THE IMPACT OF PRE-INCUBATION ON TEAM EFFECTIVENESS: THE CASE OF MOBILE GAME DEVELOPMENT

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

AHMET FURKAN ÜSTÜN

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
THE DEPARTMENT OF SCIENCE AND TECHNOLOGY POLICY STUDIES

JUNE 2023
Approval of the thesis:

THE IMPACT OF PRE-INCUBATION ON TEAM EFFECTIVENESS: THE CASE OF MOBILE GAME DEVELOPMENT

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ABSTRACT

THE IMPACT OF PRE-INCUBATION ON TEAM EFFECTIVENESS: THE CASE OF MOBILE GAME DEVELOPMENT

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June 2023, 180 pages

This study is a qualitative inquiry into exploring the impact of pre-incubation activities on mobile game development team effectiveness with evidence from Animation Technologies and Game Development Center (ATOM). On the basis of a conceptual framework, i.e., Agile Teamwork Effectiveness Model (ATEM), I conducted in-depth interviews with current and past center managers and client incubatees to collect empirical data. Research design partakes of a constructivist approach integrated into interpretative phenomenology grounded on non-deductive reasoning. The ultimate findings indicate that ATOM has (1) an explicit impact on adaptability, peer feedback, and team orientation components through shared mental models, communication, and mutual trust coordinating mechanisms; (2) an implicit impact on redundancy component through communication and mutual trust coordinating mechanisms; (3) no apparent impact on shared leadership component, however. I made theoretical inferences in light of the findings. In line with my theoretical inferences, I propounded policy implications about team effectiveness for the benefit of (1) competent authorities, the current and prospective (2) game-thematic pre-incubation centers, and (3) mobile game development teams.
Keywords: Qualitative inquiry, Interpretative phenomenology, Team effectiveness, Pre-incubation, Mobile game development teams
ÖZ

ÖN KULUÇKALAMANIN TAKIM ETKİNLİĞİ ÜZERİNDEKİ ETKİSİ: MOBİL OYUN GELİŞTİRME ÖRNEĞİ

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Haziran 2023, 180 sayfa

Bu çalışma, ön kuluçkalama faaliyetlerinin mobil oyun geliştirme takım etkinliği üzerindeki etkisini ATOM (Animasyon Teknolojileri ve Oyun Geliştirme Merkezi) örneği üzerinden keşfetme hedefleyen bir nitel araştırmadır. Kavramsal çerçeve olarak kullandığım Çevik Takım Çalışması Etkinliği Modeli (ATEM) temelinde merkezin mevcut ve önceki yöneticileri ve ön kuluca hizmeti alan katılımcılarla derinlemesine görüşmeler yaparak görgülü veri topladım. Araştırma tasarımını olarak yorumsamaçı görgübilime çıkarımsal olmayan muhakemeyi temel alan yapısal bir yaklaşım benimsedim. Nihai bulgular, ATOM'un (1) paylaşılan zihinsel modeller, iletişimi ve karşılıklı güven mekanizmaları aracılığıyla takımların uyum sağlama, görevdaşlar arası geri bildirim ve takım yönelimi bileşenleri üzerinde doğrudan etkisi olduğunu; (2) iletişimi ve karşılıklı güven mekanizmaları aracılığıyla, ait kapasite bileşen üzerine dolaylı etkisi olduğunu; (3) paylaşılan liderlik bileşeni üzerinde ise bariz bir etkinin olmadığını göstermektedir. Bulgular ışığında yapmış olduğum teorik çıkarımlar doğrultusunda, (1) yetkili makam ve mercilerin, mevcut ve potansiyel (2) tematik oyun ön kuluçkalama merkezlerinin ve (3) mobil oyun geliştirme takımlarının istifadesine yönelik politika önerileri sundum.
Anahtar Kelimeler: Nitel araştırma, Yorumsamaçı görüngübilim, Takım etkinliği, Ön kuluçkalama, Mobil oyun geliştirme takımları
To my parents & brother
ACKNOWLEDGMENTS

I sincerely thank the Department of Science and Technology Policy Studies faculty members, mainly my advisor, Prof. Dr. İbrahim Semih AKÇOMAK, for their insightful guidance along the way.

I extend my heartfelt thanks to Assist. Prof. Dr. Arsev Umur AYDINOĞLU, for making me explore social studies of science and technology and, in particular, introducing me to the fascinating world of qualitative research, Assoc. Prof. Dr. Berna BEYHAN, for her contributions that enrich this research, and Prof. Dr. Mehmet Teoman PAMUKÇU for directing me towards readings that I greatly benefited from regarding development and innovation economics.
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<td>Goals, Roles, Processes, Interpersonal Relationships</td>
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<td>IPR</td>
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<td>METU</td>
<td>Middle East Technical University</td>
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<td>MMORPG</td>
<td>Massively Multiplayer Online Role-Playing Game</td>
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<td>MVP</td>
<td>Minimum Viable Product</td>
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<td>NBIA</td>
<td>National Business Incubation Association</td>
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CHAPTER 1

INTRODUCTION

This chapter serves as an introduction and provides an overview of the research, introduces its research question, explains its rationale, and also includes the structure of this thesis.

1.1. Overview

This study is a qualitative inquiry into exploring the impact of pre-incubation on mobile game development team effectiveness with evidence from interviews with the current and former managers of Animation Technologies and Game Development Center (ATOM) and participants from incubated teams.

‘Deconstructing’ (Derrida, 1967) the research question into its elements falls into two entities and, in between, a relation. The two entities are (1) the pre-incubation center, in this case, ATOM, and (2) incubatee teams, in this case, mobile game development teams for which ATOM currently provides or previously provided pre-incubation services. The relation between these two entities, i.e., the former’s impact on the latter’s team effectiveness, is under research.

As elaborated in the second chapter, team effectiveness is a sine qua non for enhancing team management (Singh & Muncherji, 2007). It is a multilayered construct (Delgado Piña, Martínez & Martínez, 2008) encompassing internal and external factors (Kozlowski & Bell, 2003). Although the definitions proposed for team effectiveness are abundant (Mathieu et al., 2008), scholars pioneering on this subject converge upon conceptualizing this notion through three significant dimensions in accord with the impact of a team on (1) its performance effectiveness assessed in terms of quality and quantity of outputs, (2) the attitudes of its members, (3) behavioral outcomes (Cohen & Bailey, 1997); (1) quality of the output, (2) ability to work interdependently, and (3)
the growth and well-being of its members (Guzzo, 1986; Hackman, 1990); (1) productivity, (2) member satisfaction, and (3) manager judgments on effectiveness (Campion, Medsker & Higgs, 1993). Consequently, this notion as a whole, is a function of performance, behavior, attitude, team member style, and corporate culture in essence (Meredith Ross, Jones & Adams, 2008).

Thus far, research on team effectiveness has introduced team effectiveness models (Nguyen, 2020). A team effectiveness model is a framework that enables decision-makers to understand how well a team performs and correspondingly take necessary steps to boost performance and accomplish targeted goals (Gujarai, 2020). Numerous team effectiveness models have been developed over time (Kumaran, 2022). A review by Salas et al. (2007) to present a synthesis of team effectiveness models and frameworks resulted in the identification and subsequent integration of 138 initiatives that systematized team performance or effectiveness. However, most of these models are too generic to thoroughly address team peculiarities (Schweitzer, 2005). This fact makes contextual coherence with the entity under research a critical factor in determining a suitable team effectiveness model. The conceptual framework of this research is called the Agile Teamwork Effectiveness Model (ATEM) (Strode, Dingsøyr & Lindsjorn, 2022), a team effectiveness model adapted for agile software development teams from the canonical Big Five teamwork theory (Salas, Sims & Burke, 2005). As elaborated in the second and fourth chapters, ATEM has a contextual coherence with the idiosyncratic characteristics of mobile game development teams (Aleem, Capretz & Ahmed, 2016; Annanperä et al., 2018; Kim, 2014) and the chief purpose of pre-incubation services (Deutschmann, 2007).

1.2. Research Question

The primary research question is:

How do pre-incubation services affect mobile game development team effectiveness?

The components of the underlying conceptual framework, ATEM, account for the relation between entities, i.e., the impact of the subject that emerges through the mechanisms on the object. As a result, ATEM serves to compose the research sub-questions (RQ) (please refer to Section 3.3), which scaffold the interview guide.
In recent years, the game industry, particularly the mobile games market, has experienced significant growth on a global scale (Nam & Kim, 2020), and it is the fastest-growing industry in the world (Son, Oh & Lee, 2015). The remarkable increase in mobile hardware capabilities over the past few decades has culminated in substantial growth and amazing progress in the mobile game industry (Song et al., 2022), especially in the last decade (Matheus & Jayadi, 2023). This explosive growth owes its success to the rapidly increasing use of mobile phones (Tekin et al., 2022), the expansion of two giant platforms: Android and iOS (Qusef et al., 2019), the easy accessibility to download from digital distribution services (Zhang, 2020), and lifestyle changes (Bao, 2022). The number of players has surpassed 2.6 billion worldwide as of 2020 (Laperdrix et al., 2022) by performing its most prominent growth during the COVID-19 Pandemic (Singh, 2021) and reached its all-time high (Nielsen, 2020). This expansion, in turn, brings along an increase in industrial proceeds. According to the latest report of Newzoo, the global leader in video games and gamer data, while the overall game industry has reached proceeds of $175.8 billion as of 2021, the mobile games industry represents $90.7 billion, which connotes that the mobile games industry makes up about 52% of the overall global market (2022).

The global trends of the mobile game industry are also present on the national scale, even proportionally more. According to the Gaming in Turkey reports of the last three years, the industry continually receives the highest investment depending upon the increase in the online population, smartphone users, and mobile players. (2021, 2022, 2023). Apart from the Getir case, more than half (54%) of the investments were in the gaming and fintech sectors, while the lion’s share is in the mobile game industry. These sectors set new records regarding investment amounts, surpassing their previous records (Gaming in Turkey, 2022). Despite the economic repercussions of the fluctuations in international politics worldwide, Istanbul secured the second position in Europe, after London, for the most concluded game deals in 2022, with the fifth rank globally (Gaming in Turkey, 2022). The first Turkish unicorn, a term coined by Lee (2013) for a company that has reached a valuation of $1 billion without being listed on the stock market, is Peak Games (Öztürk & Bülbül, 2022). In 2020, Zynga, the US-based leading developer of the world's most popular social games, acquired
Peak Games for $1.8 billion after buying its card games studio for $100 million in 2017 (Lunden, 2020) and Rollic Games for $168 million (Güler & Akca, 2021). Another Turkish mobile game startup, Dream Games, obtained the highest Series B venture capital financing, with a valuation of $1 billion (Coşkun & Coşkun, 2022). Arcade Monk and Gram Games are other examples of Turkish mobile game companies that have acquired venture capital from international funds (Şengün & Öztürkcan, 2020). This trend has led to an unprecedented increase in the quantity of newly established companies, employees, games produced, and proceeds generated in the mobile game industry. This dynamism, in turn, has created numerous prospects for industry entrepreneurs, businesses, software developers, and job hunters (Budak, 2020).

