve employee engagement through technology. Nevertheless, it is important to study the problem of disengagement further and with different perspectives; only with that holistic approach it could be possible to understand in-depth the root cause of the disengagement in Italy and reduce it if not resolve at all.

Inquiring about employee engagement from the point of view of relationship between employers and their employees would be an important area for increasing the engagement level, and it could be a solid foundation on which to apply the framework (best practice model) developed in the current research. In the context of Italian SMEs, a better understanding of the controversial relationship employer/employee, and the behaviors which arise from it, is paramount.

Lastly, an additional area for performing further studies is to inspect why several Italian SMEs' entrepreneurs perceive technology at work as worthless and, above all, costly. These could help understanding the root causes behind entrepreneurs' perception and could be helpful for advancing the adoption of technology in Italian SMEs.

8 Appendix A (quantitative)

In this section:

- Copy of the questionnaire used.
- Copy of the answers.

The questionnaire, now closed, was available on the International Telematic University Uninettuno's Microsoft Forms platform at https://forms.office.com/r/h280zrPG4T.

8.1 Copy of the questionnaire used

1st page – Cover

Study on correlation between employee engagement and technology

Hello,

My name is Francesco Campione and first of all I wanted to thank you for the time you will dedicate to answering the questionnaire.

This is an integral part of my research project within the doctoral program (DBA – Doctorate in Business Administration, at the International Telematic University UNINETTUNO). A brief introduction to the research I am carrying out can be found on the next page.

Furthermore, I would like to point out that the answers are anonymous.

Thank you for your help!

Francesco

* Required

The survey will take approximately 10 minutes to complete.

2nd page – Introduction

Research title: Employee engagement and technology: a case study analysis of best practice in Italian SMEs

Researcher: Francesco Campione

University: Uninettuno International Telematic University

Description: As each of us can testify, we live in an increasingly digital world and the digitalization of working life is expected to be a driver of business growth in the near future.

Technology brings with it both positive aspects (definable and measurable through the 'techno-work engagement' scale) and negative effects (definable and measurable through the 'technostress' scale).

Unfortunately, over the years the feeling of disconnection between workers and their companies has also increased.

The research I am carrying out is based on the study of the relationship of employee satisfaction with technology and aims to create a framework to reduce this state of disconnection through the use of technology.

The Survey [*English version*]

Section 1 - TechnoWES

The word "technology" here refers to the digital tool(s) used by you during your work, whether it is done at the office, home or anywhere else.

Thus, this "technology" can be a software (for example, ERP, Excel, etc.), an APP (used both through mobile phone and via web, such as WhatsApp, etc.), or any other "digital" tool that your organization provides (for example, e-mail, collaboration or videoconferencing tool, etc.).

1. When I utilize technology in my work, I feel that I am bursting with energy.
2. I feel strong and vigorous when I use technology in my job.
3. I always persevere with using technology in my work, even when it does not go well.
4. I am enthusiastic about utilizing technology in my job.
5. Utilizing technology inspires me in my job.
6. I am proud that I utilize technology in my work.
7. I feel happy when I am immersed in using technology in my work.
8. I am completely immersed in using technology in my work.
9. I get carried away when I'm working with technology.

Section 2 - Technostress creators | Techno-overload

The word "technology" here refers to the digital tool(s) used by you during your work, whether it is done at the office, home or anywhere else.

Thus, this "technology" can be a software (for example, ERP, Excel, etc.), an APP (used both through mobile phone and via web, such as WhatsApp, etc.), or any other "digital" tool that your organization provides (for example, e-mail, collaboration or videoconferencing tool, etc.).

10. I am forced by this technology to work much faster.
11. I am forced by this technology to do more work than I can handle.
12. I am forced by this technology to work with very tight time schedules.
13. I am forced to change my work habits to adapt to new technologies.
14. I have a higher workload because of increased technology complexity.
15. I spend less time with my family due to this technology.
16. I have to be in touch with my work even during my vacation due to this technology.
17. I have to sacrifice my vacation and weekend time to keep current on new technologies.
18. I feel my personal life is being invaded by this technology.
19. I do not know enough about this technology to handle my job satisfactorily.
20. I need a long time to understand and use new technologies.
21. I do not find enough time to study and upgrade my technology skills.
22. I find new recruits to this organization know more about computer technology than I do.
23. I often find it too complex for me to understand and use new technologies.
24. I feel constant threat to my job security due to new technologies.
25. I have to constantly update my skills to avoid being replaced.

26. I am threatened by coworkers with newer technology skills.
27. I do not share my knowledge with my coworkers for fear of being replaced.
28. I feel there is less sharing of knowledge among coworkers for fear of being replaced.
29. There are always new developments in the technologies we use in our organization.
30. There are constant changes in computer software in our organization.
31. There are constant changes in computer hardware in our organization.
32. There are frequent upgrades in computer networks in our organization.

Section 3 - Technostress inhibitors | Literacy facilitation

The word "technology" here refers to the digital tool(s) used by you during your work, whether it is done at the office, home or anywhere else.

Thus, this "technology" can be a software (for example, ERP, Excel, etc.), an APP (used both through mobile phone and via web, such as WhatsApp, etc.), or any other "digital" tool that your organization provides (for example, e-mail, collaboration or videoconferencing tool, etc.).

33. Our organization encourages knowledge sharing to help deal with new technology.
34. Our organization emphasizes teamwork in dealing with new technology-related problems.
35. Our organization provides end-user training before the introduction of new technology.
36. Our organization fosters a good relationship between IT department and end users.
37. Our organization provides clear documentation to end users on using new technologies.
38. Our end-user help desk does a good job of answering questions about technology.
39. Our end-user help desk is well staffed by knowledgeable individuals.
40. Our end-user help desk is easily accessible.
41. Our end-user help desk is responsive to end-user requests.
42. Our end users are encouraged to try out new technologies.
43. Our end users are rewarded for using new technologies.
44. Our end users are consulted before introduction of new technology.
45. Our end users are involved in technology change and/or implementation.

Section 4 – Job satisfaction

46. I like doing the things I do at work.
47. I feel a sense of pride in doing my job.
48. My job is enjoyable.

Section 5 - Organizational commitment

49. I would be happy to spend the rest of my career in this organization.
50. I enjoy discussing my organization with people outside it.
51. I really feel as if this organization’s problems are my own.
52. This organization has great deal of personal meaning for me.

Section 6 - Continuance commitment

53. Too much of my life would be disrupted if I decided I want to leave my organization right now.
54. Right now staying with my organization is a matter of necessity as much as desire.
55. I believe that I have too few options to consider leaving this organization.
56. It would be very hard for me to leave my organization right now even if I wanted to.

Section Technology detail

57. What technologies have you thought about answering the previous questions? [essay question]

Section Company data

58. What does your company do?
59. How many employees does your company have?
60. In which city is your company based?

The Survey [*Italian version*]

Sezione 1 – TechnoWES

Con il termine "tecnologia" si intende lo strumento (o gli strumenti) digitale(i) utilizzato(i) da te durante il tuo lavoro, che sia svolto dall'ufficio, da casa o da qualsiasi altro posto.

Quindi, questa "tecnologia" può essere un software (ad esempio il gestionale, Excel, etc.), un'APP (utilizzata sia attraverso il cellulare che via web, come ad esempio WhatsApp, etc.), o qualsiasi altro strumento "digitale" che la tua organizzazione di fornisce (ad esempio la posta elettronica, strumento di collaborazione o di videoconferenza, etc.).

1. Quando utilizzo la tecnologia nel mio lavoro, sento di essere pieno di energia.
2. Mi sento forte e vigoroso quando utilizzo la tecnologia nel mio lavoro.
3. Persevero sempre nell'utilizzare la tecnologia nel mio lavoro, anche quando non va bene.
4. Sono entusiasta di utilizzare la tecnologia nel mio lavoro.
5. L'utilizzo della tecnologia mi ispira nel mio lavoro.
6. Sono orgoglioso/a di utilizzare la tecnologia nel mio lavoro.
7. Mi sento felice quando sono immerso nell'uso della tecnologia nel mio lavoro.
8. Sono completamente immerso nell'uso della tecnologia nel mio lavoro.
9. Mi faccio trasportare quando lavoro con la tecnologia.

Sezione 2 – Technostress creators | Techno-overload

Con il termine "tecnologia" si intende lo strumento (o gli strumenti) tecnologico(i) utilizzato(i) da te durante il tuo lavoro, che sia svolto dall'ufficio, da casa o da qualsiasi altro posto.

Quindi, questa "tecnologia" può essere un software (ad esempio il gestionale, Excel, etc.), un'APP (utilizzata sia attraverso il cellulare che via web, come ad esempio WhatsApp, etc.), o qualsiasi altro strumento "digitale" che la tua organizzazione di fornisce (ad esempio la posta elettronica, strumento di collaborazione o di videoconferenza, etc.).

