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Ruben Pereira
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Preface

Digital transformation marks a rethinking of how an organization uses technology, people, and processes in pursuit of new business models and new revenue streams, driven by changes in customer expectations around products and services. For many enterprises that build traditional goods, this means building digital products, such as mobile applications or an ecommerce platform. To do so, they must use and integrate digital technologies. The pace of change is increasing. Organizations need to adapt or risk to disappear under innovators entrance in the market. Managers are now pressed to make decisions.

With new digital technologies growing in an exponential rate in the last few decades, organizations are facing even more complex contexts. Organizations are then adopting agile methodologies and philosophies to hasten solutions and foster innovation. Plus, customer centricity reigns in times of more informed and demanding customers.

From strategy to operations, all organizations' layers are being challenged by digital transformation. Moreover, different industries and sectors are in different maturity levels and face different challenges.

This book provides a reference manual to assist professionals and academics on further insights regarding: the impact of digital technologies in business, how to implement digital technologies, solutions for specific digital technologies barriers, and much more.

This book contains ten chapters written by authors from several countries around the world. Different research methodologies are such as systematic literature review (SLR), case study, design science research, survey among others will inspire academics and practitioners upon opportunities and challenges in digital transformation.

Lisbon, Portugal
September 2024

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Contents

Remote Project Management: Challenges and Best Practices from the Project Manager's Viewpoint

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Abstract There are few studies about remote project management (RPM) or Remote Teams. This research aims to identify the main RPM challenges and best practices. We conducted 30 qualitative interviews and a survey with 69 respondents with Project Managers who had developed their activities in a remote mode 100% of the time after the beginning of the Covid-19 pandemic. At the end, it is possible to see a list of 14 challenges and 13 best practices they had to apply to maintain their projects in the track and support their teams in this such difficult moment.

Keywords Project management · Remote teams · Covid-19 · Practices

1 Introduction

The importance and professionalization of PM had already been noticed in the beginning of the 60's, but it became popular after the creation of Project Management Institute (PMI), founded in 1969. This organization is dedicated to study which are

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the practices proposed by the project managers that ultimately have success on their projects.

In 2020, because of the Covid-19 pandemic, the world dramatically changed and it became necessary to rethink the way we work, socialize and communicate. Working from home, first seen by companies as an opportunity to reduce projects costs [1], to search for the best qualified workers regardless of their location [2], or to be more agile [3], it has now become the "new normal" for all, and the only way to move on [4].

According to the Instituto Nacional de Estatística (INE) of Portugal whose published a survey [5], more than one million people, only in Portugal, started working from home in the second quarter of 2020. Out of these, 91.2% of workers said that the main reason was due to the Covid-19 Pandemic. This movement happened not only in Portugal but around the world. A survey published by Global Workplace Analytics', in May 2020, with about 3.000 responses, shows that 88% workers started to work from home on a regular basis during the pandemic. Only 31% of this studied group, were working at home on a regular basis before.

Currently, almost every organization have to rely on RT to execute their projects, and the difficult to manage these remote projects have increased [6]. The most traditional organizations had to change their mindset and start believing that they could be productive and efficient without having their employees in the same place as their leaders.

Remote Project Managers face a variety of challenges, especially those who have never managed a remote team [7]. On the other hand, traditional Project Managers who work at the same physical location as the team, dispose of structured and tested practices such as the Management Body of Knowledge [8].

Remote Project Managers need to take responsibility not only for the normal PM issues and activities (such as complex, usually uncertain, interdependent tasks) but also for the cultural differences among team members and geographic distance. Since they have to combine all of these items [9], one can assume that the management of remote projects is more complex than in the traditional way.

Despite the fact that most of the guidelines that support the traditional project managers should support the remote project managers, new practices and/or additional project manager skills could also be used and applied as a way to be more adherent in order to achieve project success in a remote situation.

Based on the previous paragraphs, this research aims to elicit the main RPM challenges as well as the practices to mitigate such challenges. The goal was then translated into two research questions listed below:

RQ1 Which are the main challenges of RPM?
RQ2 Which are the best practices that can be used to mitigate RPM challenges?

To implement this study, the methodology chosen was the Design Science Research Methodology (DSRM), coupled with a Systematic Literature Review (SLR) to elicit the investigate questions. Individual semi-structured interviews and a survey were conducted, to evaluate and tune the results. Given the among of literature about RPM, the SLR is a proper methodology to start the investigation.

Theoretical Background

To detail the related work, a Systematic Literature Review (SLR) was performed in order to provide an objective summary for the studied topic [10]. Working with SLR can improve literature reviews by bringing transparency and rigor for the research [11]. It is a way of interpreting all available research that is important for the objective of this study. The SLR was done between September and November of 2020. Performing a SLR involves three main phases: Planning; Conducting and Reporting the review [12] as shown in Table 1.

There are some studies talking about RT and PM, there were no many studies relating challenges and best practices, even the relation between them, implemented to improve the PM with remote teams. Therefore, this section details and analyze some of the most similar studies that cite some best practice and/or challenges about RPM. In Table 2, there is a demonstration if the articles are adherent or not with the objective of this study.

After reading with a lot of care and attention these articles, I noticed that instead all of them had a reference and a relation between at least one challenge and one best practice, some of them proposed a tool or a framework or webservice to solve the problem cited. It's not the focus of this research proposes a new tool to help on RPM. So, in the following paragraphs I describe the most adherent studies about the related theme.

Martin Pazderka and Thomas Grechenig [13] in their paper about Project Managed Matured Models describe in first place two kinds of matured model: the traditional one (CMMI) and a multi-dimension model (OPM3), which is an extended approach of the first one. They later explain the fact that organizations are working more and more with remote project teams and, in order to stablish the relationship between maturity models and remote teams, they had to explore and understand the challenges a remote team has to face. In section IV they analyze each challenge they had previously identified and suggest an associated best practice that, they believe, addressed the challenge. At the end of the paper, they suggest a set of best practices defining a strategy of how current maturity models can be extended to increase the success of remote projects and teams.