The fact remains that, this trend brings fierce competition that calls upon mobile game companies to secure their position (Budak & Özen, 2022). Originating mobile games that encounter market demands comes with challenges (Alves, Ramalho & Damasceno, 2007). In this respect, mobile game development teams must prioritize user satisfaction (Alhaidary & Altammami, 2017). To deliver this purpose, specifically, data analytics (Mikkonen, 2019), portability issues depending on platform variation (Bhowmik, Alves & Niu, 2014; Lovreto et al., 2018), gameplay and emotional appeal (Alves et al., 2007) are some of the essential non-functional requirements that mobile game development teams should bear in mind. Apart from these requirements, the mobile game development cycle is typically concise and often rigid to deadlines. Time-to-market constraints largely affect the mobile game development lifecycle (Alves et al., 2005), and the development process is exceptionally creative but rarely follows a well-defined software engineering process (Bhowmik et al., 2014). These features indicate that mobile game development has some idiosyncratic characteristics. Kim (2014) classified these characteristics as (1) the industry shares similarities with the movie industry; (2) there is no way to surmise which game will achieve success in the market; (3) a pure business-to-consumer interaction characterizes the market; (4) short time-to-market is of critical importance (Clark & Wheelwright, 1993) since the market and technology are in a constant change.
The recency of the flourishing industry denotes that mobile game development teams also are nascent. Exceptions aside, most teams are in the early stages of their incorporation, and even a good part still needs to be incorporated. Most new studios have limited resources (Sotamaa, 2020), and their members, even their founders, typically have no previous team leadership experience by age. Hence these teams may need external support to meet the requirements of an effective team. This circumstance sets the stage for the pre-incubator to become a substantial actant in stimulating entrepreneurial activity (Kepenek, 2018) and effectuating team effectiveness in nascent mobile game development teams, which feel the need of support for teaming, a phenomenon exclusively supported by a pre-incubator, unlike an incubator or accelerator. A pre-incubator, a different conception from an incubator, is a facility that bears out embryonic businesses, which corresponds before birth, during their planning stage (Hannon, 2004; Kirby, 2004; Wirsing et al., 2002). Birth, in this context, refers to the point of generating first turnovers (Deutschmann, 2007).

Understandably, the quality of mobile games dramatically depends on the development team rather than on exemplary practices from other software domains (Alves, Câmara & Alves, 2008; Kanode & Haddad, 2009; Osborne O’Hagan, Coleman, & O’Connor, 2014; Washburn et al., 2016; Yaman, Mikkonen & Suomela, 2018). It is crucial to differentiate mobile game development from software development and avoid making assumptions since the former entails considerable creative work, collaboration, and disagreements among multidisciplinary team members (Iacoviello, 2019). After all, standard mobile game development practices underline the importance of teamwork and iteration (Lukka, 2017). As Kline, Dyer-Witheford, and De Peuter (2003, p. 199) have argued, the game industry is “a central arena for experimentation in teamwork, charismatic leadership, ultra-flexible schedules, open-space work areas, flattened hierarchies, stock options, and participative management.”

As it is seen, the locus of the impact of pre-incubation on mobile game development team effectiveness is the nexus of pre-incubation as a substantial concept and the mobile game development team dynamics as a sui generis content. These shreds of evidence elucidate the significance of this phenomenon and the possible impact of pre-incubation on practicing this, eventually pave the way for this research.
The novelty of this research is literally inquiring about this nexus. The previous research is either on the general impact of pre-incubation on the development of entrepreneurial skills rather than on mobile game development team effectiveness or mobile game development team effectiveness but not on the impact of pre-incubation on this phenomenon. Accordingly, this research is in pursuit of direct empirical evidence about the impact of pre-incubation on mobile game development team effectiveness.

1.4. Structure

This thesis consists of five chapters. Following this prologue, the second chapter introduces the basic concepts of the context. With reference to the literature, the team, teamwork, team effectiveness, and team performance concepts, team effectiveness models, and pre-incubation are profoundly, and where context entails, comparatively scrutinized over the conceptual framework. Following an analysis of the sui generis nature of mobile game development and the mobile game development teams, the chapter concludes the scope by addressing the gap in the literature.

The third chapter is allocated to the methods. This chapter exhaustively elaborates the research design from theoretical paradigms to the statement of the findings, the adventure of data collection with the introduction of ATOM and participant profiles on the principle of participant privacy, the data analysis stages, and the validity and constraints of the research.

The research findings are presented in the fourth chapter. Its subchapters correspond to the findings, i.e., the takeaways from the research. The subsequent flow of this chapter continues an explanation of a theme supported by the testimony of empirical data and further explication of the finding in a structured format. Each theme also contains its codes from the data analysis. For the entire codebook, please refer to Appendix C.

The final chapter deals with the research findings through the theoretical background. The chapter deliberates on the theoretical implications regarding the motives of the research, which act upon the intersectional literature, and practical implications, which
constitute the datum for the policy recommendations and propose an agenda for further research.
CHAPTER 2

BACKGROUND

This chapter partakes in the background of this research with reference to the literature. The team, teamwork, team effectiveness, team performance concepts, team effectiveness models, and the pre-incubation concept are profoundly, and where context entails, comparatively scrutinized over the conceptual framework. Following an analysis of the sui generis nature of mobile game development and mobile game development teams, the chapter concludes by addressing the research gap in the literature.

2.1. Basics

This section defines the team, teamwork, team effectiveness, and team performance concepts, introduces the prominent team effectiveness models, and explains their historical development. I particularly dwell on the underlying conceptual framework, ATEM (Strode et al., 2022), and its underpinning theoretical model, Big Five (Salas et al., 2005), with their components.

2.1.1. Team

A team is a group of individuals collaborating and working together towards a targeted goal, with each member contributing their unique skills and flairs to achieve a shared objective (Guzzo & Dickson, 1996; Salas et al., 2008). The concept of a team is often compared and contrasted with that of a group, which can be defined as a collection of people who are brought together for a common purpose, but may only sometimes work together collaboratively (Katzenbach & Smith, 1993).

One key difference between a group and a team is the level of interdependence among the members (Kozlowski & Ilgen, 2006; Wheelan, 2009). In a group, individuals may
work independently or in small sub-groups towards a shared goal, whereas, in a team, members must work together in a coordinated and interdependent manner to achieve success (Fisher & Hunter, 1997). This interdependence can foster a sense of shared responsibility and accountability among team members, which can lead to greater commitment and investment in the success of the team as a whole (Salas et al., 2008). While groups can be effective in certain situations, teams are often seen as more effective in completing complex tasks and achieving long-term goals (Wheelan, 2009).

An important characteristic of effective teams is the presence of clear goals and objectives and a shared understanding of how these goals will be achieved (Hackman, 2002). This requires effective communication, collaboration among team members, and a willingness to be open to feedback and new ideas (Algarni, 2022). In addition, effective teams often have a clear sense of roles and responsibilities, with each member contributing in a unique and valuable way to the targeted success (Guzzo & Dickson, 1996).

Research has shown that effective teams can have an important role in organizational performance and productivity and tend to outperform groups in various areas, such as problem-solving, decision-making, and innovation (Salas, Cooke, & Rosen, 2008). For example, a study by Salas et al. (2008) found that teams that obtained on-the-job training in teamwork and communication could reduce medical errors by over 70% in a hospital setting. Similarly, Guzzo and Dickson (1996) found that well-structured and interdependent teams achieved higher levels of productivity and quality than less effective teams.

2.1.2. Teamwork

Teamwork refers to the collaboration of two or more individuals to accomplish a common goal (Katzenbach & Smith, 1993). Teamwork is important since it enables individuals to pool their skills, knowledge, and experience to achieve better outcomes than would have been possible if each individual had worked alone (Salas et al., 2008; Wheelan et al., 2003). Teamwork is especially important in agile development teams, which require frequent communication and coordination among team members to produce high-quality software products (Paasivaara, Durasiewicz & Lassenius, 2012; Stettina & Horz, 2013).
Mobile game development teams generally apply agile product development methodologies as a rule (Herzwurm & Tria, 2017; Paasivaara et al., 2012; Wang, Conboy & Cawley, 2017). Therefore, it is appropriate to focus specifically on teamwork for the agile teams, which is the focus of this study. Effective teamwork in agile development teams also requires attention to other factors, such as effective communication, task allocation, and decision-making. Studies have highlighted the importance of communication in agile teams (Moe, Agerfalk, & Mathiassen 2019; Serrano & Pinto, 2021) and have proposed various communication strategies to enhance team performance. The distribution of tasks in agile teams is also a critical factor in achieving effective teamwork, and research has proposed various task allocation strategies such as self-organization and task distribution (Dikert, Paasivaara & Lassenius, 2016; Zettel & Moe, 2020). Effective decision-making is also substantial in agile development teams, and studies have proposed decision-making models such as consensus-based decision-making (Jansen, van de Ven & Vos, 2019) and multi-criteria decision-making (Zhou, 2015) to enhance team decision-making capability.

As it is seen, effective teamwork is crucial in achieving successful outcomes in agile development teams. Using team effectiveness models can provide a framework for understanding the factors contributing to team effectiveness. Customized team effectiveness models for agile teams have been proposed in recent years, emphasizing the importance of factors such as agile values, shared leadership, and psychological safety (Maqbool, Ahmad & Farooq, 2021; Misra & Kumar, 2019; Strode et al., 2022). Attention to factors such as effective communication, task allocation, and decision-making is also vital in accomplishing effective teamwork in agile development teams.