10. Sono costretto da questa tecnologia a lavorare molto più velocemente.
11. Sono costretto da questa tecnologia a fare più lavoro di quanto io possa gestire.
12. Sono costretto da questa tecnologia a lavorare con orari molto stretti.
13. Sono costretto a cambiare le mie abitudini di lavoro per adattarmi alle nuove tecnologie.
14. Ho un carico di lavoro più elevato a causa della maggiore complessità tecnologica.
15. Passo meno tempo con la mia famiglia a causa di questa tecnologia.
16. Sono in contatto con il mio lavoro anche durante le mie vacanze a causa di questa tecnologia.
17. Devo sacrificare le mie vacanze ed il fine settimana per mantenermi aggiornato sulle nuove tecnologie.

18. Sento che la mia vita personale è invasa da questa tecnologia.
19. Non so abbastanza di questa tecnologia per gestire il mio lavoro in modo soddisfacente.
20. Ho bisogno di molto tempo per capire e usare le nuove tecnologie.
21. Non trovo abbastanza tempo per studiare e aggiornare le mie competenze tecnologiche.
22. Trovo che i neo assunti ne sappiano più di me di informatica.
23. Spesso trovo troppo complesso per me capire e utilizzare le nuove tecnologie.
24. Sento una costante minaccia per la mia sicurezza del lavoro a causa delle nuove tecnologie.
25. Devo aggiornare costantemente le mie abilità per evitare di essere sostituito.
26. Mi sento minacciato dai colleghi con competenze tecnologiche più attuali.
27. Non condivido le mie conoscenze con i miei colleghi per paura di essere sostituito.
28. Ritengo che vi sia meno condivisione di conoscenze tra i colleghi per paura di essere sostituiti.
29. Ci sono sempre nuovi sviluppi nelle tecnologie che utilizziamo nella nostra organizzazione.
30. Ci sono costanti cambiamenti nel software per computer nella nostra organizzazione.
31. Ci sono costanti cambiamenti nell'hardware del computer nella nostra organizzazione.
32. Ci sono frequenti aggiornamenti nelle reti di computer nella nostra organizzazione.

Sezione 3 – Technostress inhibitors | Literacy facilitation

Con il termine “tecnologia” si intende lo strumento (o gli strumenti) tecnologico(i) utilizzato(i) da te durante il tuo lavoro, che sia svolto dall’ufficio, da casa o da qualsiasi altro posto.

Quindi, questa “tecnologia” può essere un software (ad esempio il gestionale, Excel, etc.), un’APP (utilizzata sia attraverso il cellulare che via web, come ad esempio WhatsApp, etc.), o qualsiasi altro strumento “digitale” che la tua organizzazione di fornisce (ad esempio la posta elettronica, strumento di collaborazione o di videoconferenza, etc.).

33. La nostra organizzazione incoraggia la condivisione delle conoscenze per aiutare ad affrontare le nuove tecnologie.
34. La nostra organizzazione enfatizza il lavoro di squadra nell'affrontare i nuovi problemi legati alla tecnologia.
35. La nostra organizzazione fornisce formazione per gli utenti finali prima dell'introduzione di nuove tecnologie.
36. La nostra organizzazione promuove una buona relazione tra il reparto IT e gli utenti finali.
37. La nostra organizzazione fornisce una documentazione chiara agli utenti finali sull'utilizzo delle nuove tecnologie.
38. Il nostro help desk fa un buon lavoro nel rispondere alle domande sulla tecnologia.
39. Il nostro help desk è formato da persone preparate.
40. Il nostro help desk è facilmente accessibile.
41. Il nostro help desk risponde velocemente alle richieste degli utenti.
42. I nostri utenti finali sono incoraggiati a provare nuove tecnologie.
43. I nostri utenti finali sono ricompensati per l'utilizzo di nuove tecnologie.
44. I nostri utenti finali vengono consultati prima dell'introduzione di nuove tecnologie.
45. I nostri utenti finali sono coinvolti nel cambiamento e/o nell'implementazione di nuove tecnologie.

Sezione 4 – Job satisfaction

46. Mi piace fare le cose che faccio al lavoro.
47. Provo un senso di orgoglio nel fare il mio lavoro.
48. Il mio lavoro è piacevole.

Sezione 5 – Organizational commitment

49. Sarei felice di passare il resto della mia carriera in questa organizzazione.
50. Mi piace discutere della mia organizzazione con persone esterne.
51. Mi sento davvero come se i problemi di questa organizzazione fossero miei.
52. Questa organizzazione ha un grande significato personale per me.

Sezione 6 – Continuance commitment

53. Gran parte della mia vita sarebbe stravolta se decidessi di voler lasciare la mia organizzazione in questo momento.
54. In questo momento rimanere con la mia organizzazione è una questione di necessità tanto quanto il desiderio.
55. Credo di avere troppo poche opzioni per prendere in considerazione la possibilità di lasciare questa organizzazione.
56. Sarebbe molto difficile per me lasciare la mia organizzazione in questo momento anche se volessi.

Dettagli sulla tecnologia

57. A quali tecnologie hai pensato nel rispondere alle domande precedenti?

Dati sull'azienda

58. Di cosa si occupa la tua azienda?
59. Quanti dipendenti ha la tua azienda?
60. In quale città ha sede la tua azienda

Last page – Greetings

Thank You!

If you want to receive more information about this research leave your email below.

IMPORTANT: Your email address will only be used to send material about this search. It will not be used in any way for advertising purposes, nor released to third parties.

For any information related to the questionnaire, contact me at f.campione@students.uninettunouniversity.net

61. Name (optional)
62. E-mail (optional)

8.2 Copy of the answers

Primary data obtained from the questionnaire of this study follows.