Marijana and Vlado [49], in a 2012 paper, defined that RPM would be the future of the organizations. In fact, nowadays, RPM is the reality of most organizations in the world. In Sect. 2 they describe some reasons that drove organizations to implement remote teams and emphasize the trend of communication. They also explain the

Table 1 Performing a SLR

Planning	Conducting	Reporting
Identify the need for review	Managing studies and final selection	Report the findings (writing and validate)
Objective of the review	Data extration and synthesis	
Data sources, search strategies and inclusion criteria's		

Table 2 SLR Reporting -articles studied and the adherence with the objective

References	RPM BP	RPM Ch	Publication	Rank	Year
[14]			Conference	–	1993
[15]			Journal	Q1	1994
[16]			Journal	Q1	2002
[17]		✓	Conference	A	2002
[18]			Conference	–	2003
[19]			Conference	–	2003
[2]	✓	✓	Conference	B	2004
[20]			Conference	–	2005
[21]		✓	Conference	–	2005
[22]			Conference	–	2005
[23]	✓	✓	Conference	–	2006
[9]	✓	✓	Conference	–	2006
[24]	✓	✓	Journal	Q2	2006
[25]			Journal	–	2006
[26]			Journal	–	2006
[27]			Conference	–	2007
[13]	✓	✓	Conference	–	2007
[28]			Journal	Q1	2007
[29]			Conference	–	2007
[30]			Journal	–	2007
[31]	✓	✓	Conference	–	2007
[32]		✓	Journal	Q3	2008
[33]			Journal	Q1	2008
[34]			Conference	–	2009
[35]			Journal	Q1	2009
[36]			Journal	Q1	2009
[37]	✓	✓	Conference	B	2010
[38]	✓	✓	Conference	–	2010
[39]			Conference	–	2010
[40]			Conference	–	2010
[41]			Conference	–	2010
[41]			Journal	Q3	2010
[42]			Conference	–	2010
[43]			Conference	–	2010
[3]	✓		Conference	–	2011
[44]			Journal	Q3	2011
[45]	✓	✓	Journal	–	2011

(continued)

Table 2 (continued)

References	RPM BP	RPM Ch	Publication	Rank	Year
[46]			Journal	Q1	2011
[47]			Journal	Q1	2011
[48]			Journal	Q1	2011
[49]	✓	✓	Conference	–	2012
[50]			Journal	Q3	2012
[51]			Journal	Q3	2012
[52]			Journal	Q3	2012
[7]		✓	Conference	–	2013
[53]			Journal	–	2013
[54]			Conference	–	2013
[55]			Conference	–	2013
[56]			Journal	–	2014
[57]			Conference	–	2014
[58]	✓		Conference	–	2016
[59]			Journal	Q1	2016
[60]			Journal	Q1	2016
[61]	✓	✓	Conference	–	2017
[62]			Journal	Q2	2017
[63]			Conference	–	2017
[64]			Journal	Q3	2018
[65]			Journal	Q1	2018
[66]			Journal	Q2	2018
[67]	✓	✓	Conference	–	2019
[68]			Journal	Q4	2019
[69]			Conference	–	2019
[70]			Journal	–	2019
[71]			Journal	Q3	2020
[72]			Journal	Q2	2020
[73]		✓	Journal	Q4	2020

necessity of IT knowledge and the reliance on technology tools to share data and information among the remote project team members. The most common software used to help the Project Managers maintain projects on track, such as Microsoft Project, Zoho Projects and Primavera, is also described. Further, they defend that is important to increase the use of virtual spaces like Internet, Extranet and Intranet to mitigate the communication issue with remote projects, as well as the full use of these software's to address the trends of development of computer support and virtualization of PM.

Valentine Casay [74] presented a case study placed in Ireland of a project with two remote teams working together (Malaysians and Irish) who had different levels of experience and maturity. The author spent 5 months inside the organization, on a full-time basis, working for the research which included document review, direct observation, interviews, focus groups and questionnaire completion. As a conclusion, the author describes the challenges and good practices for 6 areas that are important to a successful implementation of a globally distributed information system development strategy. These areas are: (1) organizational virtual team strategy; (2) risk management; (3) infrastructure; (4) implementation of a virtual process; (5) team structure and organization; (6) conflict management.

"Role of a Project Management in Virtual Teams' Success" [73] is one of the most recent articles published that are related to this study's objective. In this article the authors present some of the motivations for organizations to implement remote projects. For instance, it mentions cost reduction, 24/7 working possibilities, enhanced productivity, among others. They defend that the major issues that arise when working with remote projects and remote teams are due to two factors: lack of communication and lack of collaboration.

The authors explored the challenges of software PM in a remote working environment to focus on how these challenges affect relationships and performance of RT, how to build mutual trust within members and how higher leadership can influence a remote setting. They prepared a questionnaire based on literature review related to remote team management issues and analyzed the answers of 25 respondents based in 12 different organizations.

Christian, Charles and Adrian [52] worked together on the paper named "Virtual Project Management: Introduction". This paper, with an easy language, gives the reader a short introduction into RPM and the major differences between RPM and classical PM. In the first section, they present the motivations to ensure the need of RPM by organizations. In the sequence, they address the differences between classic PM and RPM. A comparative table is presented, showing six processes based on PMBok that have significant differences regarding tools, methods and skills between PM and RPM. The six processes are: control schedule; acquire project team; develop project team; distribute information; report performance.

1.1 RPM Challenges

As a result of this study, it is possible to present what are the main challenges described in literature. In the next table (Table 3). it is possible to see these challenges. After that, a description of each on is presented.

Table 3 SLR Challenges

ID	Challenges	References	Count
SLRC1	Information redundancy/share information	[7, 9, 13, 21, 24, 28, 30, 31, 45, 49, 50, 67, 73, 74]	16
SLRC2	Language barriers/ cultural differences	[2, 7, 9, 13, 21, 23, 37, 38, 67, 73, 74]	12
SLRC3	Slow development of trust and cohesion	[13, 23, 30–32, 37, 50, 67, 73]	10
SLRC4	Lack of face-to-face communications	[2, 9, 13, 21, 23, 50, 61, 74]	9
SLRC5	Reliance on technology tools	[2, 9, 30, 37, 61, 74]	8
SLRC6	Time and space differences	[9, 13, 23, 37, 73]	5
SLRC7	Leadership of the project manager and team collaboration	[7, 13, 67, 73, 74]	5

1.2 RPM Best Practices

In the same way we described the challenges cited by the authors, in this section, the goal is to detail the best practices discribed in the articles studied (Table 4).

1.3 Synthesis of Literature Review

Considering that working from home has become the normal for millions of workers around the world because of the Covid-19 pandemic, one may assume that a large number of workers and employers alike are, facing challenges in dealing with the sudden shift to remote working. The extent of these difficulties is likely to vary depending, among other factors, on the level of prior experience with RW. Project Managers who already had some experience with RW, even with only a few members of their team, had an easier adaptation than those who had their work exclusively performed on site.

Before the Covid-19 Pandemic, RW was seen and studied as a way to globally bring together the best employees from companies, in addition to reduce costs and other corporate advantages. But now, this working model has become essential to help the world overcome this moment. Therefore, this study aims to bring the perceptions, challenges and experiences that project managers faced during this transition phase.