2.1.3. Team Effectiveness

Team effectiveness refers to the degree to which a team achieves its goals and meets its stakeholders' expectations while maintaining high levels of team member satisfaction and well-being (Hackman & Wageman, 2005). Even though different definitions have been offered for team effectiveness in the literature, the concept can be defined as the real-time altering of behavior and interactions to meet the changing demands of a dynamic environment to accomplish the shared team goal (Gorman, Grimm & Donbar, 2018).
One important aspect of team effectiveness is the presence of clear and challenging goals. Teams with clear goals and objectives are likelier to focus their efforts and achieve success (Latham & Locke, 1991). Effective teams also tend to have a high degree of task interdependence, which means that each team member’s contributions are necessary for the team to achieve its goals (Salas et al., 2008). This can create a sense of shared responsibility and accountability among team members, leading to higher levels of motivation and commitment (Hackman & Wageman, 2005).

Another key characteristic of team effectiveness is effective communication and collaboration (Hackman, 2002). Teams that are able to communicate effectively are better equipped to resolve conflicts, coordinate their efforts, and make sound decisions (Kozlowski & Ilgen, 2006). Effective collaboration involves not only favorable communication but also a willingness to share knowledge and resources and to work together toward a common goal (Edmondson, 2012). Team effectiveness is also influenced by the individual characteristics of team members, including their skills, knowledge, and attitudes (Barrick et al., 1998). Effective teams tend to have a diverse range of skills and perspectives, which can facilitate creativity and innovation (van der Vegt & Janssen, 2003). Furthermore, effective teams ensure a constructive team spirit, where team members feel valued and supported by their colleagues (West, Borrill, & Unsworth, 1998).

Research has shown that effective teams can have a vast influence on organizational performance and productivity (Salas et al., 2008). Effective teams can also lead to improved member well-being, job satisfaction, and increased innovation and creativity (Kozlowski & Bell, 2003). However, achieving team effectiveness can be a complex and challenging process, requiring ongoing effort and attention from team members and leaders (Hackman & Wageman, 2005).

To sum up, team effectiveness is a multi-faceted concept (Hackman & Wageman, 2005; Salas et al., 2005) that involves clear goals and objectives (Locke & Latham, 2002; Mullen & Cooper, 1994), effective communication and collaboration (Wheelan, 1994; Wittenbaum, Hollingshead & Botero, 2004), diverse team member skills and attitudes (Jehn & Bezrukova, 2010; Williams & O'Reilly, 1998), and a positive team climate (Guzzo & Salas, 1995; West, 1996). Effective teams are able to overcome
challenges and capitalize on opportunities (Kozlowski & Bell, 2003; Tushman & O’Reilly, 1996), leading to improved organizational performance and member well-being (Campion, Medsker & Higgs, 1993; Hackman & Oldham, 1975). However, it should be emphasized that achieving team effectiveness is a complex and ongoing process requiring effort and attention from team members and leaders (Salas et al., 2008).

2.1.4. Team Performance

At this juncture, it is important to clarify that team effectiveness and performance are two distinct concepts often used interchangeably in the literature (Mathieu et al., 2008). According to Salas, Rico, and Passmore (2015) “Team performance and team effectiveness are not synonymous” (p. 357). To put a finer point on it “Team effectiveness is distinct from team performance in that it refers to the ability of a team to achieve its goals and objectives, whereas team performance refers to the actual outcomes produced by the team” (LePine et al., 2008, p. 157). Team effectiveness refers to the extent to which a team accomplishes its goals and meets the expectations of its stakeholders, while team performance refers to the outcomes that a team produces, such as productivity, quality, and innovation (DeRue et al., 2011).

One study by Haas and Mortensen (2016) found that team effectiveness and performance are related but distinct constructs. The study found that team effectiveness was positively related to both task performance and relational performance, while team performance was positively related to task performance but not to relational performance. Some authors suggest that these findings may originate in the fact that task performance is more visible and measurable than relational performance, which can be more difficult to quantify (Ilgen et al., 2005). Another study (DeRue et al, 2011) examining the relationship between team effectiveness and team performance in the context of project-based work found that team effectiveness was positively related to project performance, which was measured by a combination of quality, timeliness, and budget adherence. The study also found that task-related processes, such as task clarification and coordination, mediated the relationship between team effectiveness and project performance.
Overall, these studies suggest that while team effectiveness and team performance are related, they are distinct constructs that should be measured separately. Furthermore, the studies highlight the importance of considering task-related and relational processes in understanding the relationship between team effectiveness and performance.

### 2.1.5. Team Effectiveness Models

Team effectiveness models are conceptual frameworks that help understand the factors that contribute to high-performing teams (Salas et al., 2005; Hackman & Oldham, 1980) that aim to explain how teams can achieve high levels of performance (Campion, Papper, & Medsker, 1996; Hackman & Wageman, 2005; Marks, Mathieu, & Zaccaro, 2001). These models have emerged from a range of disciplines, including psychology, sociology, and management (Kozlowski & Ilgen, 2006; Sundstrom, DeMeuse, & Futrell, 1990) with the recognition that simply putting a group of individuals together and calling them a team does not automatically lead to effective performance (Katzenbach & Smith, 1993; Kozlowski & Ilgen, 2006) and have been developed and refined over several decades (Ilgen et al., 2005; Tannenbaum et al., 1991). Effective teamwork is facilitated by the use of team effectiveness models, which provide a framework for understanding the factors that contribute to team effectiveness and the processes by which teams can enhance their performance. (Salas, Rico, & Passmore, 2017). Rather, teams require careful attention to the composition, processes, and contextual factors that facilitate their functioning (Wheelan, 2005; Guzzo & Dickson, 1996).

### Precursor Team Effectiveness Models

There are various team effectiveness models in the literature. The precursor team effectiveness models include Tuckman’s FSNP model on forming, storming, norming, and performing (Tuckman, 1965); the GRPI model, which stands for goals, roles, processes, and interpersonal relationships (Rubin, Plovnik & Fry, 1977); the Input-Process-Output (IPO) model (Hackman & Oldham, 1976), which identifies three key components of effective teams, i.e., input factors such as team composition and task characteristics, process factors such as communication and coordination, and output factors such as team performance and member satisfaction; the Salas, Dickinson,
Converse, and Tannenbaum model, which highlights the importance of organizational context and group design and their effect on the performance of a team (Salas et al., 1992), the Katzenbach and Smith model, which focuses on team basics through six determinants (Katzenbach and Smith, 1993), the Korn/Ferry T7 model which represents seven critical internal and external facets in total that influence the performance of work teams (Lombardo & Eichinger, 1995), the LaFasto and Larson model (2001) which outlines five dynamics of teamwork and collaboration, the Hackman model which establishes five necessary conditions for team effectiveness (Hackman, 2002), and the Lencioni model which focuses on understanding five potential team dysfunctions (Lencioni, 2002). Table 1 tabularizes team effectiveness models with their primary elements.

**Table 1: Precursor team effectiveness models**

<table>
<thead>
<tr>
<th>The model</th>
<th>Its pillars</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuckman’s FNSP Model (1965)</td>
<td>Forming, Norming, Storming, Performing, Adjourning</td>
</tr>
<tr>
<td>The IPO Model (1976)</td>
<td>Inputs, Processes, Outputs</td>
</tr>
<tr>
<td>The GRPI Model (1977)</td>
<td>Goals, Roles, Processes, Interpersonal Relationships</td>
</tr>
<tr>
<td>The Katzenbach and Smith Model (1993)</td>
<td>Commitment, Skills, Accountability</td>
</tr>
</tbody>
</table>
The study of team effectiveness has been fragmented throughout the years. The precursor models have evolved over time thanks to longitudinal research on their application to different organizations and contexts.

**Literature Reviews**

Literature reviews of team effectiveness models have been conducted to synthesize and analyze the current state of research in this area. These reviews suggest that the key factors that contribute to team effectiveness include clear and challenging goals, effective communication and collaboration, shared understanding of roles and responsibilities, positive team climate, and member diversity and skills (Hackman & Wageman, 2005; Kozlowski & Bell, 2003; Salas et al., 2005; van der Vegt & Janssen, 2003; West et al., 1998). The studies conducted by Doblinger (2022), Goodwin et al. (2008), Jetu and Riedl (2012), Martin et al. (2008), Takai and Esterman (2019) are some examples of literature reviews of team effectiveness models.
Team effectiveness models typically focus on different aspects of team functioning, such as team composition, communication, leadership, and task design. Accordingly, literature reviews circle around such particular aspects. One such review by McHugh et al. (2018) examined 70 empirical studies on team effectiveness models and identified 13 most frequently studied models. The authors found that most of the models focused on factors such as team processes, communication, and leadership and highlighted the importance of context-specific factors in determining team effectiveness. Exemplary context-specific literature reviews are studies discussing engineering student project teams (Borrego et al., 2013), interactive technologies (Georganta, Peus & Niess, 2023), hospital management (Adham et al., 2012), and healthcare (Buljac-Samardzic, Doekhie & van Wijngaarden, 2020; Lemieux-Charles & McGuire, 2006). Some reviews especially put emphasis on a particular factor, such as transformational leadership (Özaralli, 2003; Paolucci et al., 2018), trust (Kiffin-Petersen, 2004), and workplace spirituality (Luis Daniel, 2010).

Mathieu et al. (2019) examined 108 articles on team effectiveness models and identified three major categories of models: input-process-output models, emergent state models, and integrative models. The authors noted that while input-process-output models are the most widely studied, emergent state models offer a more dynamic and nuanced understanding of team processes and outcomes.

A study I would like to labor the point is the review of Salas et al. (2021) which examined 144 studies on team effectiveness models and identified seven key dimensions of team effectiveness: task performance, teamwork, adaptability, creativity, innovation, decision-making, and leadership. The authors highlighted the need for future research to develop more context-specific team effectiveness models that consider the unique characteristics of different teams and environments.

In conclusion, team effectiveness models have been extensively studied in the literature, but their effectiveness may vary based on contextual factors such as team size, task complexity, and organizational culture. Customized team effectiveness models can provide a more accurate assessment of team effectiveness and help teams improve their performance. For software development teams, customized team
effectiveness models such as those proposed by Strode et al. (2022) can help assess and improve team performance in particular contexts.