Scale		Questions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
TechnoWES	Vigor (dimension)*	When I utilize technology in my work, I feel that I am bursting with energy.	4	3	3	3	4	3	4	4	4	3	5	4	2	2	4	4	5	3	3	4	3	4	5	4	4	4	4	4	3	2
		I feel strong and vigorous when I use technology in my job.	4	3	3	3	4	3	4	3	4	3	5	4	2	2	3	4	5	3	3	4	3	3	5	4	4	4	4	4	3	2
		I always persevere with using technology in my work, even when it does not go well.	3	2	1	3	1	2	3	4	3	1	4	2	3	3	2	2	2	4	3	3	4	2	2	3	3	3	5	4	5	1
	Dedication (dimension)*	I am enthusiastic about utilizing technology in my job.	5	3	5	4	4	4	5	4	4	4	5	4	3	3	5	5	5	2	4	4	2	3	5	4	4	4	5	4	5	3
		Utilizing technology inspires me in my job.	5	1	3	4	1	4	5	4	5	4	5	4	2	4	5	5	5	4	3	3	2	2	5	3	4	3	4	4	5	3
		I am proud that I utilize technology in my work.	5	2	5	4	3	3	5	4	4	3	5	4	2	3	5	4	5	3	4	4	2	3	5	5	4	3	5	4	5	3
	Absorption (dimension)*	I feel happy when I am immersed in using technology in my work.	5	1	3	3	1	5	4	3	4	3	5	4	4	3	4	2	5	1	3	3	2	2	5	5	4	2	3	4	3	2
		I am completely immersed in using technology in my work.	4	2	3	4	2	4	3	4	4	3	5	4	1	2	4	2	3	4	3	4	3	2	5	3	4	3	3	5	3	4
		I get carried away when I'm working with technology.	4	2	3	3	2	3	4	4	4	3	5	4	2	3	4	3	5	4	3	4	3	2	5	4	5	4	3	5	4	3
Technostress creators	Techno-overload	I am forced by this technology to work much faster.	5	5	3	3	2	3	3	4	4	1	1	1	1	4	3	4	2	2	5	5	1	3	3	2	2	3	3	1	4	2
		I am forced by this technology to do more work than I can handle.	3	4	3	2	1	5	4	3	3	1	4	1	4	5	2	2	1	2	5	5	4	2	3	2	3	4	3	3	4	2
		I am forced by this technology to work with very tight time schedules.	4	3	3	2	1	5	3	5	3	1	2	1	1	4	1	2	1	4	4	5	4	2	3	3	4	5	2	1	4	2
		I am forced to change my work habits to adapt to new technologies.	4	5	1	2	2	3	3	5	2	1	1	1	1	4	3	4	5	4	4	4	3	3	3	3	1	3	2	1	4	2
		I have a higher workload because of increased technology complexity.	3	5	2	2	1	5	2	3	2	2	2	1	1	4	1	3	2	3	4	3	5	4	3	2	3	3	4	1	4	2
	Techno-invasion	I spend less time with my family due to this technology.	2	2	3	1	1	5	2	2	4	2	4	1	2	4	1	2	1	4	2	3	3	4	1	4	2	3	2	4	1	2
		I have to be in touch with my work even during my vacation due to this technology.	4	5	4	4	1	5	3	5	5	5	5	1	5	4	2	2	1	5	1	5	2	4	1	4	5	3	4	4	4	3
		I have to sacrifice my vacation and weekend time to keep current on new technologies.	2	1	1	1	1	4	2	3	3	1	2	1	4	4	2	2	1	2	1	3	2	2	1	2	3	2	1	1	3	1
		I feel my personal life is being invaded by this technology.	5	4	2	3	1	5	3	5	5	1	1	1	4	4	2	2	1	5	3	5	1	3	5	3	1	2	1	3	5	2
	Techno-complexity	I do not know enough about this technology to handle my job satisfactorily.	2	3	3	4	1	3	3	4	4	2	2	1	2	2	1	3	1	4	1	3	3	3	1	1	1	3	3	1	3	1
		I need a long time to understand and use new technologies.	2	4	3	2	1	3	3	5	3	2	1	1	1	3	1	2	1	3	1	2	3	2	1	1	1	3	3	1	4	1
		I do not find enough time to study and upgrade my technology skills.	5	5	5	3	1	5	4	5	5	3	3	1	1	3	1	2	3	3	2	3	3	4	3	1	1	4	2	3	3	1
		I find new recruits to this organization know more about computer technology than I do.	4	3	2	1	4	5	3	5	2	5	1	1	1	3	2	2	3	3	3	5	1	3	1	1	2	3	4	1	4	4
		I often find it too complex for me to understand and use new technologies.	2	3	3	1	1	3	2	3	1	1	1	1	1	3	1	2	1	2	2	2	3	2	1	1	1	3	4	1	2	1
	Techno-insecurity	I feel constant threat to my job security due to new technologies.	1	3	1	1	1	4	2	1	1	1	1	1	1	3	1	1	1	1	1	2	2	2	3	1	1	3	1	1	2	1
		I have to constantly update my skills to avoid being replaced.	2	3	1	1	1	3	2	3	2	1	5	1	1	3	2	1	3	2	3	4	4	3	1	1	3	4	4	1	2	1
		I am threatened by coworkers with newer technology skills.	1	2	1	1	2	3	3	4	2	1	1	1	1	3	1	1	1	1	1	3	3	2	1	1	1	4	3	1	2	1
		I do not share my knowledge with my coworkers for fear of being replaced.	1	2	1	1	1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	3	1	1	1	1
		I feel there is less sharing of knowledge among coworkers for fear of being replaced.	1	2	3	2	1	3	2	2	2	1	2	1	1	3	1	1	1	1	1	2	1	4	5	1	1	4	1	3	1	3
	Techno-uncertainty	There are always new developments in the technologies we use in our organization.	1	2	3	3	2	3	3	5	2	2	4	1	1	4	4	4	4	3	5	3	5	2	5	3	3	3	4	5	4	2
		There are constant changes in computer software in our organization.	3	3	3	3	2	3	3	4	1	2	4	1	1	4	3	4	4	1	4	3	5	3	3	2	2	4	4	5	4	1
		There are constant changes in computer hardware in our organization.	3	3	1	2	2	3	4	4	1	2	4	1	1	4	2	2	4	1	3	3	5	2	5	2	3	2	2	5	3	1
		There are frequent upgrades in computer networks in our organization.	4	3	1	3	2	3	3	5	1	2	3	1	1	4	3	3	5	1	3	3	3	2	5	1	2	3	3	5	4	2
Technostress inhibitors	Literacy facilitation*	Our organization encourages knowledge sharing to help deal with new technology.	4	3	3	4	4	3	3	5	5	4	4	1	1	3	4	3	5	4	5	5	5	2	5	4	5	2	4	4	5	1
		Our organization emphasizes teamwork in dealing with new technology-related problems.	4	3	3	4	4	3	2	5	4	4	4	1	1	3	4	3	5	4	5	5	5	2	5	5	5	2	4	4	5	2
		Our organization provides end-user training before the introduction of new technology.	4	3	5	4	4	3	3	5	2	4	4	4	1	3	4	1	5	4	3	4	4	2	5	4	5	2	3	4	4	1
		Our organization fosters a good relationship between IT department and end users.	4	3	3	4	4	3	2	4	2	4	4	4	1	3	5	1	5	5	4	5	4	4	5	5	5	2	4	4	3	1
		Our organization provides clear documentation to end users on using new technologies.	5	3	1	4	4	3	3	4	2	4	3	4	1	3	5	1	3	5	3	4	3	2	5	3	5	2	4	2	2	1
	Technical support provision*	Our end-user help desk does a good job of answering questions about technology.	4	3	3	3	4	3	3	5	2	4	5	4	1	1	5	2	5	5	4	5	5	3	5	3	5	3	2	3	4	2
		Our end-user help desk is well staffed by knowledgeable individuals.	5	3	3	4	5	4	3	5	2	4	2	4	2	2	5	3	3	5	4	5	4	4	5	4	5	2	3	3	5	4
		Our end-user help desk is easily accessible.	2	3	3	3	5	4	3	5	2	4	5	4	2	2	5	3	3	5	5	5	5	3	5	4	5	2	3	2	5	4
		Our end-user help desk is responsive to end-user requests.	2	3	3	3	4	4	3	5	2	4	5	4	2	2	5	3	5	5	4	5	5	2	5	4	5	2	2	2	5	4
	Involvement facilitation*	Our end users are encouraged to try out new technologies.	4	3	5	3	4	4	2	5	2	4	5	1	1	3	5	2	5	5	4	4	5	2	5	3	5	2	2	4	4	2
		Our end users are rewarded for using new technologies.	2	3	1	2	2	1	2	3	2	2	3	1	1	3	1	3	3	4	4	4	1	1	5	3	5	2	4	1	3	2
		Our end users are consulted before introduction of new technology.	4	3	1	2	2	1	3	4	1	4	4	4	1	1	3	3	3	3	2	4	1	1	3	2	5	2	2	1	2	2
		Our end users are involved in technology change and/or implementation.	4	4	3	3	2	1	3	5	1	4	5	4	1	1	4	3	5	3	2	4	1	2	3	3	5	2	2	3	2	1
	Job satisfaction*	I like doing the things I do at work.	5	5	3	3	4	4	3	5	5	4	5	5	1	4	4	2	5	3	4	5	4	4	5	5	5	2	5	5	5	3
		I feel a sense of pride in doing my job.	4	5	5	3	4	3	4	5	5	3	5	5	2	4	4	2	5	4	4	5	5	3	5	4	5	3	5	5	5	3
		My job is enjoyable.	5	5	5	3	4	4	3	5	5	4	5	2	1	4	4	2	4	3	4	5	4	2	5	4	5	2	5	3	5	3
	Organizational commitment*	I would be happy to spend the rest of my career in this organization.	5	3	4	4	4	1	3	4	4	1	5	2	1	1	1	2	3	4	1	5	5	2	5	5	3	1	4	3	4	3
		I enjoy discussing my organization with people outside it.	5	4	5	4	4	5	3	5	4	3	5	5	1	1	3	3	5	4	3	5	3	2	5	5	3	2	4	1	4	1
		I really feel as if this organization's problems are my own.	3	4	5	4	4	4	4	5	5	4	5	5	1	2	2	2	5	5	1	5	3	3	5	5	5	1	3	3	4	4
		This organization has great deal of personal meaning for me.	3	4	5	4	3	1	3	5	5	3	5	2	1	2	1	2	5	4	1	5	4	4	5	5	5	1	3	1	5	1
	Continuance commitment**	Too much of my life would be disrupted if I decided I want to leave my organization right now.	1	3	5	3	3	1	2	1	3	2	5	1	1	2	2	2	3	2	1	5	5	2	5	4	1	1	2	1	3	1
		Right now staying with my organization is a matter of necessity as much as desire.	3	3	3	4	4	1	3	5	2	4	5	2	1	3	2	2	5	2	3	3	5	2	1	5	3	1	2	1	3	3
		I believe that I have too few options to consider leaving this organization.	4	2	3	2	4	4	2	3	2	3	2	1	1	1	2	4	5	2	1	1	5	2	1	2	3	1	4	3	3	3
		It would be very hard for me to leave my organization right now even if I wanted to.	4	2	5	3	4	3	3	3	2	3	3	1	1	1	3	2	5	3	1	1	5	2	1	1	1	1	4	3	3	3

** The questions from TechnoWES and ones in those groups shown above with an asterisk "*" (Literacy facilitation, Technical support provision, Involvement facilitation, Job satisfaction, Organizational commitment) are expressed with a positive connotation.*
*** Questions regarding the turnover intention have not been analyzed.*

9 Appendix B (qualitative)

In this section:

- Participant information sheet.
- Consent form.
- Questions list.
- Words frequencies in digits.

9.1 Participant information sheet

UNIVERSITÀ TELEMATICA
INTERNAZIONALE UNINETTUNO

PARTICIPANT INFORMATION SHEET

Title of research project:

Employee engagement and technology: a case study analysis of best practice in Italian SMEs.

Name and position of researcher:

Francesco Campione, Doctor of Business Administration (DBA) student, International Telematic University Uninettuno.

Description:

As each of us can testify, we live in an increasingly digital world and the digitalization of working life is expected to be a driver of business growth in the near future.

Technology brings with it both positive aspects (definable and measurable through the 'techno-work engagement' scale) and negative effects (definable and measurable through the 'tech-nostress' scale).