Table 4 SLR Best Practices

ID	Challenges	References	Count
SLRBP1	Share knowledge, documents and templates	[7, 13, 24, 28, 30, 37, 45, 49, 50, 58, 73, 74]	13
SLRBP2	Build trust and collaboration within the remote team	[2, 7, 9, 13, 23, 30, 32, 37, 50, 73, 74]	11
SLRBP3	Developing communication protocols and partners	[7, 9, 13, 24, 31, 37, 58, 73, 74]	10
SLRBP4	Developing interpersonal relationships, cultural awareness	[7, 9, 13, 23, 30, 32, 37, 50, 73, 74]	10
SLRBP5	Supported by good technologies (infrastructure)	[7, 9, 13, 30, 37, 38, 49, 73, 74]	9
SLRBP6	Regular agenda of meetings and conference calls	[7, 13, 30, 73, 74]	5

It is possible to note that only a small number of the related studies make comments about the key points that will be explored in this study: challenges and best practices to RPM. Except for one article, all of them were published a year ago. In the perspective of the quality of these studies, most of them have no ranking. All these factors give me a great opportunity to focus this research on proposing a model where the main challenges from RPM could be mapped and the best practices that should be able to solve or mitigate them.

As can be seen in previous chapters, there is a gap to be filled regarding the relationship between challenges and best practices from RPM. It is a fact that there are differences between PM and RPM, but only a few studies approach these differences and what the remote project managers are doing to mitigate the challenges that affect their day-by-day work because of this virtualization.

The Covid-19 pandemic accelerated the adoption of RW. All fear of using this cooperation model was confronted with the urgency of keeping organizations operating. However, literature see the RW as a gradual way of transforming companies to obtain better results. Because of this moment, many companies were forced to implement RW, even going against their culture, beliefs and purpose.

For this research, I propose a new look of these remote challenges and which are the appropriate best practices to mitigate those challenges in the actual scenario, where working remotely is the reality of most project managers. This study is a strategic tool for project managers who want to improve their skills regarding fully RPM and a first step for further academic developments in this field.

2 Research Methodology

As the main methodology for this research, the Design Science Research (DSR) has been chosen [75]. Paraphrasing Peffers et al. [76], *"A methodology is a system of principles, practices and procedures applied to a specific branch of knowledge."* DSR focuses on the development and performance of artifacts as a way to improve their functional performance as well as improving current practices and research knowledge. The DSR has a process method with some phases that could, for the purpose of this study, be described. All of these phases are represented in Fig. 8.

To help the study and take as many opinions as possible, a survey was also used. In both cases, the author used the same interview protocol and asked open-ended questions which allows the participant to create options for responding. In this kind of interviews or survey, the participants can reveal real life experiences, social reality and perspectives about the central theme.

A research interview could be considered one of the most important qualitative data collection methods. Because of this, interviews have been widely used in research's and studies. Executing semi-structured interviews is not a trivial job. The interviewer needs a lot of skills, such as intensive listening and the capacity to take notes. To get a good result and not become a waste of time and opportunity, the process to conduct semi-structured interviews needs to be well prepared and planned. There are many decisions to take, like who is the target audience, how many interviews will be needed, how to conduct these interviews and how the results will be analyzed. The goal for qualitative interviews is to transform the interview opinions and emotions into a productive source of knowledge.

Specifically for this research, it was decided to interview, at least, thirty project managers, face-to-face. Regarding the number of interviews, qualitative grounded theory studies generally suggest that one should include between 20 and 30 interviews. Because of the Covid-19 restrictions, all of these interviews were conducted using tools such as Zoom, Teams, WhatsApp or Skype.

The interview process took place from March to June 2021. The selection of each participant was done through the interviewer's knowledge and, consequently, indications from the participants themselves. For each one, a communication (email, SMS or WhatsApp message) was sent informing the objective of the research and asking if the person was interested in participating on the research. For each respondent, at the beginning of the interview, they were asked if they authorized the recording of the interview and if the content could be used for academic purposes. There was no respondent who did not accept these questions. At the end of the interview process, we had a total of 17 h of recording and the average time for each one was about 34 min. A word document transcript was created for each interview, adding up to 177 pages of text.

The interview questions were designed to address all research topics, as can be seen in Table 5. However, the interviews were carried out in such a way that respondents could answer the questions in an exploratory way, with the interviewer performing a role of director and advisor. Allowing respondents to feel comfortable

and establishing a relationship of trust, so that their messages and perceptions were addressed clearly, was one of the constant concerns throughout the process.

But it was not a simple task to approach and get the consent of these 30 project managers (Table 6). Many people contacted said that they were unable to conduct interviews for many reasons. Some of them said it was because of schedule incompatibility, while others because they do not feel comfortable with interviews. As a result of these negative responses and to ensure the quality of the study by seeking a larger database in order to have a rich and interesting research result, it was suggested to these people, instead, to answer an on-line survey. In this way, it was possible to overcome the barrier of incompatible schedules and shyness of the people approached. A survey can be answered at the most convenient time for each person, as it can be adjusted to each person's schedule and tasks. With the acceptance of this suggestion, this on-line survey was also applied.

The on-line survey was made available on google-docs and the link was sent to the target audience. The questionnaire was applied from April to July 2021. It was guaranteed that the people who participated in the interviews did not respond to this. A question regarding the authorization of the answers for academic purposes was also placed on the survey. The questions were exactly the same as those used in the interviews and already presented. All of them were open-answer so that respondents could describe their experience and feelings about the topic studied. This way, we had a result of 69 project managers, the details of profile of participants you can see in the Appendix I.

Table 5 Interview and survey applied questions

ID	Question
Q1	Name
Q2	Age
Q3	Where do you leave? (City/Country)
Q4	How many years of experience do you have in project management?
Q5	Have you always worked in person (physically inside the company you work for)? Or, have you had any remote work experience before?
Q6	How long have you been performing your activities in a model 100% remotely?
Q7	How was, in general, the migration from face-to-face to remote work?
Q8	What are your opinions/feelings about remote project management?
Q9	What challenges did you face in this transition (fate-to-face to remote) with you team?
Q10	Could you name any differences in your day-to-day actions as a remote project manager?
Q11	Was there any best practice that you started to develop due to remote project management?
Q12	How do you imagine will be the working model in future (2022)?
Q13	What are the project management challenges that you believe we will face once this pandemic moment is over?

To ensure the plurality of the sample, participants with different backgrounds, gender, age, countries and characteristics were chosen to take part in this study as you can see in Appendix I session. At the end of the period, we had reached a group of 99 interviewees, either through face-to-face interviews or on-line survey.

The face-to-face interviews were much more exploratory. During the sessions, the interviewees were able to openly express their perceptions and opinions about the subject covered. Despite being very useful to pluralize the results of this study, the survey, in general, restrict the respondents' answers. As a complement to the interviews, the survey results were of great value.