**Salas et al.’s (2005) Big Five Model**

The Big Five team effectiveness model has gained widespread recognition and has been extensively researched. The model draws its strength from a systematic analysis of previous team effectiveness studies. Grounded on the factors of the highest magnitude, the model consequently identifies five key components that contribute to team effectiveness: (1) team leadership, (2) mutual performance monitoring, (3) adaptability, (4) team orientation, and (5) backup behavior (Salas et al., 2005). Team leadership refers to the team leader's effectiveness in providing guidance, support, and direction to the team. Mutual performance monitoring involves the ability of team members to monitor each other's performance and provide feedback to improve performance. Adaptability refers to the ability of the team to adjust to changing circumstances and overcome inevitable obstacles. Team orientation refers to the degree to which team members are committed to the team's goals and work collaboratively to achieve them. Backup behavior refers to the extent to which team members support each other and provide assistance when needed. This model has been widely adopted and tested in various settings, including military operations (Mathieu et al., 2008), healthcare (Baker et al., 2008), and aviation (McKeon et al., 2009). I dwell on these components with their reconsidered titles in the upcoming part.

**Customized Team Effectiveness Models**

Even though team effectiveness models provide a useful framework for understanding the factors that contribute to high-performing teams, it is important to recognize the limitations of these models and the need for ongoing research to further refine our understanding of team dynamics. In relation to that, some researchers have noted that team effectiveness models tend to oversimplify the complex dynamics of team functioning and that a more nuanced understanding of context-specific factors is needed to fully understand team effectiveness (Edmondson, 2012). The effectiveness of teams may vary based on various contextual factors (Mathieu et al., 2008; Mohammed & Nadkarni, 2011) such as team size (Gibson & Vermeulen, 2003; Kozlowski & Ilgen, 2006), task complexity (Hackman & Oldham, 1980; Waller, M,
Gupta, & Giambatista, 2011), and organizational culture (Denison, 1990; Schein, 1992). It is necessary to add that it is essential to develop customized team effectiveness models to fit specific team contexts.

Customized team effectiveness models are becoming increasingly important as organizations recognize the need to tailor their approaches to the unique contexts in which their teams operate (Mathieu et al., 2020). Customized team effectiveness models are designed to account for unique team characteristics and contextual factors. In recent years, a number of researchers have proposed customized team effectiveness models for various contexts based on a comprehensive review of the literature (Kozlowski & Bell, 2013). These models are specific to particular contexts (DeChurch & Mesmer-Magnus, 2010), such as agile teams (Denning, 2018; Serrano & Pinto, 2021; Strode et al., 2022), software development teams (Moe, Dingsøyr & Dybå, 2012), small teams (Hackman, 2002), complex settings (Essens et al., 2008), multiteam systems (Turner et al., 2020), virtual teams (Piccoli, Powell & Ives, 2004). These researchers emphasize the importance of developing customized team effectiveness models that fit the unique characteristics of different team contexts (Morgeson et al., 2015; Kozlowski & Ilgen, 2006). These models recognize that teams operating in these contexts may face unique challenges and require different strategies to achieve high-performance levels. Taken together, these studies highlight the importance of considering contextual factors when designing a team effectiveness model. Organizations can improve team effectiveness and ultimately achieve better outcomes by tailoring the model to the unique context in which the team operates. These models can provide a more accurate and relevant assessment of team effectiveness and help teams improve their performance.

**Agile Models and ATEM (Strode et al., 2022)**

The use of team effectiveness models in agile development teams is consequential seeing that these teams typically have unique characteristics such as frequent changes in requirements, high levels of uncertainty, and a need for rapid feedback (Moe & Dingsøyr, 2018; Paasivaara et al., 2012). To give an example, in the context of software development teams, the agile manifesto has been a major influence on the development of team effectiveness models, with its emphasis on principles such as
"working software over comprehensive documentation" and "responding to change over following a plan" (Beck et al., 2001). As a result, several proposed models focus on factors such as continuous feedback and improvement, self-organizing teams, and adaptive planning (Dybå & Dingsøyr, 2008; Highsmith, 2000). Similarly, in the context of small teams, models such as Wheelan's integrated model of group development and West et al.'s team effectiveness model have been adapted to account for the unique challenges that small teams face, such as lack of resources and limited opportunities for specialization (Wheelan, 1994; West et al., 1998).

A substantial domain where customized team effectiveness models are particularly crucial is software development (Dikert et al., 2016; Moe et al., 2012). Team effectiveness is an indispensable aspect of software development (Hoegl, Parboteeah, & Gemuenden, 2003; Sonnentag et al., 1997). Agile software development, in particular, has gained popularity in recent years due to its iterative and collaborative approach to development (Cohn, 2010; Schwaber, 2004). However, traditional team effectiveness models may not be suitable for agile development teams (Bass et al., 2013; Dingsøyr et al., 2012) since they often have unique characteristics such as self-organizing teams, cross-functional roles, and frequent communication (Larman & Vodde, 2009; Schwaber & Sutherland, 2017).

A recent study by Strode et al. (2022) proposed a salient model, the Agile Teamwork Effectiveness Model (ATEM), for agile software development teams by grounding on a comprehensive review of the literature, particularly on Salas et al.’s Big Five model (2005). ATEM includes four dimensions: agile values, team processes, team characteristics, and team outcomes through five components and three coordinating mechanisms. Under every component, the model also has behavioral markers, which are the bottom-of-the-ladder indicators of a particular component of team effectiveness. These markers can be used to evaluate whether a team is acting effectively while its work is underway (Strode et al., 2022). Due to its relevance to the context, this study embraced ATEM as its underlying conceptual framework. The fact remains that, in line with its research design, this study did not entirely stick to its behavioral markers for the sake of its interpretative essence. Otherwise, the prospective solution recommendations would be too rigid to extend, which is not preferred.
The coordinating mechanisms that stem from the model are ‘shared mental models,’ ‘communication,’ and ‘mutual trust,’; and the components are ‘shared leadership,’ ‘peer feedback,’ ‘redundancy,’ ‘adaptability,’ and ‘team orientation’ (Strode et al., 2022). Figure 1 presents the ATEM with its five teamwork components and three coordinating mechanisms.

**Figure 1:** The ATEM with its components and coordinating mechanisms

*Source: Strode et al. (2022)*

At this juncture, it would be preferential to convey the definitions for the five components and the three coordinating mechanisms of the conceptual framework as defined by Salas et al. (2005). Even while I kept the redescriptions of Strode et al. (2022), I cared to present their definitions in the way they are defined by their originators. It should be kept in mind that these components are not literally mutually exclusive. Instead, an ensemble of all these elements constitutes the overall team effectiveness.

**Shared leadership**

Strode et al. (2022) redescribed ‘team leadership (Salas et al., 2005) as ‘shared leadership’ since they believe that this term would better align with the philosophy of agile methods (Moe, Dingsøyr & Kvångardsnes, 2009). Team leadership is defined as the
“Ability to direct and coordinate the activities of other team members, assess team effectiveness, assign tasks, develop team knowledge, skills, and abilities, motivate team members, plan and organize, and establish a positive atmosphere” (Salas et al. 2005, p. 560).

**Peer feedback**

Strode et al. (2022) redescribed ‘mutual performance monitoring’ (Salas et al., 2005) as ‘peer feedback’ since they believe agile team members will find this name more understandable and relevant to their team environments. Mutual performance monitoring is defined as the “ability to develop common understandings of the team environment and apply appropriate task strategies to accurately monitor teammate performance” (Salas et al. 2005, p. 8).

**Redundancy**

Strode et al. (2022) redescribed ‘backup behavior’ (Salas et al., 2005) as ‘redundancy’ because the idea of redundancy is more familiar to those involved in software development than the term backup behavior. Backup behavior is defined as the

> “ability to anticipate other team members’ needs through accurate knowledge about their responsibilities. This includes the ability to shift workload among members to achieve balance during high periods of workload or pressure” (Salas et al. 2005, p. 560).

**Adaptability**

Adaptability is defined as the

> “ability to adjust strategies based on information gathered from the environment through the use of backup behaviour and reallocation of intra-team re-sources. Altering a course of action or team repertoire in response to changing conditions (internal or external)” (Salas et al., 2005, p. 560).
Team orientation

Team orientation is defined as the “Propensity to take other’s behaviour into account during group interaction and the belief in the importance of team goal’s over individual members’ goals” (Salas et al., 2005, p. 561).

Shared mental models

Shared mental models are defined as “An organizing knowledge structure of the relationships among the task the team is engaged in and how the team members will interact” (Salas et al. 2005, p. 560).

Mutual trust

Mutual trust is defined as the “shared belief that team members will perform their roles and protect the interests of their teammates” (Salas et al., 2005).

Communication

Strode et al. (2022) redescribed ‘closed-loop communication’ (Salas et al., 2005) as ‘communication’ to reduce the focus on one-to-one communication for convenience. Closed-loop communication is defined as “the exchange of information between a sender and a receiver irrespective of the medium” (Salas et al., 2005, p. 561).

2.2. Mobile Game Development as a Sui Generis Context

As I worked through in Section 1.3, mobile game development has become a major field of software development in recent years. Aside from the statistics above that emphasize its significance, it is an area with its own unique characteristics and challenges that differentiate it from other software development domains (Hussain & Mkpojiogu, 2019). This growth presents new opportunities for mobile game developers but also presents unique challenges in terms of the software development life cycle (SDLC), development culture, and team effectiveness (Chen et al., 2017).

Mobile game development is a sui generis context due to its idiosyncratic aspects. In order to create a successful game, it is essential to have an effective team that can work together to overcome the unique challenges of the domain (Mäntylä, Itkonen &
Mobile game development teams have mostly embraced agile approaches (Aalto, 2015) that enable faster game exploration (Yaman et al., 2018) through iterative prototyping (Washburn Jr, 2016) since innovation and speed are of critical importance (Osborne O’Hagan et al., 2014) due to market constraints (Alves et al., 2008). The development of mobile games is characterized by a rapid development lifecycle, a unique development culture, and a high level of uncertainty (Yang et al., 2016). Although it requires plenty of different skills and knowledge from the development teams: sound and art, artificial intelligence, control systems, and especially the understanding of human factors (Aleem et al., 2016), mobile game development is not just software development (Annanperä et al., 2018). Mobile games are often developed under tight deadlines; development cycles can be as short as a few weeks.

Moreover, one of the most remarkable trends in mobile game development is the development of hypercasual games (Kim, Huh, & Lee, 2020), albeit with its current deceleration. Hypercasual games are simple, easy-to-play games that are designed to be played in short bursts. They are popular among casual gamers and can be very lucrative for developers. However, the development of hypercasual games presents unique challenges, such as the need for rapid prototyping and testing (Farzana & Nishat, 2019; Dorokhine & Bratt, 2022). This can significantly strain the development team and impact team effectiveness.