Unfortunately, over the years the feeling of disconnection between workers and their companies has also increased.

The research I am carrying out is based on the study of the relationship of employee satisfaction with technology and aims to explore the use of technology as an enabler of employee engagement. More specifically, how technology can be used to enhance employee engagement through developing a best practice model/framework in Italian SMEs.

Interview management:

After the anonymous survey taken in the past months, the interviews will be used to go in depth to the engagement condition in Italy.

The interview will be taken through a videoconferencing platform, it is supposed to be around 30 minutes long, and the requested rounds of interviews is one.

Participation is on voluntary basis, and the participant has, at any time, the right to withdraw without giving reason. Moreover, the participant has the right to decline to answer a question or set of questions.

After the interview, the video recording will be used to create the transcript of the interview. The latter will be obtained through a third-party company – a cloud platform specialized in audio transcription or from Microsoft Teams directly. The transcripts will be analyzed using a specialized software for qualitative analysis (CAQDAS, Computer Assisted Qualitative Data Analysis) on the researcher's computer.

Furthermore, the original video recording will be used by the researcher only for creating the transcript that will be destroyed as soon as the transcript will be available, and in any case not later than the publishing of the thesis.

Only anonymized data will be kept for further analysis.

No personal or sensitive data will be asked or stored.

Part of the transcriptions could be quoted anonymously, and under no circumstances the real name of the participant will be used.

For any further information related to the research or the interview, contact me at f.campione@students.uninettunouniversity.net.

Thank you.

Francesco Campione

9.2 Consent form

UNIVERSITÀ TELEMATICA INTERNAZIONALE UNINETTUNO

CONSENT FORM

Title of research project:

Employee engagement and technology: a case study analysis of best practice in Italian SMEs.

Name and position of researcher:

Francesco Campione, Doctor of Business Administration (DBA) student, International Telematic University Uninettuno.

	Please write your initials in the box
1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving reason.	
3. I agree to take part in the study.	
	Please write Yes/No in the box
4. I agree to the interview being audio and video recorded.	
5. I agree to the use of anonymized quotes in publications.	

Name of participant:

Date:

Signature:

Francesco Campione (researcher)

Date:

Signature:

9.3 Questions list

Category		Italian		English
Engagement	1	Con quali parole definiresti il tuo stato d'animo quando sei a lavoro?	1	What words would you use to describe your mood when you are at work?
	2	Questo è cambiato negli ultimi 6 mesi?	2	Is that changed in the last 6 months?
	3	Se sì, perché?	3	If so, why?
	4	Con quali parole definiresti la tua azienda?	4	What words would you use to define your company?
	5	Con quali parole definiresti il tuo lavoro?	5	What words would you use to define your job?
	6	Come valuteresti il rapporto con il tuo capo?	6	How would you evaluate your relationship with your direct supervisor?
	7	Discuti di come ti senti quando sei a lavoro con i tuoi colleghi?	7	Do you discuss of how you feel when you're at work, with your colleagues?
	8	Discuti di come ti senti quando sei a lavoro con il tuo capo?	8	Do you discuss of how you feel when you're at work, with your direct supervisor?
	9	Ti vengono spiegati gli obiettivi da raggiungere ed il perché?	9	Does someone explain company's objectives to be achieved and why to you?
	10	Cosa ti crea stress a lavoro?	10	What does cause you stress at work?
	11	Quale pensi sia il maggiore scoglio al coinvolgimento dei dipendenti?	11	What do you think is the biggest obstacle to employee engagement?
Technology	12	In generale (nella vita di tutti i giorni), come definiresti il tuo rapporto con la tecnologia?	12	In general (in everyday life), how would you rate your relationship with technology?
	13	E che impatto ha la tecnologia sulla tua vita personale (di tutti i giorni)?	13	And what impact does technology have on your personal life?
	14	A lavoro, come definiresti il tuo rapporto con la tecnologia?	14	At work, how would you rate your relationship with technology?
	15	E che impatto ha sulla tua vita professionale?	15	And what impact does technology have on your professional life?
	16	3 parole che descrivano positivamente l'impatto che la tecnologia ha sulla tua vita	16	Three words that positively describe the impact technology has on your life
	17	3 parole che descrivano negativamente l'impatto che la tecnologia ha sulla tua vita	17	Three words that negatively describe the impact technology has on your life
	18	Le tecnologie che usi a lavoro maggiormente le hai decise tu?	18	Have you selected the technologies you use at work most?
	19	Se no, chi prende queste decisioni e con quali modalità ti è stato richiesto di usarle?	19	If not, who does make these decisions and how have you been asked to use them?
	20	Ti è mai stato chiesto in azienda il tuo parere in merito ad una tecnologia usata (o che sarebbe stata introdotta)?	20	At work, have you ever been asked for your opinion about one technology used in your company (or that would be introduced)?
	21	Se sì, in che termini?	21	If so, in what terms?
Platform	22	La tua azienda ti propone delle attività di team building (fare gruppo) o di well-being (benessere)?	22	Does your company offer you team building or well-being activities?
	23	Le fai?	23	Do you partecipate in them?
	24	Perché?	24	Why?
	25	Nella tua vita privata, fai meditazione?	25	In your private life, do you make meditation?
	26	La faresti se la tua azienda te lo proponesse?	26	Would you practice meditation if your company offered it to you?
	27	Useresti una App creata per riunire le proposte della tua azienda per la vita lavorativa (come creare comunità a lavoro; condividere informazioni con azienda e colleghi; ricevere e dare feedback; ricreare la "macchinetta del caffè" in modo virtuale per incontrare i colleghi; per imparare nuove abilità e nozioni; ma anche per usufruire dei programmi di well-being)?	27	Would you use an App created to bring together your company's proposals for working life (for example: how to create communities at work; share information with company and colleagues; receive and give feedback; recreate the "coffee machine" in a virtual way to meet colleagues; to learn new skills and notions; but also to take advantage of well-being programs)?
	28	Perché?	28	Why?
Italy Focus	29	Come credi che le aziende italiane siano in termini di "coinvolgimento dei dipendenti" a livello globale?	29	How do you think Italian companies are performing in terms of "employee engagement" globally?
	30	Se ti dicessi che l'Italia è la peggiore (a livello mondiale) sia in termini di "dipendenti coinvolti" (negli ultimi due anni, 4% e 5%) che "dipendenti actively disengaged" (30%, *data aggregation* 2014-2016, 155 nazioni), cosa mi diresti?	30	If I told you that Italy is the worst (worldwide) both in terms of "employees involved" (in the last two years, 4% and 5%) and "actively disengaged employees" (30%, data aggregation 2014-2016, 155 countries), what would you tell me?
	31	Perché credi le aziende in Italia facciano così male in termini di "coinvolgimento dei dipendenti"?	31	Why do you think companies in Italy perform so badly in terms of "employee engagement"?
Final Thoughts	32	Quali sono le tue 3 principali preoccupazioni a lavoro in questo momento?	32	What are your top three concerns at work right now?
	33	Se potessi suggerire 1 raccomandazione alla tua azienda, quale sarebbe?	33	If you could suggest one recommendation to your company, what would it be?
	34	Hai qualche commento conclusivo?	34	Do you have any concluding comments?

9.4 Words frequencies in digits

Engagement		
State of mind when at work		
Positive feeling	2	
		Feeling actionable
		Feeling motivated
Negative feeling	4	
		Agitation
		Anxiety
		Boredom
		Dissatisfaction
		Frustration
		Resignation
		Tension
		Tiredness
		Uselessness
Both	3	
Change during last 6 months		
		Reasons
Improved	3	
		Greater job awareness
		New job
Worsen	4	Worsening of the working situation
Same	2	N/A
Company description		
Positive	7	
		Enjoyable
		Inclusive
		International
		Open to change
		Precise
		Stimulating
Neutral	2	
		Complex
		Normal
Negative	11	
		Contradictory
		Demeaning
		Disorganized
		Not present
		Obsolete
		Oppressive
		Profiteering

		The result matters, not the how
		Useless
Job description		
Positive	8	
		Always new
		Fulfilling
		Interesting
		Stimulating
Neutral	2	
		Concrete
		Organizational
Negative	8	
		Boring
		Chaotic
		Not very stimulating
		Stressful
Supervisor description		
Positive	7	
Negative	2	
		Fake
		Nonexistent
Colleagues description		
Positive	3	Good/excellent
Neutral	2	Improvable
Negative	1	Nonexistent
Goals communicated		
Yes	2	
No	4	
Partially	3	
Stress causes at work		
	5	Absence/Poor Programming-Planning
	4	Absence/Poor Communication
	3	Incompetence (of management)
	1	Be appointed to a role/position I can't handle
	1	Lack of consideration for the employee
	1	Lack of professional growth
	1	Poor quality of work
	1	The (internal) competition
Hurdle to engagement		

	3	Absence/Poor Communication (No Information Sharing)
	3	Absence/Poor Dialogue
	3	Lack of consideration for the employee
	1	Competition among colleagues
	1	Lack of organization
Technology		
Technology and personal life		
Relationship with technology		
Good	7	
Neutral	1	
Bad	1	
Impact on personal life		
High	8	
"I avoid it when I can" (answered by one respondent)	*1*	
Technology and professional life		
Relationship with technology		
Great	2	
Could be improved	2	
Essential	3	
Impact on professional life		
High	8	
Moderate	1	
Employees' words to describe technology		
3 positive words		
Solves	5	
Helps keeping relationships	4	
Informs	3	
Keeps company	3	
Forms/trains	2	
Enabling	1	
Essential	1	
3 negative words		
Steals time	4	
Addiction	3	
Health problems from overuse	2	
Intrusiveness	2	
Weakens communication (between people)	2	
Difficulty of use	1	

Environmental impact	1
Reduces human capabilities	1

Have you selected the technologies you use at work most?