3 Discussion

In this chapter, the author presents the finding results about challenges and best practices during the most impacting event which changed all the organizations modus operandi, the Covid-19 Pandemic. This pandemic forced the world locked-down and all of us were unable to go out and carry out our activities the way we were used to. One of the biggest changes was the adoption of remote work. An SLR was performed to elicit the main challenges and best practices for RPM in a condition without a world pandemic. Then, 99 Project Managers were interviewed or answered an on-line survey to help the author understand what really happened when they had to drastically change their way of working.

It is important to note that all these challenges and best practices were described by the participants, focusing on their own activities and practical experiences. All of them, in different levels, had the chance to freely express and describe their goals and their pains. In Appendix I, the author demonstrates the plurality of the sample, and present the profile of participants.

3.1 RPM Challenges

During all the interviews and survey period, the first objective was look for the real experience lived by the project managers who had to quickly migrate from a fully face-to-face model to a fully remote model. Table 7 lists all the challenges cited by the respondents and in Table 8, it is possible to see the map of interviewees answers.

CH1 More work hours to ensure productivity and projects flow:

It has been noticed that the number of on-line meetings has dramatically increased, knowing that this is the only possible way to talk to teams in a remote environment. Therefore, daily work hours also increased. Many times, the Project Managers do their tasks off the regular job hours. *"All workers tried to make up for the physical lack through meetings. any 15 minutes free, come someone who wants to talk to you. to handle the work to be done, I started to increase my daily workload. tasks that*

Table 6 Interviewees' profile

ID	Gender	Country	Age group	Role	PM Exp.
I01	M	BRA	30–39	Project manager specialist	09Y
I02	M	BRA	40–49	PMO–project manager specialist	25Y
I03	M	BRA	40–49	Consultant and prince2 trainer	20Y
I04	M	PRT	30–39	Scrum master	10Y
I05	M	BRA	40–49	Scrum master	16Y
I05	M	PRT	40–49	Senior product owner	15Y
I07	F	PRT	40–49	Senior partner business manager	10Y
I08	F	BRA	30–39	Project manager	03Y
I09					
	F	BRA	30–39	Product manager and Mkt lead	05Y
I10	F	PRT	40–49	Website creation specialist	12Y
I11	M	PRT	40–49	Project manager	16Y
I12	F	BRA	+ 49	BI and data management specialist	15Y
I13	M	BRA	40–49	BI and data management coordinator	20Y
I14	M	PRT	40–49	Project manager	14Y
I15	M	BRA	+ 49	Project manager	20Y
I16	F	BRA	30–39	Consultant manager	10Y
I17	M	BRA	+ 49	Head of IT operations services	19Y
I18	M	PRT	40–49	Project manager	12Y
I19	M	BRA	+ 49	VP of Mktg and communication	20Y
I20	M	PRT	40–49	Manager	11Y
I21	M	PRT	40–49	Project manager	18Y
I22	M	BRA	40–49	IT director	10Y
I23	F	BRA	+ 49	IT manager	18Y
I24	F	PRT	30–39	Digital marketing manager	05Y
I25	M	PRT	40–49	Senior sales account executive	22Y
I26	M	PRT	40–49	Project manager	20Y
I27	M	PRT	+ 49	Project manager	15Y
I28	M	PRT	40–49	Release & quality management	10Y
I29	F	BRA	40–49	Head of project portfolio office	20Y
I30	M	BRA	+ 49	Senior system analyst	30Y

only depend on me started to be done at night or on weekends [I16]." People are feeling exhausted with all these increased hours on a daily basis.

CH2 New work mode:

Because of the Covid-19 pandemic, many collaborators (Project Managers and Team Members) were forced into a reality never before experienced: how to make

Table 7 RPM Challenges experienced during Covid-19 pandemic

ID	Challenges	Count
CH1	More work hours to ensure productivity and projects flow	23
CH2	New work mode	21
CH3	Excess of information	18
CH4	Social isolation and loss of contact	17
CH5	Communication with the team and among team members	14
CH6	Absence of appropriate space work could lead to anxiety and depression for team members	13
CH7	Immediate communication dependency	12
CH8	Online tools and new technologies learning	11
CH9	Lack of team commitment	10
CH10	Technological, organizational and personal problems	10
CH11	Lack of collaboration and trust within team members (among them and with the organization—synergy)	09
CH12	Individual and group activity integration	07
CH13	Presence of conflict between personal and professional life	07
CH14	Processes and control activities	06

remote work so productive as office work was? Companies also had to adapt themselves. It was indeed a disruptive moment for many people. Most companies had second thoughts about remote work because it was necessary to ensure that all collaborators were productive and dedicated to work during office hours. *"Whenever I asked if we could work from home, the answer was no. They claimed that this work model was not part of the company's culture* [I12]*."* This became a very demanding moment for Project Managers because many documents were being asked for by CEO's in order to verify a team's productivity.

On the other hand, Project managers and team managers began realizing that, just because a collaborator is working from home, that does not mean that he or she is available 24 hours a day. It was necessary to find a mid-point. Even for Project Managers that already had previous experience with remote work, this was a challenging moment. There is a huge difference between working remotely a few days in the week—as an option—and working from home 100% of the time—out of necessity.

CH3 Excess of information:

Processes, procedures and policies had to be revised and created in a very short time. It was cited during the interviews that, in the beginning of the pandemic, everything was relevant information. The number of e-mails, documents and projects notes rose so much that brought a negative effect in the communication. *"It was necessary to understand what was relevant information and what was a way of being present, that the person was connected and doing he/she job. Absolutely everything turned into email, report or document* [S68]*."* With time, this big anxiety to generate

information started to reduce and eventually went back to the normal levels. The use of some collaborative tools also helped to keep the documentation of the Project updated without generating a great amount of re-work.

CH4 Social isolation and loss of contact:

Isolation brings uncertainties about who to look for in order to talk about specific issues, where to find specific support, how and when to approach colleagues, which leads to blockages and delays. It is very important to encourage teams to communicate whenever they feel overwhelmed, functioning as an early alert to spot the risk of burnout and to determine when tasks or team members must be relocated. *"Not everyone is made for remote work. Those with large families felt exhausted, those living alone showed depression. It is hard to handle these issues remotely* [S52]*."* The conflict between professional and personal life and the challenges related to boundaries management between work time and personal obligations are exacerbated, including the incapacity of switching off of work and to realize other tasks.

CH5 Communication with the team and among team members:

Communication has shifted from the synchronous model to the asynchronous model. It became more complex, being mandatory to have well-defined channels and processes. *"Working remotely brings some challenges. One of them is the paradigm shift regarding communication, that goes from synchronous to asynchronous* [I06]*."* One of the greatest challenges of remote team management is to keep all collaborators on the same page, making sure everyone is working towards the same business goal. Teams might feel a lack of clarity upon priorities and tasks needed to be done.