Mobile game development teams are often characterized by heterogeneity in terms of team member roles and professions. The heterogeneity of mobile game development teams in terms of team member roles, different professions, and cultural backgrounds is a common feature that has been explored by various studies (Hauge & Kristiansen, 2019; Williams, Yee, & Caplan, 2008). A typical mobile game development team may include a mix of programmers, artists, designers, and testers, each with unique skill sets and expertise. This diversity of roles is essential for developing a successful game, as it enables the team to cover a range of activities required for the development process. Although the different professions within a mobile game development team can bring diverse perspectives and approaches to problem-solving, which can lead to more creative solutions (DeGroff, Li, & McManus, 2016), this heterogeneity can also pose challenges in terms of communication and coordination (Tu, 2018). Professionals
may use different terminology and communicate differently, leading to misunderstandings and miscommunications. Effective communication strategies and coordination mechanisms must be in place to address these challenges to ensure effective collaboration and teamwork (DeGroff et al., 2016).

The development culture of mobile game development is also unique. The culture is characterized by high creativity, experimentation, and risk-taking (Deterding et al., 2011). Developers are often required to develop new and innovative ideas quickly and iterate on them until they find a viable solution (Hakulinen, Auvinen & Turunen, 2015; Zagal, Mateas & Fernandez-Vara, 2013). This culture can lead to high stress and pressure for developers, impacting team effectiveness (Larsen & Løvlie, 2018; Schubert & Schubert, 2017).

In conclusion, mobile game development is a unique domain with its own set of challenges and opportunities. The idiosyncratic aspects of mobile game development, such as its SDLC, development culture, and unique challenges like hypercasual games, require a customized approach to team effectiveness models. In this respect, there needs to be more research on team effectiveness models in the context of mobile game development.

2.3. Pre-Incubation as a Substantive Concept

Even though the origins of the contemporary business incubation movement can be traced back to the creation of an incubator initiative in New York in 1959, as well as the founding of a research park in California in 1951 (Mian, Lamine & Fayolle, 2016), pre-incubation is a relatively new concept in the entrepreneurship literature that refers to the process of preparing and developing early-stage startups for incubation and acceleration programs (Foss, Scheel & Veland, 2019; Jang, Lee & Kim, 2018). The first pre-incubator was established in the University of Bielefeld in Germany in 1997 to address the need for knowledge hindering universities’ ability to commercialize innovative ideas (Bielicki & Stevenson, 2020). Pre-incubation is aimed at facilitating the initial stage in the startup development process, and its main goal is to help teams validate their business idea, develop their product or service, and establish a viable business model (Foss et al., 2019; Jang et al., 2018).
Pre-incubation can also help startups validate their business idea and refine their product or service, increasing their chances of success in the later stages of the startup development process (Hannon, 2004; Kirby, 2004; Wirsing et al., 2002). One of the main benefits of pre-incubation is that it helps entrepreneurs validate their business idea and assess its feasibility before committing significant resources to it. Pre-incubation programs allow entrepreneurs to test their ideas in a safe and supportive environment without the pressure of having to immediately generate proceeds or raise capital. This validation process helps entrepreneurs refine their business model and identify potential weaknesses or obstacles to success (Shaukat & O'Connor, 2021).

Pre-incubation differs from incubation and acceleration in terms of its scope and duration (Hannon, 2004; Kirby, 2004; Wirsing et al., 2002). Unlike incubation, which typically involves providing startups with resources and helping them grow and scale their business, pre-incubation focuses on validating the business idea and developing a minimum viable product (MVP) (Foss et al., 2019). Please refer to Figure 2 for a synoptic comparison of an incubator and a pre-incubator.

![Figure 2: Differences and similarities of an incubator and a pre-incubator](image)

**Source:** Deutschmann (2007)

Similarly, pre-incubation is a shorter-term program than acceleration, which typically lasts several months to a year and involves intensive mentoring and support to help startups scale their business and attract investment (Del Giudice & Maggioni, 2019;
Jang et al., 2018). It also differs from acceleration in terms of commercialization and traction.

Thematic pre-incubation is a specialized form of pre-incubation that focuses on startups in specific industries or sectors. Thematic pre-incubation programs provide startups with resources and support tailored to their specific industry or sector, which can help them develop their product or service more effectively (Foss et al., 2019). For example, a pre-incubation program focusing on sustainable energy startups can provide specialized mentorship, funding opportunities, and networking events relevant to this specific industry (Almpanis, Tsipouras, & Mavridis, 2017). As a case in point, the CleanTech Open is a pre-incubation program specifically designed for clean technology startups, providing them with resources and support to help them develop and commercialize their products (CleanTech Open, n.d.). The same goes for ATOM, which exclusively services for game development industry (Kepenek, 2018), the research site of this study.

Research suggests that pre-incubation programs can benefit early-stage startups significantly, including improved access to resources, mentoring, and networking opportunities (Foss et al., 2019; Jang et al., 2018). Pre-incubation programs have been shown to be effective in developing entrepreneurial skills and increasing the success rates of startups. Awan & Sultan (2022) conducted a case study in Pakistan and found that pre-incubation activities significantly impacted the success of startups. It has been proven with studies in various contexts, such as Saudi Arabia (Khorsheed, Al-Fawzan & Al-Hargan, 2014), Yemen (Hibah & Alhakimi, 2021), Egypt (Shalaby, 2020), Brazil (Frizzo et al., 2018), Turkey (Kepenek & Eser, 2018), the Netherlands (Custers, 2019), Ireland (Stephens & Onofrei, 2012), Italy (Pellegrino & Ponsiglione, 2019), and Wales (Voisey, Jones, & Thomas, 2013). These studies suggest that pre-incubation programs significantly benefit early-stage ventures in developing their entrepreneurial skills.

Pre-incubation may be particularly beneficial for agile and mobile game development teams, given these industries’ fast-paced and highly competitive nature. Agile development is a project management methodology emphasizing iterative and collaborative development, focusing on delivering a working product quickly (Boehm & Turner, 2005). As stated above, mobile game development teams face unique
challenges, such as rapid technological advancements and changing consumer preferences, which require them to be agile and responsive to change (Lukka, 2017).

In conclusion, pre-incubation is a substantive concept that is important in developing successful startups. Pre-incubation programs are effective in helping entrepreneurs to refine their business ideas and develop the skills necessary to successfully launch and grow a business. Pre-incubation programs are particularly beneficial for teams, including agile teams and mobile game development teams. In this respect, there needs to be more research on the impact of pre-incubation in the context of mobile game development team effectiveness.

2.4. Bridging the Gap

This section comes to the point by drawing attention to the research gap. As mentioned above, several studies have investigated the effects of incubation programs on team effectiveness and performance, indicating that incubation programs can have positive effects on the performance of startups (Awan & Sultan, 2022; Custers, 2019; Del Giudice & Maggioni, 2019; Frizzo et al., 2018; Hibah & Alhakimi, 2021; Kepenek & Eser, 2018; Khorsheed et al., 2015; Shalaby, 2020; Stephens & Onofrei, 2012; Voisey et al., 2013). In addition to these, several other studies have examined the impact of pre-incubation on various aspects of startup development. Overall, while there is limited research on the impact of pre-incubation on team effectiveness, the existing studies suggest that pre-incubation programs may be beneficial for developing entrepreneurial competencies, promoting team learning, and enhancing team formation, which can contribute to improved team effectiveness. All the same, these studies are on the general impact of pre-incubation on development of entrepreneurial skills rather than on mobile game development team effectiveness.

As for mobile game development team effectiveness, but without the impact of pre-incubation this time, there is less research, provided that we exclude circumstantial evidence on general software development, such as the studies of Cramton and Webber (2005), Endriulaitienė and Cirtautienė (2021), Rajendran (2005), Shammeem et al. (2018) or Stevens (1998). Even if not on the mobile game development team effectiveness specifically, as far as I reached, there is one master’s thesis (Tu, 2018) that explores the factors that affect mobile game development team effectiveness in an
organizational context with a single case study. All the same, these studies on mobile game development team effectiveness but not on the impact of pre-incubation on this phenomenon.

As it is seen, there needs to be direct empirical evidence about the impact of pre-incubation on mobile game development team effectiveness, which is an important research gap that needs to be addressed.

The first rationale for studying the impact of pre-incubation on mobile game development team effectiveness is to help identify the specific components of pre-incubation programs that contribute to the success of mobile game development teams. Examining this will provide insights into how to design and deliver a thematic pre-incubation program that better meets the needs of mobile game development teams. This can ultimately lead to improved outcomes for the mobile game industry and greater economic growth. The second rationale is to identify the role of game-thematic pre-incubation in the broader entrepreneurial ecosystem. By understanding how a game-thematic pre-incubation program fits into the larger context of startup support, decision-makers can gain a comprehension of how different types of support programs work together to promote entrepreneurial success. The third rationale for conducting this study is that, as detailed in Section 1.3, the increasingly remarkable share of the mobile game development industry in business investments, successful exits, and export figures is quite noteworthy.

Overall, there is a clear need for more research on the impact of pre-incubation on mobile game development team effectiveness.
CHAPTER 3

METHODS

This chapter justifies the research methodology and research design dwelling on the adopted methodology and elaborates on the data collection process, data analysis procedures, research constraints, and trustworthiness (Glesne, 2016; Guba, 1990, Ed.; Lincoln & Guba, 1986; Neimeyer, 1993; Potter, 1996), i.e., the social constructivist analog to quality criteria for a pure qualitative inquiry.

3.1. Research Methodology

This study is a pure qualitative inquiry, i.e., data collection and analysis are conducted exclusively through qualitative methods (Nassaji, 2020) and based entirely on innumerable data (Maxwell & Reybol, 2015). According to Johnson and Turner (2003, p. 297): “Pure qualitative research is defined as exploratory, inductive, unstructured, open-ended, and naturalistic.” The selection primarily turned upon the research question, which determines the optimal research methodology (Marshall, 1996; Sackett & Wennberg, 1997; Yin, 2009), particularly but not exclusively. Regarding this, Creswell suggests that the qualitative methodology is preferable if the research bears the following qualification if (1) the research question commences with ‘how’ or ‘what’ instead of ‘why’; (2) the investigation of individuals is in their natural setting; (3) a comprehensive and all-encompassing perspective of the topic holds, rather than a mere focus on individual variables in isolation; (4) variables of interest are not readily apparent and particularly in complex phenomena where the researcher initially cannot ascertain which variables are significant; (5) if the data are prone to an inductive, recursive and interactive analysis; (6) inclination to present the study is in a literary manner, instead of numerical; and (7) the researcher is a key instrument (2013). This study meets these criteria.
To analyze and depict data in qualitative research, Brady and Loonam (2010) proposed the use of entity-relationship diagramming (ERD) (Chen, 1976), a technique used to model data from the field of systems analysis. Figure 3 delineates the entire research process in a nutshell as an ERD.