Yes	0
Partially	2
No	7

Who does make technology selection and training

respondents	
7	Company or dedicated team
2	The customer we work for
4	Word of mouth and/or self-taught (sometimes, superficial training)
1	Official courses and training
1	Technical support team

At work, have you ever been asked for your opinion about one technology used in your company (or that would be introduced)?

Yes	2
Partially	1
No	3

Platform

Does your company offer you team building or well-being activities?

Yes	1
"Only in theory"	1
No	7

Do you participate in them?

Yes	1
"Yes, if offered"	6
No	1

In your private life, do you make meditation?

Yes	9
Sometimes	3
No	6

Would you practice meditation if your company offered it to you?

Yes	7
Maybe	1
No	1

Would you use an App created to bring together your company's proposals for working life?

Yes	7	
No	1	
Reasons for using the APP		
	4	Help to know each other better
	2	Same information for everyone
	2	Usefulness
	1	Sense of involvement
Italy Focus		
How do you think Italian companies are in terms of "employee engagement" globally?		
Well	0	
Neutral	0	
Bad	9	
Why Italy so bad		
We no longer have the culture of the employee, of the human resource	5	
Inability of management	2	
Companies do not know how to communicate	1	
Companies do not know how to plan	1	
Companies do not think that there are alternative ways	1	
No room is left for young people	1	
Old mentality	1	
Final Thoughts		
Main concerns		
Not achieving goals	3	
Psychological	3	
Health	2	
Reduction of turnover	2	
being involved in a job I do not like	1	
I do not see a future	1	
increase in workload	1	
Lack of personal time	1	
Lack of turnover (people renewal)	1	
Legal	1	
The salary that is not enough (for inflation)	1	
to be fired	1	
Transfer to another company	1	
Advice to employer		
Improve communication and dialogue (between company and employees)	4	

Give credit (to employees)	2
Improve company's organization	2
Take care of the employee	2
Increase automation	1
Make room for young people	1

Final comment

	respondents
"I want to quit"	3
"I hope interviews like this can lead to greater awareness among workers and employers"	1
"I hope the organization and planning will improve"	1
"[companies should] look elsewhere to improve their situation" (i.e., get new ides to improve engagement)	1

10Appendix C (best practice model – diagrams)