CH6 Absence of appropriate space work could lead to anxiety and depression for team members:

Providing an adapted space to the workers needs, which allows him to concentrate, seems obvious, but many times it is simply not possible to have the most adequate place. *"Not everyone has an ideal place to work from home. Often, someone of the team works at the dinner table, along their children taking classes online* [I28]*."* The absence of a place like this was cited as a factor that may have caused the increase of stress and anxiety among workers. Sometimes even affecting his or her individual performance and the projects productivity. Workers who had to face pandemic while having children at home also demanded more attention from Project managers. Getting to know people, how they are feeling, regardless of the job, has become a big challenge for Project managers. *"I started calling people just to see how they were doing. but this also caused anxiety. Why is the project manager calling at this time* [I02]*?"* Many times, on a physical location, one could tell by the workers face and posture how his or her level of stress was and if there was something wrong with him or her. In the remote work model, this type of evaluation turned out to be impossible.

CH7 Immediate communication dependency:

Teams need to know when and how they can contact colleagues and direct superiors to ask for support and to communicate their progress. *"We created a communication channel, via WhatsApp, even though it is not a regulated company tool, so that the team could communicate at any time with everyone involved in the project.*

The goal was to create a channel to get questions answered quickly [I19]*."* Project managers had to become more available to unlock any situation that might put at risk the good flow of projects.

CH8 Online tools and new technologies learning:

Workers who had to become familiar with new and different technological tools, on top of the shift to a new way of work organization, had to spend more time in this learning process, which explains, in part, why many people have to work more hours to adapt to this new reality. *"We had to accelerate personal and autonomous development to learn how to use new tools. We had to understand how this on-line world was, because we did not had time for that.... With this pandemic, we started looking for tools that could help us in PM, tools for collaborative meetings with rooms of discussion, finally, we had to adapt fast* [I29]*."* There is a growing number of available tools and software's to monitor and follow the workers activity.

CH9 Lack of team commitment:

It should be considered that not having a daily contact with teams could lead into situations which would demand more intervention from Project managers. *"I noticed that the fact that people already knew each other personally, made it easier to switch to the remote model. The team is already cohesive and trusts each other. The on-boarding of a new member to this team, in fully remote work mode, was a challenge to be overcome* [I26]*."* Handling conflicts in a remote way could be more difficult than on site. It was also noticed that when the team members are not familiar with each other or even if a team is composed of younger people, a bigger support from Project managers is necessary in order to keep them focused and integrated with the team.

CH10 Technological, organizational and personal problems:

Not all companies were prepared to migrate from 100% presential to 100% remote work in a very short time. In order to achieve this, it was necessary a great financial investment, team allocation and projects shut down to focus into this transition. The concern of information security was also highlighted by Project Managers. *"All migration was done on an emergency basis. The company had no practice with remote work and within two weeks we moved all operations to the remote model. Not everyone had adequate equipment to work from home, it was necessary to connect VPN and guarantee access to systems, for example. Anyway, it was a task force to manage to reduce the impacts* [S44]*."* New projects with the simple objective of providing VPN's, acquire notebooks, distribute equipment's and to put systems into clouds were quickly created to comply with the pandemic moment.

CH11 Lack of collaboration and trust within team members (among them and with the organization—Sinergy):

Teams where the majority of the members are working remotely rely strongly on electronic communication to foment collaboration, trust and transparency. With time, the level of professional distancing and isolation has increased. Team collaboration slowly decreases because, by communicating through electronic ways, people have a tendency to share less information with colleagues and, in some cases, find it more

difficult to interpret and comprehend the information which they receive. Teams need to trust each other. *"I had some conversations with my team to establish a relationship of trust between us, trying to make them realize that despite not being together in person, we have to continue to give the best work we can. Suggestions and opinions are valued and respected by everyone. We have to maintain the win-win relationship that we had in a presential work* [I09]*."* Employees must feel the responsibility to take decisions without being afraid of negative repercussions. They must also feel that making mistakes is part of the learning process and development. If they feel confident enough, they will not unnecessarily involve other people into problem solving or decision taking, what will result in a higher efficiency for the whole team.

CH12 Individual and group activity integration:

Remote work management, however, require decentralized control models. This means giving more autonomy to professionals. Decentralizing management is not a simple task for the majority of Project leaders who are used to on site work. It is mandatory to clarify and withdraw priorities to the unnecessary and unrealistic work under the actual circumstances. *"Within Project Management, we raise the reporting rigor. It was something that was eventually done more informally, a conversation. And we increased that a bit. What happens is: what we solved by looking at the colleague next to us and talking a little, we started to hold meetings of 15 minutes, 30 minutes, 1 hour, whatever* [I27]*."* Many times, this type of work agreements was done in an informal way, simply gathering 2 or 3 team members around the table or even during lunch time and coffee break. All this became virtual through another meeting and documentation.

CH13 Presence of conflict between personal and professional life:

One of the most significant challenges that remote workers have been facing during the pandemic is the conflict between professional and personal life because of the lack of borders between them. *"Work is now living inside the collaborators house* [I24]*."* The pandemic has destroyed the notion that a paid job and a personal life are two completely distinct domains, as well as the myth of the ideal worker that can and should always be available to perform job related functions. Workers who might have felt more this impact were the ones that had to conciliate the job with overlooking elderly or school aged kids at home. *"The project manager has to understand the working conditions of the team members, because this can influence productivity. We also had to be a bit of a psychologist* [S25]*."*

CH14 Processes and control activities:

The companies had to review processes and activities to work in remote model with all the employees. "We had to define new processes and acquire new tools to carry out our work. Informal agreements no longer exist. Now we put everything on Jira so everyone knows their work goals and what overall goals must be achieved [I04]." New rules to regulate the remote work in general, had to be defined. Project managers had to look at their methodologies, processes, activities to see what worked and what did not for RPM and adapt them for the new scenario.

3.2 RPM Best Practices

To mitigate all these challenges, even without a direct relationship between them, the Remote Project Managers worked hard. Some best practices might be considered new to some PM, others were just refined, like Table 9 presents. Table 10 shows the map of interviewees answers.

BP1 Daily Meeting:

Even those Project managers that only used to work with waterfall methodology had to bring some of the good practices of agile methodology to their PM. The most cited among all interviewed was the daily meeting of Project follow-up. *"Bringing daily follow-up meetings, despite being described as one of the activities of agile methodologies, was essential for managing projects remotely* [I22]*."* Some of them did these meetings with small teams while others did in a way that everybody was present in order to also help integration.