![Research process diagram](image)

**Figure 3:** Research process diagram  
**Source:** Auto-depiction

### 3.1.1. Pragmatist Perspective

This inquiry holds a pragmatist perspective, which conduces the researcher toward selecting the appropriate research methodology and research design to address its specific research question (Kaushik & Walsh, 2019) by enabling flexibility in research methods and approaches, allowing researchers to tailor their research to the specific needs of their participants and contexts (Guba, 1990) rather than adhering to a rigid set of rules or procedures (Reichertz & Rorty, 2003). Reichertz and Rorty suggest that pragmatism encourages researchers to focus on the practical consequences of social
phenomena rather than trying to uncover an objective reality independent of human experience rather than assuming that there is a single ‘correct’ way to understand social phenomena (2003). This perspective also can inform how researchers interpret and analyze their data by emphasizing the importance of contextual and situational factors in shaping the meanings and interpretations by helping researchers better understand their participants' perspectives and experiences (Rosenbaum, 2017). Last but not least, a pragmatist stance can help researchers be more reflective and self-aware by accentuating the role of interpretation and subjectivity in social research and encouraging researchers to be transparent about their biases, assumptions, and perspectives (Reichert & Rorty, 2003).

In this respect, together with the characteristics of qualitative research aforesaid (Creswell, 2013), from a pragmatist perspective to determining the research methodology (Denzin, 1970), Smaling specifies eight impactive dimensions:

“Besides paradigmatic and general methodological factors there is room for several pragmatic factors which influence the choice of a research method. This pragmatic room can be structured by eight dimensions, viz.: the researcher, the concrete object of study, the research situation, the research question, the research goal, relevant audiences, conditions and circumstances, and the time-dimension.” (Smaling, 1994, p. 233).

These eight dimensions that construct the ‘pragmatic room’ have rather a lot of impact on settling upon methodological choices.

3.1.2. Non-Deductive Reasoning

The pragmatist paradigm, which offers the chance to produce a “properly integrated methodology for the social sciences” (Morgan, 2007, p. 73), espouses non-deductive reasoning (Nelson & Evans, 2014), the underpinning noesis of this inquiry. That is to say, the construction of the findings is tied to pre-existing assumptions and frameworks (Granqvist, Kallio & Nissilä, 2017), the conceptual framework, ATEM herein, which generates a way to bridge the ‘conceptual leap’ (Klag & Langley, 2013) from empirical data to the theoretical idea.
In particular, induction and abduction are two important strategies for making inferences from incomplete information (Esposito et al., 2000). Hilpinen (2007) based the same opinion on Aristotle that induction and abduction are the two non-deductive inference forms. Regarding these two modes of reasoning, what sets abduction apart from a purely inductive form of inference is that the observed phenomenon neither contains an explanation in itself nor constitutes a new case of an already known general rule but is rather a combination of both (Vila-Henninger et al., 2022). To put a finer point on it, inductive reasoning involves forming generalizations based on data, while abductive reasoning involves making inferences that best explain hidden phenomena observed in the data (Rey, 2010).

Many authors argue that the type of reasoning used in qualitative research should not be referred to, the straight of it, underrated as inductive reasoning but rather it should be referred to as non-deductive reasoning since the previous perspectives serve as the starting point for empirical analysis (Lewis-Beck, Bryman, & Liao, 2003; Bryman, 2016). In this sense, qualitative research is non-deductive by nature and has a solid connection to the epistemological stance of interpretivism (Elin & Amanda, 2020), where the empirical findings of the research entangle the theoretical understanding of the phenomena. Dovetailing with this study, where the inquiry stems from a conceptual framework and proceeds along an inductive approach, Saunders, Lewis, and Thornhill (2009, pp. 145) articulate the following exposition, which well-suits this research:

“Where you are collecting data to explore a phenomenon, identify themes and explain patterns, to generate a new or modify an existing theory which you subsequently test through additional data collection, you are using an abductive approach.”

As it is understood, there is an abductive slant herein. Furthermore, it is imperative to mention that ‘inductive’ per se is an inadequate label for the mode of the reasoning behind this study. In that, it implies naive empiricism that ignores the inevitable contribution of pre-existing accumulation of knowledge to emerging insights, the role of envisaging, and even the imagination (Klag & Langley, 2013), which means that induction represents just one way of the entire process. Even the research question and
the methods that enquire into those questions are subject to personal preferences, dispositions, and available actions (Mason, 2017). Based on this, to redenominate the term right, non-deductive is the seemlier mode of reasoning (Flach, 2002). Abductive reasoning, affiliated with Peirce (Harstshorne, Weiss & Burks, 1958, Eds.), is a pattern of synthetic inference that identifies significant underlying patterns within specific phenomena to understand the complexity (Råholm, 2010). It enables an iterative and recursive (Agar, 2010) process driven by the researcher's intention to generate socially practical knowledge (Feilzer, 2010), i.e., a transformative praxis (Thambinathan & Kinsella, 2021), which corresponds to the policy recommendations of this study. Therefore, considering the abductive slant as well, I found it more accurate to define the reasoning behind this qualitative research with the umbrella term, i.e., non-deductive, instead of inductive.

3.2. Research Design

Ragin defines research design as

“Research design is a plan for collecting and analyzing evidence that will make it possible for the investigator to answer whatever questions he or she has posed. The design of an investigation touches almost all aspects of the research, from the minute details of data collection to the selection of the techniques of data analysis.” (1994, p. 191).

Rigorous research entails synthesizing the concepts of ontology, epistemology, and methodology and then applying a suitable research design for the embraced approach (Cuthbertson, Robb & Blair, 2020), which brings about ideational integrity. In accommodation to the embraced paradigm-driven methodology, a critical realist ontological (Bhaskar, 1975) and an interpretative epistemological (Habermas, 1967) modalities are the requisite lenses to ascertain the research design.

3.2.1. Interpretative Phenomenology

This study is built on phenomenology, to be more precise, interpretative phenomenology, and to be further precise, its Heideggerian exegesis. A qualitative phenomenological research design provides deep rich descriptions, understanding, and meanings from multiple participants about phenomena (Creswell, 2013). Above all,
the pragmatist perspective positions “phenomenology as a practical and reflective method, not in phenomenology as professional philosophy” (van Manen, 2007, p. 23). In other words, what is needed to conduct a qualitative inquiry is to have a ‘phenomenological attitude’ (Husserl, 1913/1931), i.e., experiencing “not just doing phenomenology but becoming phenomenological” (Conklin, 2014, p.116).

Here is a fortiori analysis. The objective of interpretative phenomenological analysis (IPA), a method that emphasizes the researcher’s interpretation of the data for the sake of reflexivity, is to thoroughly explore how participants interpret their personal and societal milieu with a primary focus on the meanings of their particular experiences, situations, and conditions (Smith, Flowers & Larkin, 2009) for the sake of credibility (please refer to Section 3.6.1). Phenomenology is one of the earliest attempts to mark a significant shift from the positivist paradigm toward qualitative research by emphasizing the importance of the subjective nature of human experience. (Boedeker, Jr., 2005). Even though there are different approaches to conducting a phenomenological study (Dowling & Cooney, 2012), all approaches have in common a concern with the lived experience (Cresswell, 2016) and have their roots in the diverging perspectives of either Husserl or Heidegger (Mitchell & Cody, 1993). To put it simply, while phenomenology describes phenomena according to Husserl, for Heidegger, it describes how they are interpreted (McConnell-Henry, Chapman & Francis, 2011). Husserl focused on the direct encounter with experience, whereas Heidegger focused on comprehending the process of experiencing (Koch, 1995). Heidegger claimed that the study of human activities should not remain limited to isolating them from their surrounding world; rather, such activities should be understood through their interpretation within the context of their environment and relationships with others (1988) as “a fusion of horizons” (Gadamer, 1960/1989, p. 388). Heidegger postulated that there is no such thing as interpretative research, free of judgment or influence of the researcher (McConnell-Henry, Chapman & Francis, 2009). Accordingly, he rejected Husserl’s ‘phenomenological reduction’ (1913/1931) by arguing that a researcher cannot separate description from her own interpretation.

Charmaz (2014) argues that a robust theoretical framework should be developed to guide their analysis and interpretation of the data, which this research tried to explore. To that end, Larkin, Thompson, and Morrison (2012) submit that IPA can provide a
rich and nuanced comprehension of the natural surrounding by emphasizing the meaning and significance of those experiences from the participant's perspective in their natural settings.

After all, dwelling on this treatment of phenomenology, preconceptions, which are inevitable factors, are considered acceptable and should be investigated and incorporated as an inseparable part of the research process. By referring to the pragmatic dimensions of conducting qualitative research through a critical realist ontological and interpretative epistemological lens, the Heideggerian standpoint aligns with the elements of this inquiry. This perspective, consequently, constitutes the research design.

3.2.2. Conceptual Framework

A conceptual framework is a set of broad ideas and principles taken from relevant research fields and used to structure a subsequent presentation (Reichel & Ramey, 1987). According to Creswell (2014), the conceptual framework serves as a map that guides the research process, including data collection, analysis, and interpretation, helping researchers organize their thoughts and develop a clear understanding of the study's underlying assumptions and theoretical perspective. It helps identify key themes and patterns in the data (Guest, MacQueen, & Namey, 2012), accommodating the research objective with the flexibility and coherence of the research, which all emanate from conceptual frameworks (Leshem & Trafford, 2007). What matters herein is that each concept of a conceptual framework has an ontological or epistemological role, providing an interpretative approach to social reality (Jabareen, 2009). Chamberlain articulates

"Interpretive research commonly proceeds along one of two lines. As the first option, a conceptual framework is invented or obtained from the literature, and imposed on the research area, allowing the researcher to approach it on logically coherent ground and with the key terms defined in advance. In the second option, the researcher goes into the field with an open mind, and reactively receives the “lay” concepts used by the research subjects.” (2006, pp. 293).
This inquiry makes for the former line in line with this remark since it expediently adopts a conceptual framework, i.e., ATEM. The data collection procedure expands upon ATEM, elicited from the team effectiveness literature. Indeed, this framework was the literal motive to conduct a non-deductive inquiry.