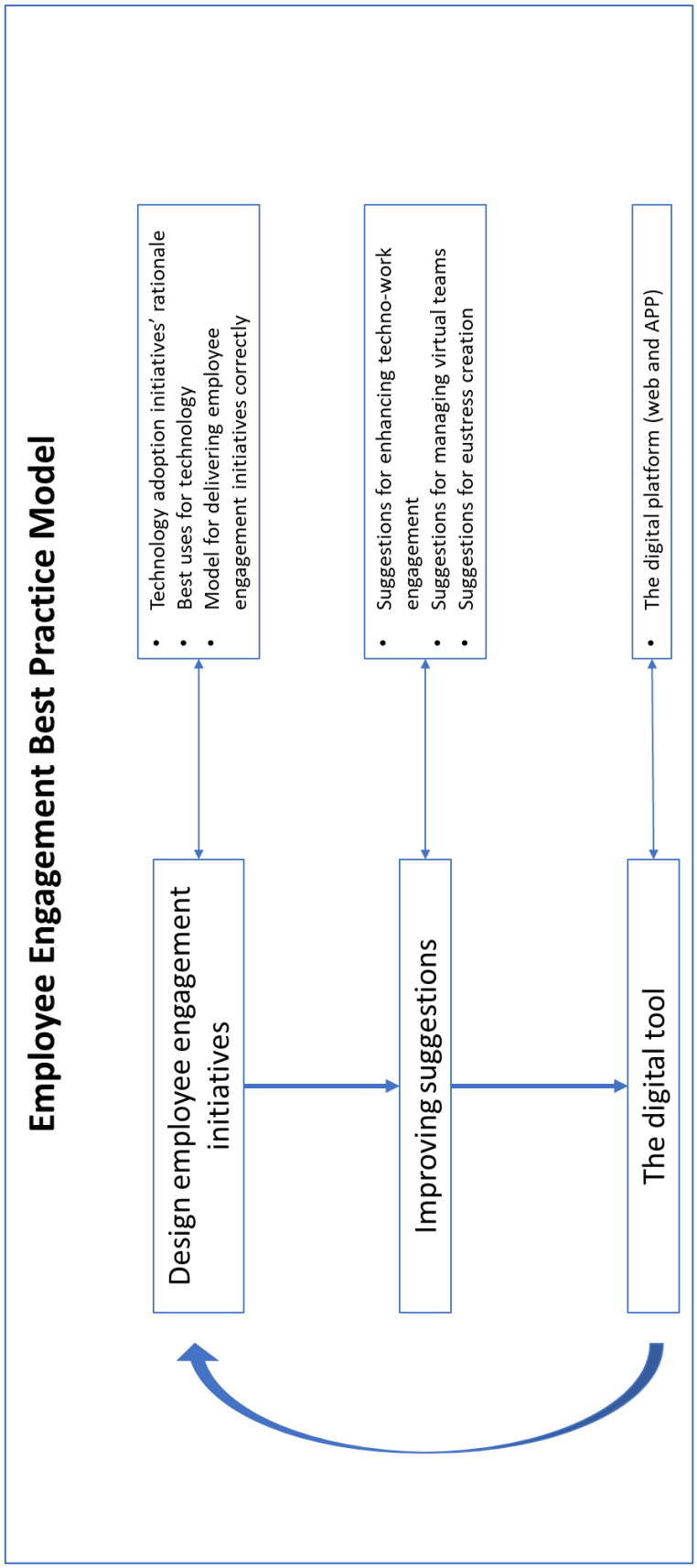

Figure 32 – Employee Engagement Best Practice Model

10.1 Design employee engagement initiatives

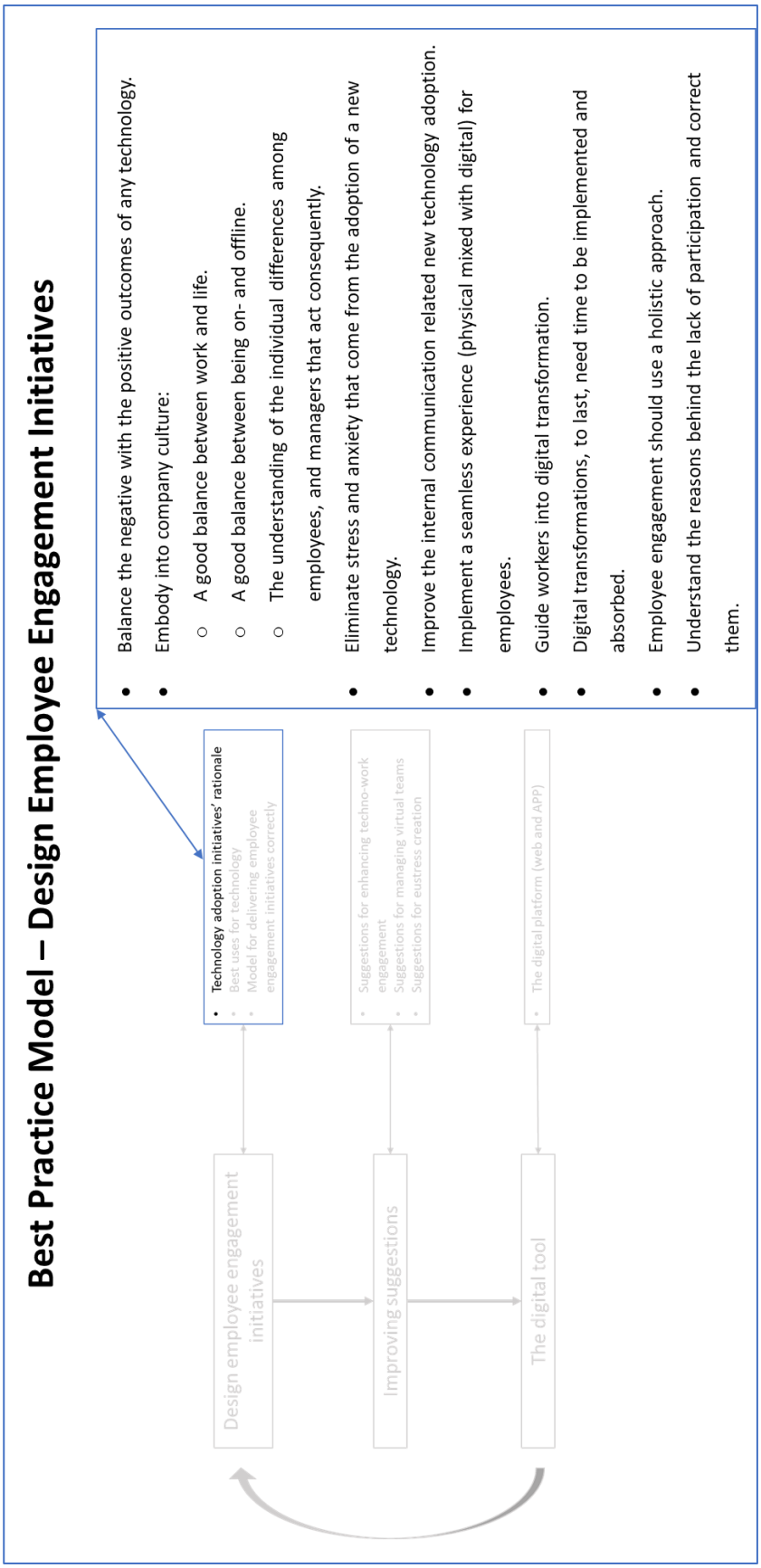

Figure 33 – Design Employee Engagement Initiatives – Technology adoption initiatives' rationale

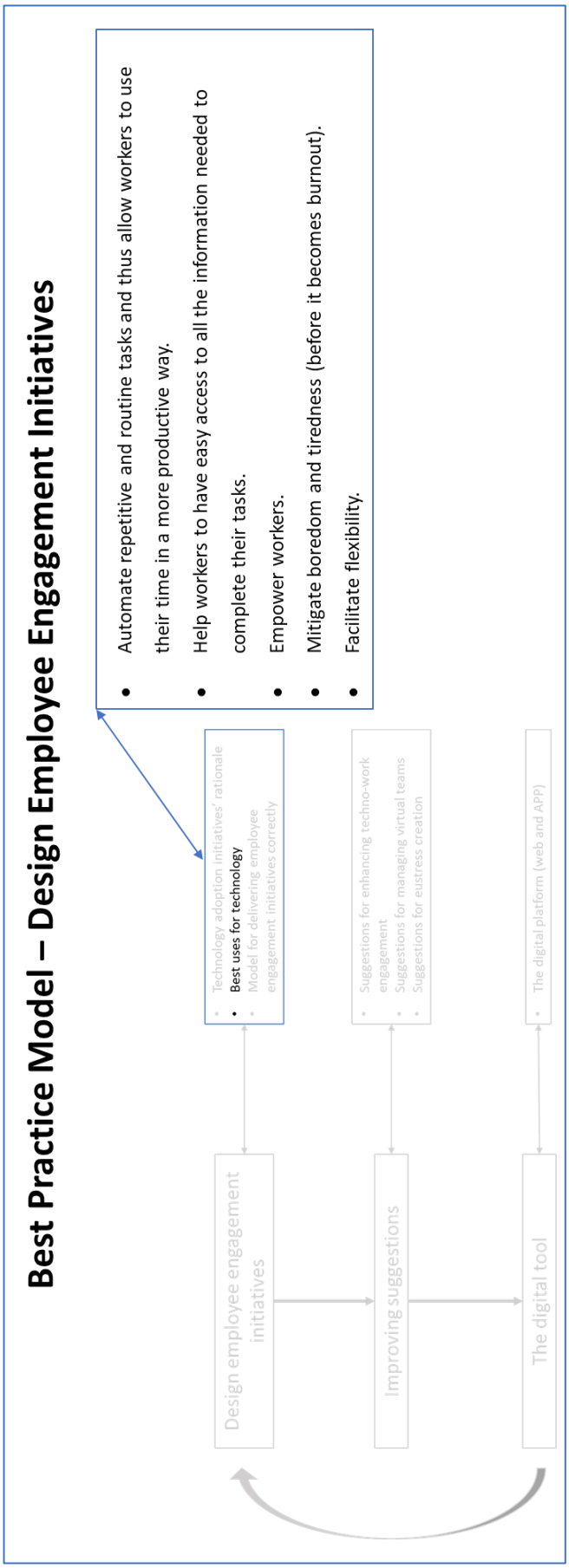

Figure 34 – Design Employee Engagement Initiatives – Best uses for technology

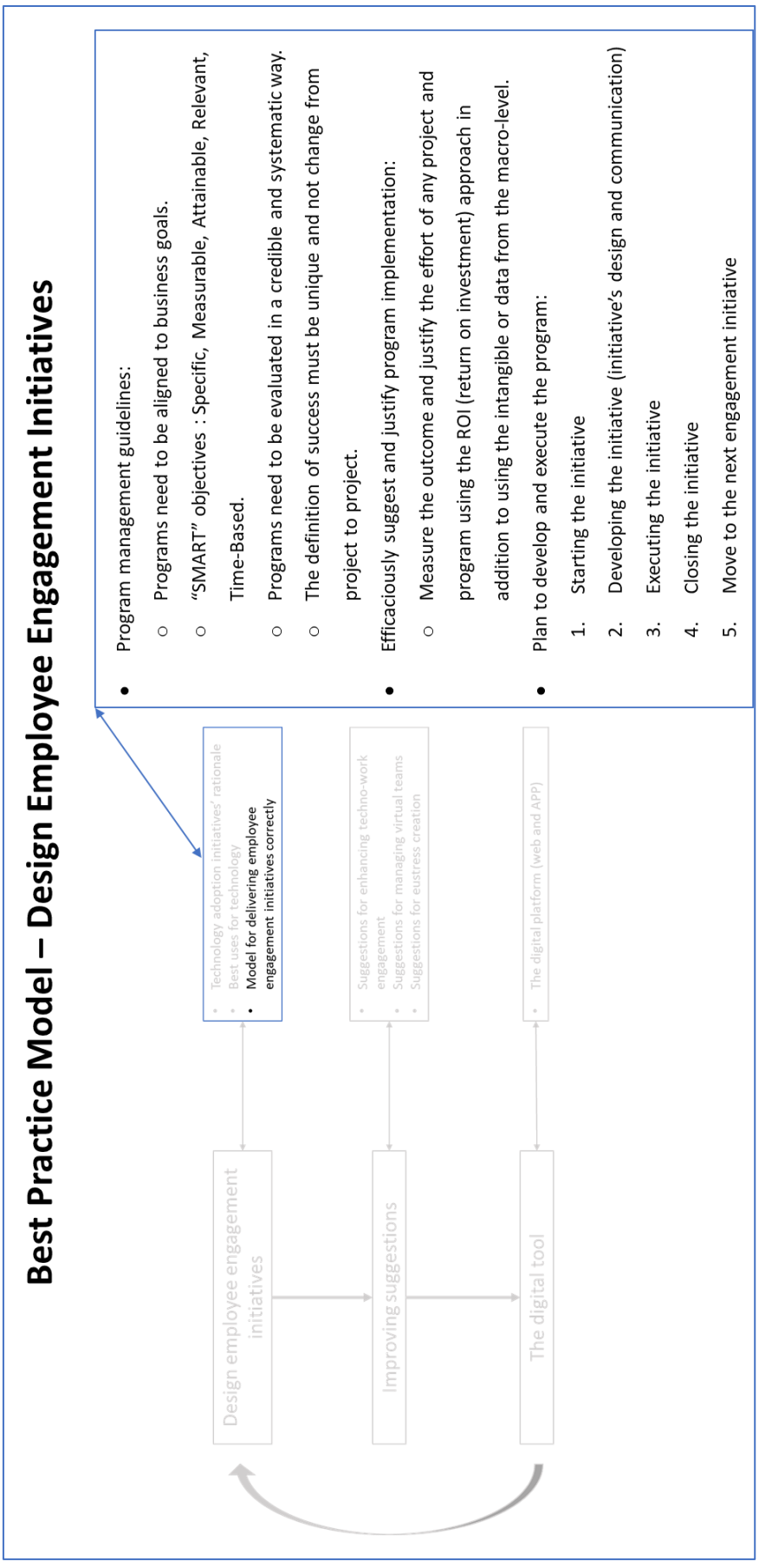

Figure 35 – Design Employee Engagement Initiatives – Model for delivering engagement initiatives correctly