BP2 Taking care of inter-personal relations:

Ensure that the social relations among teams are kept, even when they are working from home, also brings benefits to trust development. *"Initially, I implemented a virtual cafe with only one requirement: open cameras. 30 minutes on Fridays where they talked about everything, except work. Now, I'm studying a way to implement games to decompress the team* [S28]*."* Informal video calls combined with virtual coffee breaks, lunches or team activities to share experiences amid the Covid-19 pandemic have proven to cause a positive effect on the well-being of people in a manner of belonging to the organization and mutual trust.

BP3 Self-managing time:

Many Project managers cited as a good practice the setting up of meetings with no one invited. "In the beginning of remote work, my day was completely full of meetings and I started to work, do my homework, after 7pm. It would not work, right? So, I started to close some hours during the day to have meetings with myself [S36]." The main goal was to establish designated hours so that the individual task could be done during regular office hours, thus reducing the great number of after work hours.

BP4 Planning of remote meeting:

It was cited as a big challenge, faced by all, the great number of meetings, since this is the only way to communicate with team members. But, on the other hand, these meetings had to be adjusted and well planned. *"In a remote meeting, you don't interrupt as often as you interrupt or were interrupted in person, so the issue of raising your hand, waiting to speak, listening to what the other said repeated that you understood for then, you formulate what you will talking so I think this was also a very big benefit for professionals, learning how to speak in a meeting. Learn how to give more objective presentations. Another huge benefit was the time, right the*

Table 8 Challenges map—interviewees answers

I/CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14
I01	✓	✓	✓	✓								✓		
I02		✓	✓	✓	✓	✓	✓	✓	✓				✓	
I03	✓	✓	✓	✓										
I04	✓				✓	✓					✓			✓
I05	✓		✓	✓		✓			✓	✓				
I06	✓	✓	✓	✓	✓		✓						✓	
I07		✓	✓				✓	✓				✓		
I08	✓	✓	✓	✓	✓				✓					
I09				✓	✓	✓				✓	✓			✓
I10	✓	✓		✓						✓			✓	
I11	✓		✓				✓	✓						✓
I12	✓	✓	✓	✓	✓		✓		✓	✓				
I13					✓	✓				✓				✓
I14	✓			✓		✓	✓	✓	✓	✓	✓	✓		
I15	✓	✓	✓			✓					✓			
I16	✓	✓			✓			✓		✓			✓	
I17	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓		
I18	✓		✓	✓		✓					✓			
I19		✓		✓	✓		✓	✓						
I20	✓	✓	✓		✓	✓		✓		✓	✓			
I21	✓	✓	✓											
I22	✓	✓	✓				✓	✓	✓				✓	✓

(continued)

Table 8 (continued)

I/CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8	CH9	CH10	CH11	CH12	CH13	CH14
I23		✓	✓	✓					✓					
I24	✓	✓					✓					✓		
I25	✓		✓	✓		✓	✓	✓			✓			
I26	✓	✓							✓	✓				
I27	✓				✓							✓		
I28	✓	✓				✓	✓		✓			✓		✓
I29		✓	✓					✓			✓		✓	
I30	✓	✓		✓	✓	✓				✓	✓		✓	

Table 9 Best practices applied into RPM during Covid-19 pandemic

ID	Best practices	Count
BP1	Daily Meeting	28
BP2	Taking care of inter-personal relations	21
BP3	Self-managing time	21
BP4	Planning of remote meeting	21
BP5	Encouraging the routine culture	17
BP6	Virtual rooms	15
BP7	New tools training	13
BP8	Hours flexibilization	13
BP9	Celebrate	12
BP10	Financial support	10
BP11	Create virtual communication channels focused on the well-being and health of team members and their families	09
BP12	New collaborative tools	07
BP13	Review of companies objectives	06

punctuality of the meetings nowadays, at least in our company, the meetings actually start and end on time so if you are 3 minutes late for the meeting, you arrive like this: Wow, sorry for the delay [I29]*!"* Defining the topics to be discussed, the duration of the meeting, ensuring the participation of the right people for the decision and, at last, documenting and distributing the outcome became a good practice in PM.

BP5 Encouraging the routine culture:

Working from home brought the challenge of being available at any time to the company. Project managers established rules with their teams, prioritizing on a regular basis the importance of keeping lunch hours as well as beginning and end of a Labour Day in order to diminish stress and anxiety. *"I try to keep my routine as close as possible to face-to-face work, and I encourage the team to do the same. I usually woke up early to go swimming, now I go to my balcony to do my physical activities. I always try to preserve my lunch-time and at the end of the day, I will take care of my plants. With that I try to keep myself sane* [I15]*."*

BP6 Virtual rooms:

With the objective of keeping the team working together, virtual rooms were created with focus on team collaboration. It worked as if everyone was physically inside a room. *"My team and I work with virtual room. We keep the audio -ON- all the time. When I want to talk with someone, I just need to say hello. No need to schedule a meeting. This gives a felling of presence, show that I am there for everyone, as if I were right next to people in person* [I05]*."* It was important to keep the audio on so that communication could flow better. This way, bonds were created, increasing

Table 10 Best practices map—interviewees answers

I/BP	BP1	BP2	BP3	BP4	BP5	BP6	BP7	BP8	BP9	BP10	BP11	BP12	BP13
I01	✓	✓						✓		✓		✓	
I02	✓	✓	✓	✓			✓		✓				
I03	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	
I04	✓	✓	✓	✓	✓								
I05	✓		✓			✓	✓	✓		✓	✓		✓
I05	✓	✓		✓	✓				✓		✓		
I07	✓	✓	✓	✓	✓	✓	✓	✓			✓		
I08	✓	✓	✓	✓				✓	✓				
I09	✓		✓	✓	✓	✓	✓	✓	✓	✓			
I10	✓	✓		✓		✓				✓		✓	✓
I11	✓	✓	✓	✓	✓		✓						
I12	✓	✓	✓			✓		✓	✓				
I13	✓		✓	✓	✓		✓			✓	✓	✓	
I14	✓	✓	✓										✓
I15	✓	✓		✓	✓	✓			✓				
I16	✓	✓	✓		✓	✓	✓	✓					
I17	✓	✓	✓	✓	✓				✓				
I18	✓			✓	✓		✓						✓
I19		✓	✓		✓	✓					✓	✓	
I20	✓	✓	✓	✓			✓	✓		✓			
I21	✓	✓		✓	✓	✓			✓				✓
I22	✓	✓	✓	✓			✓	✓					
I23	✓	✓		✓	✓	✓				✓	✓		
I24	✓		✓			✓				✓			
I25	✓	✓		✓	✓			✓			✓		
I26	✓	✓	✓				✓		✓			✓	
I27	✓		✓	✓	✓	✓	✓	✓		✓			✓
I28	✓	✓	✓	✓				✓	✓				
I29		✓		✓	✓	✓			✓	✓			
I30	✓		✓			✓					✓	✓	

productivity and team synergy. I don't have any doubt, it was shared with the whole team without having to send e-mail and scheduling formal meetings.