Miles and Huberman (1994) dwell on the conceptual framework as

“A conceptual framework explains, either graphically or in narrative form, the main things to be studied -the key factors, constructs or variables- and the presumed relationships among them. Frameworks can be rudimentary or elaborate, theory-driven or commonsensical, descriptive or causal” (p. 18).

When viewed from this aspect, ATEM is an elaborate, theory-driven, and causal framework. As elaborated in Chapter 2.1, the model (Strode et al., 2022) introduces impact mechanisms on prespecified components originating from previous research (Salas et al., 2005). The latter is a safer bet for grounded theory (Corbin & Strauss, 2014), where an inductive expedition from the empirical data to a theory holds. Wimpenny and Gass (2000) argue the difference between these two research design patterns in terms of the focus of the interviews, where, in phenomenology, the focus is on exploring the participants' experiences, while in grounded theory, on generating theoretical concepts and categories based on the collected data.

Hereof, Figure 4 delineates an overview of the phenomena under research as an ERD. I want to emphasize that this overview is a simplified model of reality. Section 3.5 provides further explanation on a theoretical basis.
3.2.3. Unit of Analysis, Unit of Observation, Level of Analysis

Determining these units in advance of data collection helped me focus on the relevant variables of interest. The unit of analysis, the entity for which data is analyzed (Sedgwick, 2014), is the mobile game development teams incubated in ATOM. The unit of observation, the entity from which data is collected (Sedgwick, 2014), is ATOM managers and participant members of mobile game development teams. The members partake of representatives, and all are the sole or co-founders of their teams in each interview, and each focus group has at least one member in this status. The level of analysis, a distinct concept from the unit of analysis (Yurdusev, 1993), is meso-level, which refers to the intermediary level of social order such as movements, associations, groups, formal organizations, or social institutions (Sallum Jr, 2005) or the analysis of processes in an ecosystem. The level of analysis in this study, where we focus on the impact of pre-incubation services on team effectiveness, is at the meso-level since this research (1) focuses on groups in an organization, i.e., the mobile game development teams for which ATOM provides pre-incubation services, and (2)
process analysis is inherently a meso-level analysis (Liljenstrom & Svedin, 2005, Eds.).

3.3. Data Collection

As mentioned in Section 3.2.2, the conceptual framework can shape the data collection process in qualitative research (Creswell, 2014). A conceptual framework can help the researcher identify gaps in the existing literature or potential study limitations (Creswell, 2013; Miles & Huberman, 1994). Guba and Lincoln (1994) highlight the role of the conceptual framework that provides a lens through which researchers can view the research topic and guide decisions about what data to collect and how to collect it. It also allows the researcher to organize and interpret the data within a theoretical framework and to make connections between the research findings and existing literature in the field. (Merriam & Tisdell, 2016; Schatzman & Strauss, 1973).

3.3.1. Research Sub-Questions

The research question functions as the overarching focus by guiding the development of sub-questions that explore different aspects of the research question, whereas the sub-questions are designated to address specific components of the research question and provide a framework for the data collection and analysis process (Babbie, 2016). I would also like to point out that these are not interview questions but guiding questions that examine the research problem and bring about some idea of the scope of the study (Badenhorst, 2010). While a conceptual framework may not be directly communicated to participants in technical terminology, it informs how data is collected and analyzed. By guiding the research process, the conceptual framework ensures that the data collected is relevant to the research questions and aligns with the theoretical perspective of the study. In conformity with this, research sub-questions (RQ) are not interview questions as are but their constituents.

Based on this, the conceptual framework of this research formalized the data collection method thanks to its three coordinating mechanisms on its five components, as presented in Table 2.
Table 2: Research sub-questions (RQ)

<table>
<thead>
<tr>
<th>#</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How does ATOM affect shared leadership among mobile game development teams?</td>
</tr>
<tr>
<td>2</td>
<td>How does ATOM affect peer feedback within and between mobile game development teams?</td>
</tr>
<tr>
<td>3</td>
<td>How does ATOM affect the redundancy of mobile game development teams?</td>
</tr>
<tr>
<td>4</td>
<td>How does ATOM affect adaptability to changing conditions of mobile game development teams?</td>
</tr>
<tr>
<td>5</td>
<td>How does ATOM affect the team orientation of mobile game development teams?</td>
</tr>
<tr>
<td>6</td>
<td>How does ATOM use the shared mental models mechanism?</td>
</tr>
<tr>
<td>7</td>
<td>How does ATOM use the communication mechanism?</td>
</tr>
<tr>
<td>8</td>
<td>How does ATOM use the mutual trust mechanism?</td>
</tr>
</tbody>
</table>

3.3.2. Research Site

Accessibility, suitability, cultural and social context, the physical and logistical characteristics of the site, as well as the availability of appropriate participants are all considerable issues in data collection (Gwede et al., 2012; Johnson & Smith, 2019; Kilburn & Switzer, 2013; Morse, 2015b; Smith & Jones, 2018). Above all, Creswell emphasizes the importance of selecting a research site relevant to the research question (2013). Given the research object, mobile game development team effectiveness, I would have selected an appropriate research subject. To that end, I decided on ATOM as the research site of this study, which is nothing short of convenience selection (Lavrakas, 2008). For participant selection, please refer to Section 3.3.4.

Established in 2008 by Middle East Technical University (METU), ATOM is Turkey's first thematic pre-incubation center. To clarify the ‘thematic,’ such incubators bolster start-ups in specific sectors and offer tailored services specific to these sectors, such as mentorship, networking opportunities, training, and access to funding (European Commission, 2021). According to the National Business Incubation Association (NBIA) definition:
Thematic incubation refers to the focus of the incubator on a specific industry, technology, or market segment. This approach allows the incubator to offer more targeted services and expertise to its clients, helping them to overcome the unique challenges of their particular industry or sector." (n.d.)

That definition applies to thematic pre-incubation as well. Since its inception, ATOM’s primary goal has been to promote entrepreneurial activities and contribute to the growth of the Turkish video gaming industry. Additionally, ATOM aims to train a skilled workforce in this field (Kepenek, 2018). Over the years, ATOM has played a crucial role in the growth of Turkey's animation and game development industry. Since 2015, the center has been experiencing a period of great success. This success can be attributed to ATOM's myriad of facilities, such as project management support, preparation for game publishing, and comprehensive mentoring workshops, all of which have led to an increase in the number of developers and a rise in the industry's global significance (“ATOM celebrates its 10th anniversary”, 2018). Albeit out-of-date, the center has hitherto supported more than 135 teams, more than 1600 developers and developer candidates, facilitated the development of more than 600 games, provided more than 950 hours of education and a mint of financing to the incubatee game development teams, and carried out a substantial export figure (ATOM – Animation Technologies and Game Development Center, n.d.).

3.3.3. In-Depth Interviews

The interpretative methodology this study embraces involves profoundly exploring subjective experiences and meanings, focusing on how individuals make sense of their world (Kvale, 1996). To that end, in-depth semi-structured interviews are a convenient method of data collection in IPA, allowing the interviewer to ask open-ended questions to encourage participants to reflect on their experiences so as to provide rich, detailed responses (Smith et al., 2009) and the chance to explore issues that arise spontaneously (Berg, 2009). They offer versatility and flexibility, allowing interviewers to vary the order and wording of the questions (Power et al., 2010) and tailor follow-up questions to suit a diverse range of potential interviewee responses (Kallio et al., 2006).

Due to its benefits, I decided to collect empirical data using semi-structured interviews, but priorly, one-on-one interviews with one leader from each team. Fontana and Frey
provide insight into the rationale for starting research interviews with experts, highlighting the benefits of their expertise and credibility in developing trust, establishing rapport with other participants, and guiding subsequent data collection. For this purpose, I started to interview managers successively.

Pilot studies play a vital role in ensuring a well-designed study (Creswell, 2013) by refining research instruments, foreshadowing possible research issues (van Teijlingen & Hundley, 2002), and hereby enhancing the chances of achieving positive outcomes (Sampson, 2004). After updating the interview guide that I had prepared based on the conceptual framework, following the feedback and suggestions from my advisor, managers in the industry, and my thesis jury members successively, I conducted pilot interviews with team leaders in my immediate circle to fine-tune the interview questions accordingly. For this, I preferred the participants in the pilot study to be as closely aligned as possible with the prospective participant profiles I will be interviewing in terms of their current job positions, professional experiences, and educational backgrounds so that they can better represent my actual participants. Afterward, I discussed the experiences of my pilot participants regarding the interviews and received feedback regarding the interview questions. Based on this feedback, I made some changes to the sequence of the questions rather than the content, thus preparing a more seamless interview process.

Thanks to convenience selection, I first communicated with an ATOM manager within reach. Then I continued interviews with the other two managers thanks to snowball selection through the agency of the first manager. In consultation with all managers and coordinators of the center, we agreed on a list of ten teams in total so as to ensure maximum diversity (Patton, 1999) in terms of participant and team characteristics by combining snowball and intensity selection methods. Coordinators of the center oriented me to prospective interviewees. Having said that, circumstances altered cases, more precisely, turned for the better during the interview period. Subsequent to manager interviews, I discerned that there are incubatee teams with more than one team leader. On top of it, such teams were among the managers' recommendations to interview, seeing that they would have helped enrich the empirical data owing to their different dynamics and avail diversity. Moreover, the team leaders of two teams falling into this class are also co-founders; in contrast, the other two teams have sole founders,
and the other participants are only team leaders, which yields additional diversity. So, I shifted the helm to focus groups for those teams and interviewed all their team leaders in the same session.

Morgan (1997) argues that combining these methods can enhance the validity and reliability of the data collected with some advantages over individual interviews since combining these methods can provide a more naturalistic setting for participants to share their opinions and experiences and allow for exploring group norms and dynamics. In other respects, Denzin and Lincoln (2011) draw attention to group dynamics and the potential for bias. Group dynamics can sometimes overshadow individual voices, and it may be more challenging to ensure that all participants have an equal opportunity to contribute to the discussion (Morgan, 1997). In retrospect, I noticed the implicit naturalistic setting and peculiarities of one-on-one interviews in focus groups regarding group dynamics, especially in teams with solo founders.