10.2 Improving suggestions

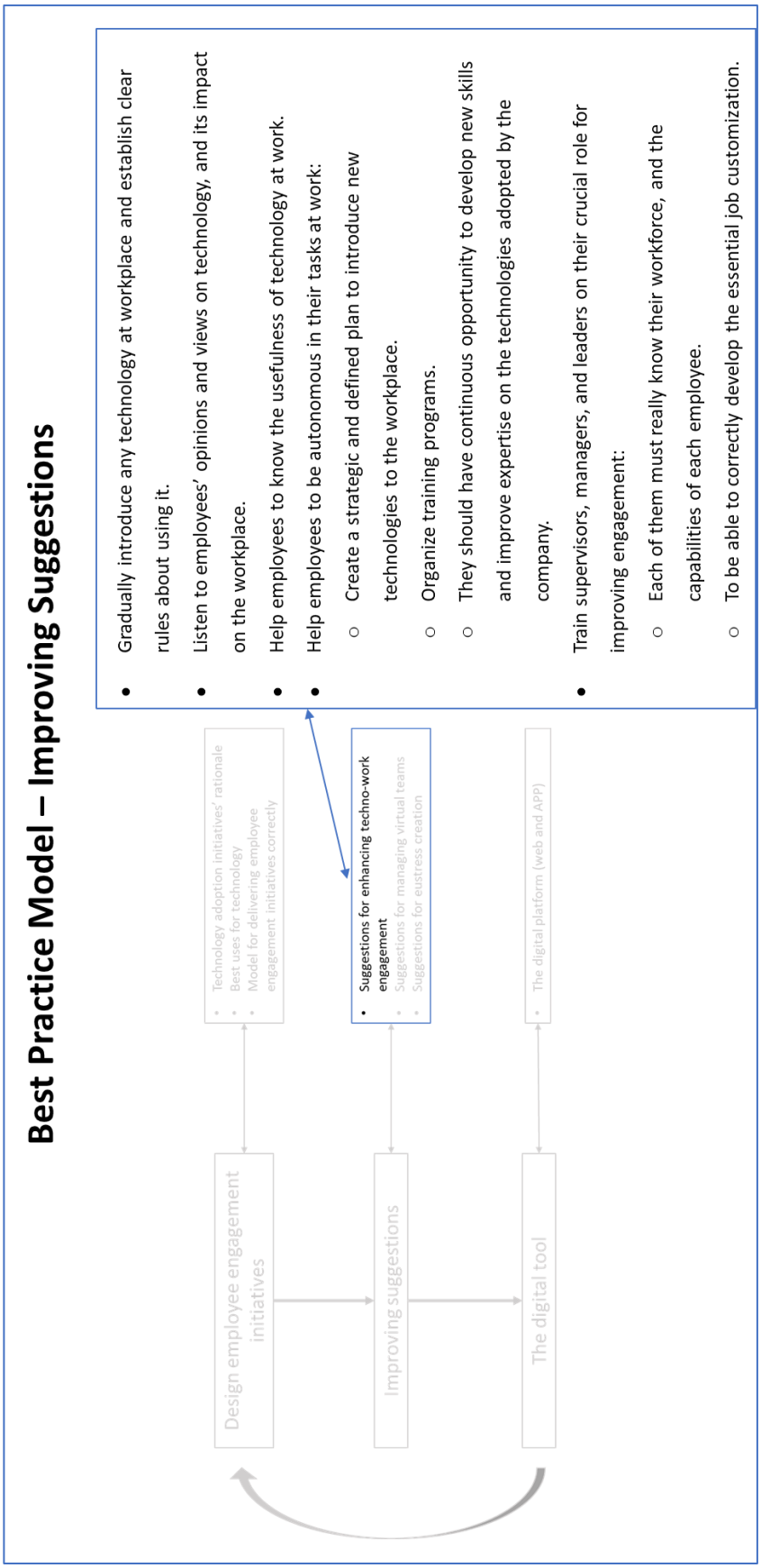

Figure 36 – Improving Suggestions – Suggestions for enhancing techno-work engagement