BP7 New tools training:

Give priority to some types of formation that are more relevant to the actual moment, such as leadership skills, time management and communication. Create support

groups in tolls as, for instance, WhatsApp, so people can help each other with technological issues. VPN accesses, network setup, access to systems in a virtual environment. *"For being a teacher too, I was already working with distance learning. My company is also small, so it was easy to give all the support needed, that everyone could quickly migrate to remote work* [I03]*."*

BP8 Hours flexibilization:

One of the benefits that home office brought was the flexibilization of hours. Project managers became open to the teams so that management could be done by deliver and productivity. *"We ended up gaining more flexibility in terms of work-hours. Developers, that naturally prefer to work overnight—this is in the developer's blood. And, that does not have the slightest problem for us. During the day, the developer is present at the appointments and everything else… But if he or she want to develop at night? Cool! I think it turned out to be a positive point* [I01]*."* The notion that a collaborator works from 09:00 until 18:00 on a controlled environment has changed. People who prefer to work at night or even those who had to adjust their workload due to the support to elderly or children became much more accepted. The important was the deliver, not the physical presence.

BP9 Celebrate:

It is common, by the end of a projects phase or even the whole Project, to celebrate. These meetings became virtual but did not end. Sending gifts to the collaborators house, having dinner or scheduling a celebration time outside the office hours was also done. *"We had to do something to be closer to the team. I started doing it when some project was finished, I promote an on-line happy hour. Once, I hired a musician to sing and play guitar for us. I sent for the team some snakes and a cup of toast. At the end of the year, we customized a Bluetooth headphone and sent to all employer home. It was a big success! They really enjoy these things, these gifts* [I17]*."*

BP10 Financial support:

Reimburse the real costs of equipment's used for home working. Allowing that equipment's that were used on site could be taken home or offering a sole amount for the acquisition of the necessary equipment to work from home were actions that companies adopted during the pandemic and all Project managers approved them as a way to ensure productivity and motivation of teams. *"The company offered a voucher from a large department store so that it was possible to purchase something the employee deemed necessary for their well-being* [I23]*."*

BP11 Create virtual communication channels focused on the well-being and health of team members and their families:

Provide formation sessions focused on behavioural and social aspects. These sessions helped virtual teams to acquire more knowledge and competences to minimize risks for the mental and physical health of collaborators. *"In my company, the human resources department, created a newsletter with contents provided by collaborators with tips on movies, series, games to play at home with kids and even food receipts*

[I07]." Another best practice cited was getting in touch by phone with team members during the weekend, for example, simply to check upon them, to see if everything was fine, was also a way to listen and to be closer to the collaborators.

BP12 New collaborative tools:

Bringing new collaborative tools to the company and diminish the formality in some documents was also a good practice adopted. One example cited was the use of the Teams tool to record the meeting and immediately transcribe it, so that the meeting was already documented. *"We implemented the full use of Microsoft Teams as a continuous work tool. …. If you make a meeting with this software, it already records and transcribes the entire meeting. We can create a documentation from this record in just a few minutes, just throw it Word. So, all this documentation is even easier to be produced* [I13]." It decreased the necessity of having templates with the company logo and various fields to be completed. The focus became the quality of the information.

BP13 Review of companies' objectives:

In the beginning of the Covid-19 pandemic, many companies took another look into their strategic planning. "We had to re-evaluate our strategic plan, to define which projects had to stop in that moment, and which on shroud be continued [I21]." Project managers, along with the company's main leaders, got together to define new objectives and decide which projects had to continue, had to stop or had to be created to ensure a great result for companies during this time.

3.3 Other Impressions

During the interviews, it was impossible not to think about what the future will be like. How will be the next year (2022) since we have almost the population vaccinated and an expectation of full control from Covid-19 pandemic. A total of 83% of the interviewed believe that the hybrid work model is the future for the organizations. The companies are adopting this model right now, in September 2021, to try to get back the employees to work presential. On the other hand, only 3% of the participants adapted so well to the remote work model that they do believe this is the best model for the future. And, least, 14% believe that on site work will return, mainly due to cultural characteristics of organizations.

Some interviewees pointed that the work model will be an employee decision. When one person candidate to a new job, the model of work (full remote, full presential or hybrid) will be an important item to accept or not a job [04,31]. For the next five years, the companies and the government, with laws to support the remote work, will organize and full implement the remote work.

4 Conclusion

As a conclusion for this research, it can be said that the RPM under normal circumstances is very different from the RPM amid a pandemic situation. While the first one was mainly seen by companies as way to reduce costs, work with collaborators anywhere in the World and also enhance the quality of life of employees, among other benefits, the second one generated some new best practices and challenges so that PM could deal with this new situation.

The RPM caused by the Covid-19 pandemic situation has brought some impacts, concerns and even an increase into organizations costs, at first, so that life could move forward.

The challenges most cited during the interviews can be presented as:

- Increase of work;
- Tendency to social isolation;
- Lack of motivation:
- Distraction with domestic matters.

To overcome these challenges, project managers presented several practices. Each one worked in their own way, giving them their personal touch. But it is possible to highlight:

- Overcoming physical absence through virtual interactions outside the scope of work;
- Help the team to obtain all the necessary infrastructure to carry out the work;
- Organize all project documentation so that communication didn't stop flowing;
- Take care of the team.

After the first impacts cause by the abrupt need to work remotely, we can realize that the remote work model for project managers or other professionals is here to stay. Positive sides related to the quality of life, security, being close to the family, do not wasting time going to and coming back from work, make most people willing to keep their jobs even in a remote way.

However, issues related to personal relations, such as being physically close to team members as well as lunch and coffee break gathering, were pointed out as critical success factors in order to keep developing the activities with quality. Work group, where synergy and active collaboration among all is mandatory, was also cited as uncomfortable in a remote situation, resulting in a loss of quality.

As a result of this research, the scenario of working twice a week in person at the company's premises and three times a week at home was considered the most appropriate one according to the opinion of the interviewed project managers. All the employees interviewed are eager to return to the life they had before, being able to come and go as they wish, so the hybrid model is now at the spotlight.

Project managers had to adapt their abilities' and used methodologies to find a new way of working. Bringing the agile methodology techniques into projects that followed the waterfall methodology was a recurrent subject on the interviews.