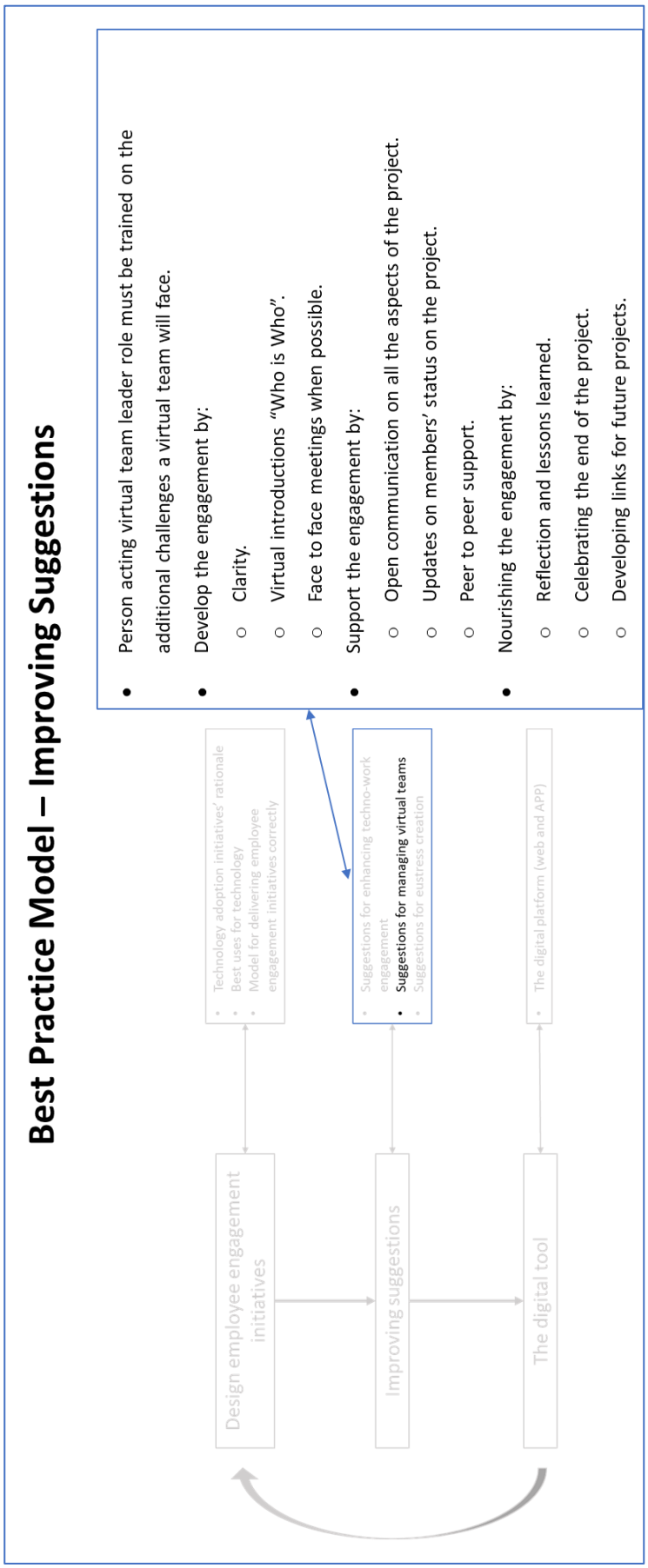

Figure 37 – Improving Suggestions – Suggestions for managing virtual teams

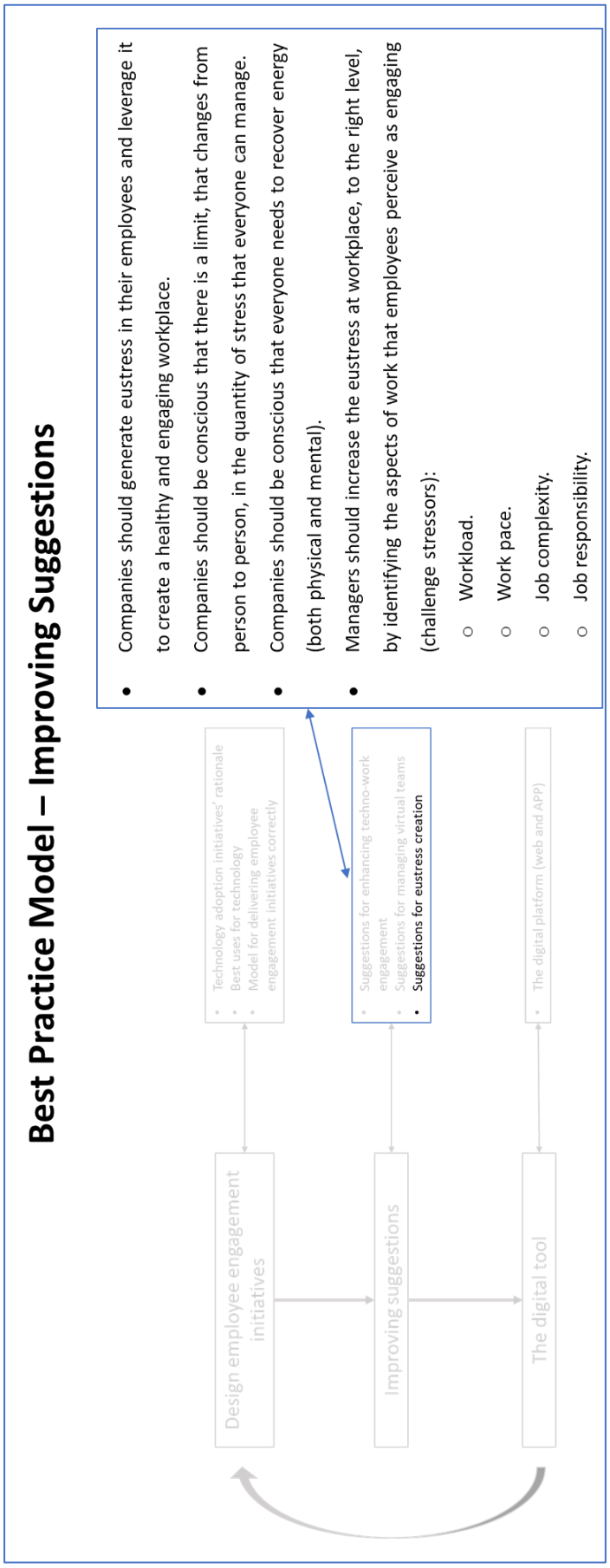

Figure 38 – Improving Suggestions – Suggestions for eustress creation

10.3 The digital tool

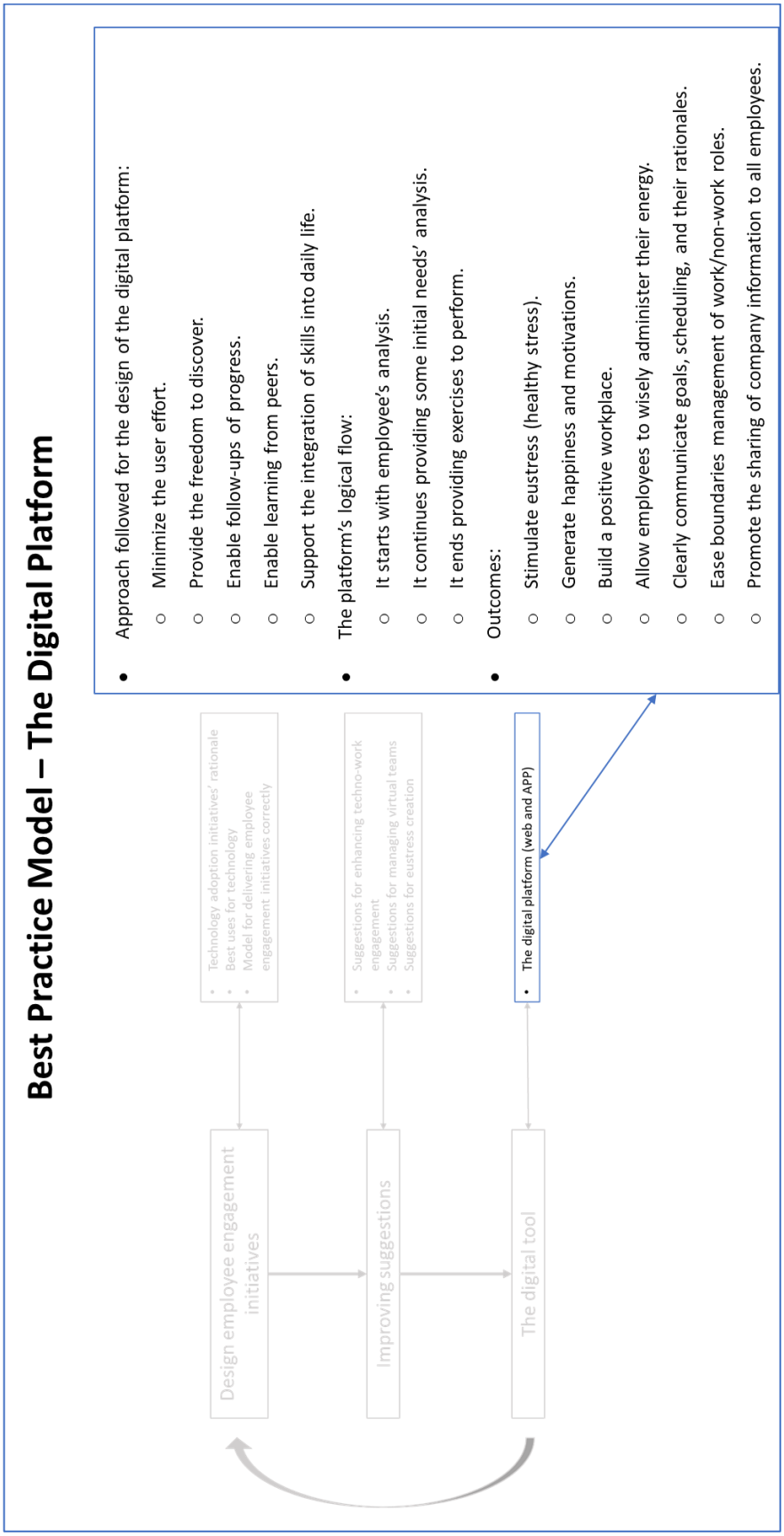

Figure 39 – The digital platform – Approach, logical flow, and outcomes

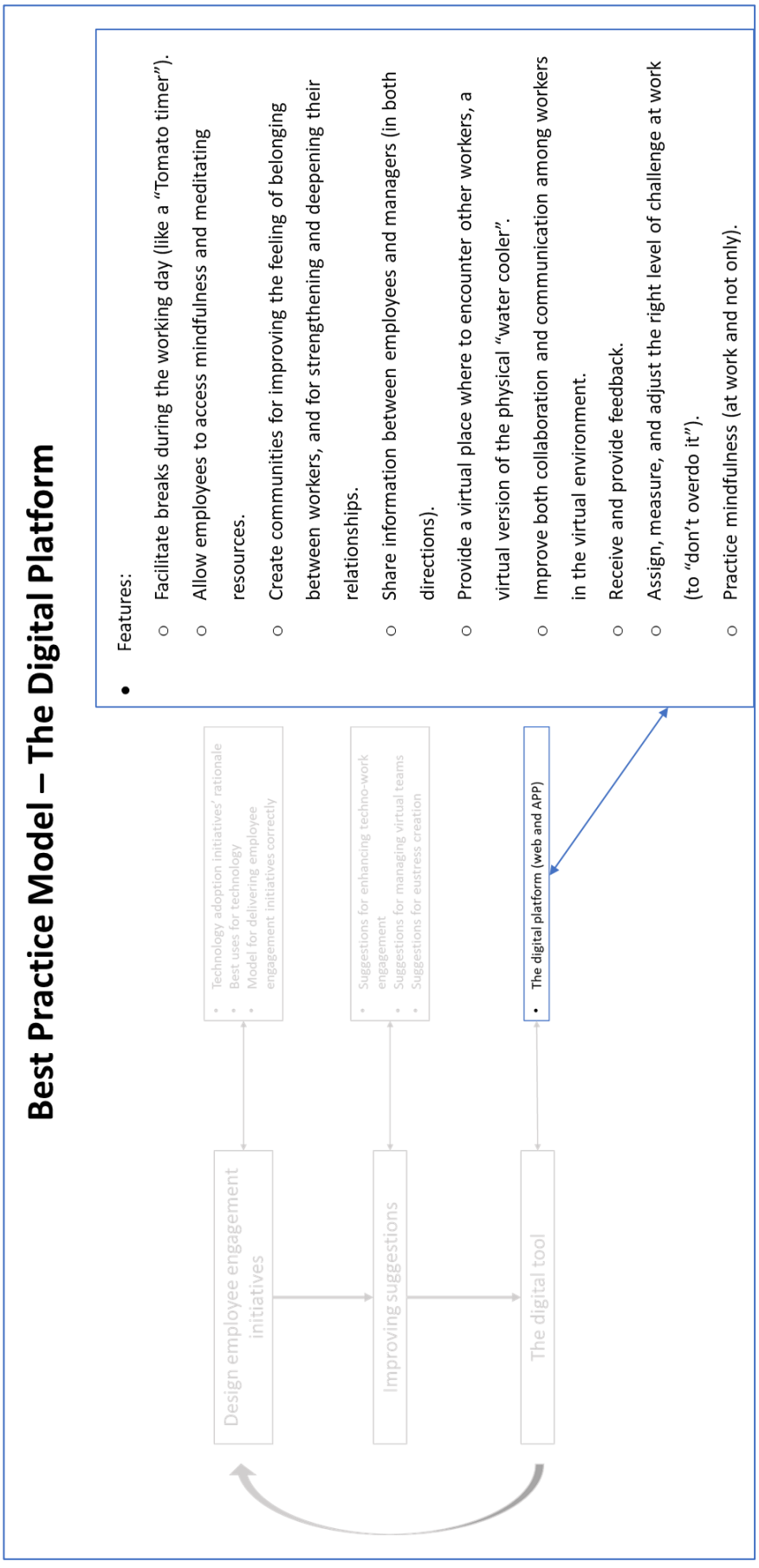

Figure 40 – The digital platform – Features

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