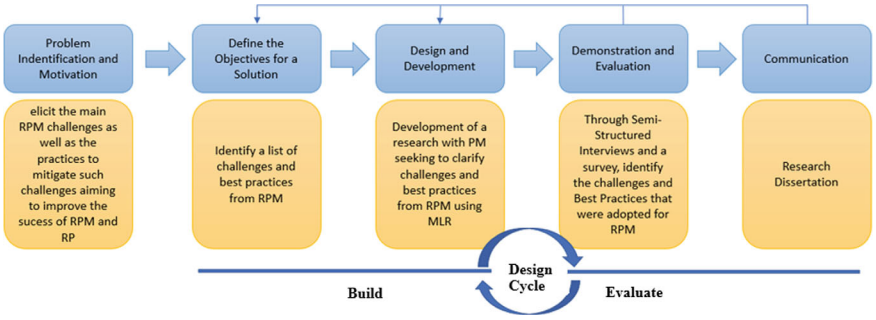

Fig. 1 Adapted phases of DSR

Not only agile, not only waterfall. It was needed to bond the best qualities of both methodologies in order to ensure good results to the projects.

This research also showed that remote project managers, besides taking care of intrinsic activities of each project, such as planning, delivery guarantee, quality of delivered material or aligning the stakeholder's expectations, for instance, had to act more and more as personal leaders. Seeking the well-being of each team member, making sure that everyone, apart from having the ideal conditions to work from home, were also psychologically well, was an extra challenge during this process.

During the interview process, with people from 2 different countries, the opportunity arose to see if there was any difference between the RPM in Portugal and the RPM in Brazil. No differences were found regarding challenges and good practices. Regardless of cultural differences, all project managers tried to overcome the challenges that were presented, seeking to work their projects and teams so that everything goes well. It was found that project management maintains its universal language where all project managers seek good planning, keep team activities up to date and ensure a good result at the end of the projects.

Overall, at the end of this study, it is possible to conclude that project managers see more benefits with the RPM, instead of being presential all the time. After everything is organized and RPM work is smoother, the benefits will stand out and organizations can bet on this new PM model.

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Appendix

Plurality of the sample: 11, 12, 13 and 14

Table 11 Gender × age

Type	Gender	Age group	Count	(%)	Gender	Age group	Count	(%)	Total
Interview									**30**
	Feminine				**Masculine**				**9 | 21**
		20–29	0	0,00		20–29	0	0,00	
		30–39	4	13,33		30–39	2	6,67	
		40–49	3	10,00		40–49	14	46,67	
		+ 49	2	6,67		+ 49	5	16,67	
Survey									**69**
	Feminine				**Masculine**				**23 | 46**
		20–29	2	2,90		20–29	2	2,90	
		30–39	3	4,35		30–39	12	17,39	
		40–49	13	18,84		40–49	17	24,64	
		+ 49	5	7,25		+ 49	15	20,29	

Table 12 Gender × PM experience

Gender	PM experience	Count	(%)	TOTAL
Feminine				**32**
	01–09 Years	13	40,63	
	10–19 Years	10	31,25	
	+ 20 Years	9	28,13	
Feminine				**67**
	01–09 Years	17	25,37	
	10–19 Years	28	41,79	
	+ 20 Years	22	32,84	

Table 13 Gender × RW experience

Gender	RW experience	Count	(%)	Total
Feminine				**32**
	Yes	6	18,75	
	No	26	81,25	
Feminine				**67**
	Yes	24	35,82	
	No	43	64,18	

Table 14 Profile of participants

ID	Gender	Country	Age group	PM Exp.	ID	Gender	Country	Age group	PM Exp.
S01	M	BRA	40–49	20 Y	**S36**	F	BRA	40–49	22 Y
S02	F	BRA	40–49	20 Y	**S37**	F	BRA	+ 49	15 Y
S03	M	PRT	30–39	6 Y	**S38**	M	BRA	+ 49	20 Y
S04	M	BRA	+ 49	17 Y	**S39**	M	BRA	+ 49	20 Y
S05	M	BRA	40–49	15 Y	**S40**	M	USA	+ 49	3 Y
S06	M	BRA	+ 49	25 Y	**S41**	F	BRA	+ 49	25 Y
S07	F	BRA	30–39	1 Y	**S42**	M	BRA	+ 49	25 Y
S08	M	PRT	40–49	10 Y	**S43**	F	BRA	30–39	7 Y
S09	M	BRA	+ 49	22 Y	**S44**	F	BRA	30–39	3 Y
S10	F	BRA	40–49	20 Y	**S45**	F	BRA	+ 49	20 Y
S11	M	BRA	+ 49	20 Y	**S46**	M	BRA	40–49	2 Y
S12	M	CAN	40–49	5 Y	**S47**	F	BRA	40–49	20 Y
S13	M	PRT	+ 49	20 Y	**S48**	F	PRT	40–49	5 Y
S14	F	BRA	40–49	8 Y	**S49**	M	BRA	40–49	7 Y
S15	M	PRT	40–49	10 Y	**S50**	M	BRA	30–39	7 Y
S16	M	BRA	40–49	18 Y	**S51**	F	BRA	40–49	20 Y
S17	M	BRA	+ 49	3 Y	**S52**	F	BRA	40–49	12 Y
S18	M	BRA	40–49	20 Y	**S53**	M	BRA	40–49	21 Y
S19	M	BRA	30–39	12 Y	**S54**	F	BRA	40–49	16 Y
S20	M	PRT	30–39	8 Y	**S55**	M	BRA	40–49	5 Y
S21	M	BRA	+ 49	30 Y	**S56**	M	BRA	30–39	6 Y
S22	M	BRA	30–39	6 Y	**S57**	M	BRA	40–49	22 Y
S23	F	BRA	40–49	1 Y	**S58**	M	PRT	20–29	2 Y
S24	F	BRA	+ 49	15 Y	**S59**	M	BRA	40–49	12 Y
S25	M	BRA	40–49	12 Y	**S60**	M	NLD	30–39	3 Y
S26	M	BRA	30–39	10 Y	**S61**	M	PRT	40–49	10 Y
S27	M	BRA	+ 49	15 Y	**S62**	F	BRA	40–49	4 Y
S28	M	BRA	40–49	1 Y	**S63**	M	BRA	40–49	5 Y
S29	M	BRA	+ 49	20 Y	**S64**	F	BRA	+ 49	20 Y
S30	F	BRA	20–29	1 Y	**S65**	M	BRA	40–49	13 Y
S31	F	BRA	40–49	15 Y	**S66**	M	BRA	30–39	13 Y
S32	M	BRA	+ 49	15 Y	**S67**	M	BRA	20–29	1 Y
S33	M	BRA	30–39	14 Y	**S68**	M	CAN	+ 49	25 Y
S34	M	BRA	30–39	10 Y	**S69**	F	BRA	20–29	1 Y
S35	M	PRT	30–39	2 Y					

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