The importance of an ‘in-depth’ interview proceeds its ‘generative’ feature; “in-depth interview is generative in the sense that new knowledge or thoughts are likely, at some stage, to be created” (Legard, Keegan & Ward, 2005, p. 142). I asked additional questions depending on the course of the interviews. From my standpoint, unexplored avenues of thought surfaced in this way. Speaking of this, O'Reilly and Parker (2013) suggest that the researcher should focus on data adequacy instead of data saturation, i.e., the point at which new data collection no longer yields substantially new information or insights (Guest, Bunce & Johnson, 2006). Morse (1995) bears out this argument as data saturation is independent of the number of participants since the number of interviews required for saturation may vary depending on the research question, sample characteristics, and other factors (O'Reilly & Parker, 2013). After 13 in-depth interviews conducted pursuant to best practices (Kvale, 1996), I figured out that the empirical data collected was adequate, i.e., rich, diverse, and of sufficient depth to answer the research question. For interview questions, please refer to Appendix B.

Due to online interviews offer more barriers to building up trust between researchers and participants (Mwambari, Purdeková & Bisoka, 2021) and may limit the researcher's ability to pick up on nonverbal cues, which can be important in
understanding the participant's perspective and experience (Orgad, 2019), I went for face-to-face interviews as my personal preference. The first and the twelfth were the only two online interviews since circumstances so demanded, i.e., the participants were away. I audio-recorded face-to-face and video-recorded online interviews with the consent of the participants. Please refer to Section 3.3.5 for research ethics and Section 3.4 for post-recording works.

### 3.3.4. Recruitment

I preferred to entitle this section as ‘recruitment’ instead of ‘sampling’ since qualitative research does not attempt to establish representativeness, instead selects individuals who have information about the phenomenon under research with the purpose of gaining a deep understanding of it rather than making generalizations to a larger population (Creswell, 2013; Patton, 2015). In other words, statistical generalization is not aimed at qualitative research (Yin, 2018). To this respect, sampling is not an applicable term in this study as for me. Regarding generalization and transferability, please refer to Sections 3.5 and 3.6.2.

In tune with the purposeful selection (Creswell, 2013; Patton, 2015) approach, I got through to three ATOM managers and 18 participants from 10 teams, i.e., 13 interviews in total. The selection method employed combines (1) snowball selection, “a random sample of individuals is drawn from a given population” (Goodman, 1961, p. 148), (2) convenience selection (Plano Clark & Creswell, 2015, p. 235), and (3) intensity selection to “look for rich cases” (Mertens, 2005, p. 321). According to Patton, all selection methods adopted in qualitative research are purposeful as a matter of course (2015).

I deliver an ordered list of participant profiles with pseudonyms in lieu of names (Weaver-Hightower, 2018) in Table 3. Pseudonyms that stem from Zodiac signs are for the sake of the participant privacy, confidentiality and anonymity. Please refer to the next section for research ethics.
### Table 3: Participant profiles

<table>
<thead>
<tr>
<th>Interview order</th>
<th>Pseudonym</th>
<th>Profile</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aries</td>
<td>Manager</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Taurus</td>
<td>Manager</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Gemini</td>
<td>Manager</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Cancer</td>
<td>Team</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Leo</td>
<td>Team</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Virgo</td>
<td>Team</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Libro</td>
<td>Team</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Scorpius</td>
<td>Team</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Ophiuchus</td>
<td>Team</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Sagittarius</td>
<td>Team</td>
<td>3</td>
</tr>
<tr>
<td>11</td>
<td>Capricornus</td>
<td>Team</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Aquarius</td>
<td>Team</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Pisces</td>
<td>Team</td>
<td>1</td>
</tr>
</tbody>
</table>

### 3.3.5. Research Ethics

I conducted research per ethical guidelines and principles and obtained approval from METU Human Subjects Ethics Committee (HSEC) approved this research as of December 1, 2022, as required. Immediately after I supplied the necessary information about the research at the onset of each interview, I duly obtained explicit and voluntary consent from interviewees via underwritten METU HSEC informed consent forms to participate in the research based on a clear understanding of the research’s purpose, procedures, and benefits.

Denzin and Lincoln (2011) emphasize the importance of addressing power dynamics and engaging in reflexivity to ensure that the data collected through interviews are valid, reliable, and meaningful. Power dynamics, in this context, refers to how power relations between the researcher and participants influence the research process and outcomes (Charmaz, 2006). In accordance with this, I took great care to recognize and address power imbalances, establish trust and rapport, and be transparent about the research. I was attentive to conform to reflexivity (Coffey & Atkinson, 1996; Yardley
& Dornan, 2012) by acknowledging and examining my own values, biases, and assumptions that may influence the research process and outcomes.

Bearing participant privacy, confidentiality, and anonymity (Braun & Clarke, 2013) in mind, I purposively do not disclose that a manager is former or currently in charge; or do not let on about a team in terms of incorporation, invested, member count, or gender distribution to keep them completely incognito. I treated data in any form provided by participants and others as confidential and anonymized. The only person authorized to access confidential information is my thesis supervisor. I abided by debriefing and follow-up (Yardley & Dornan, 2012) by providing participants with opportunities to debrief and discuss their experiences and offering appropriate follow-up and referrals if necessary.

3.4. Data Analysis

Data analysis is the process of making sense of the data collected (Merriam, 1998) and is essential to identify patterns, themes, and relationships among the data (Creswell, 2013; Miles, Huberman & Saldaña, 2014). “There is no one 'correct' way to analyze qualitative data, as there are many different methods that can be used depending on the research question, data, and theoretical framework.” (Flick, 2018, p. 2). Content analysis (Krippendorff, 2013), discourse analysis (Gee, 2014), narrative analysis (Riessman, 2008), phenomenological analysis (Smith & Osborn, 2015), and thematic analysis (Braun & Clarke, 2019b) are among various data analysis methods.

In accordance with its design pattern, this study embraces a combination of IPA, an interpretative conceptualization of phenomenological analysis (please refer to Section 3.2.1), and reflective thematic analysis (RTA) (Braun & Clarke, 2019a), a reflexive conceptualization of thematic analysis with a special emphasis on credibility (please refer to Section 3.6.1). Having considered that a critical aspect of data analysis is reflexivity, which involves reflecting on the researcher’s positionality, biases, assumptions, and preconceptions and can be achieved through various techniques, such as memoing, journaling, and peer debriefing (Finlay, 2002). All the more so, it is more critical for a qualitative inquiry buys into an interpretative approach. Braun and Clarke (2019a) provide a guide for RTA to identify and manage biases and develop more nuanced and accurate interpretations of the data. IPA and RTA are
complementary methods that can be used together for an extensive qualitative data analysis. While IPA emphasizes the individual's subjective experience, RTA focuses on the relational aspects of individuals' experiences and how they are influenced by broader social and cultural factors (Holloway & Galvin, 2016). Using both methods together provided a more comprehensive and nuanced understanding of the data than using either method alone (Llewellyn-Beardsley et al., 2017).

Even though there are different approaches to outlining the data analysis process (Braun & Clarke, 2019a, 2019b; Corbin & Strauss, 2014; Creswell, 2013; Flick, 2018; Miles et al., 2014; Smith et al., 2009), my approach observes the outlines of IPA and RTA that overlap in essence to a great extent and intensifies the data analysis process in six phases: (1) preparation, (2) familiarization, (3), interpretative coding, (4) reflexive coding, (5), interpretative theming, (6) reflexive theming, on my entitlement. I drew on coding best practices, harnessing Creswell (2013), Miles & Huberman (1994), and Saldaña (2015) to a considerable extent. After the first stage was completed, the process was not linear tel quel but back and forth, as a matter of course.

3.4.1. Preparation

This phase introduces the steps to organize the data to facilitate analysis, including transcription, consolidation of memos, and data cleansing. I only translated the citable passages from the corpus once the entire coding process was completed.

As mentioned in Section 3.3.3, two interviews were online, that is, recorded as video, while eleven were face-to-face, recorded as audio. For audio records, auto transcripts, transcribed simultaneously during the face-to-face interviews by the app I used were also available, yet hard to read since words were intertangled and even transcribed falsely. So, I could make use of them just for pre-coding (Layder, 1998). I would like to interpose here that this was neither lean coding as described by Creswell (2013) nor by Lichtman (2013). I consolidated those codes with my hand-taken notes during interviews and created initial memos on my first impressions, before listening to the recording. I listened to its record immediately after an interview. For some days we have more than one consecutive appointment. I listened to all recordings of those days one after another, but not transcribed. The first listenings and my pre-codes on my
initial memos were just to ‘feel’ the data in the nick of time, i.e., not to ‘alienate’ from the content.

Subsequent to all interviews being completed, I meticulously performed intelligent verbatim manual transcription (Harris & Chilvers, 2011; Morse, 1994), with pauses and plays. Intelligent verbatim transcription involves editing the transcript to remove false starts, repetitions, and other disfluencies in speech while retaining the meaning and intent of the speaker. Roulston (2010) emphasizes the importance of hand-transcribing, or manually transcribing, interviews to fully engage with the data and to allow for greater control over the transcription process. I removed the repetitions, disfluencies, and confabulations, and sentenced the dangling expressions in the meantime. Given the constructivist (Silverman, 2017) and interpretivist perspectives on transcription (McMullin, 2021), I conceived instantiations like speech pauses, repetitions, false starts, shuffles, or peculiar to focus group interviews, talking over one another, in order to find clues about power dynamics of the team and created memos even so. Albeit time-consuming, I reaped its pointed rewards. The data cleansing process was eventuated in 141 pages of transcription. I shared this comprehensible text with my thesis supervisor for intercoding.

3.4.2. **Familiarization**

I perused the corpus two times and thought about it to become familiar with the content by noting my initial impressions as memos. After feeling immersed enough, I started lean coding on this corpus, as Creswell (2013) suggests

> “Beginning researchers tend to develop elaborate lists of codes when they review their databases. I proceed differently. I begin with a short list, “lean coding” I call it—five or six categories with shorthand labels or codes—and then I expand the categories as I continue to review and re-review my database. Typically, regardless of the size of the database, I do not develop more than 25–30 categories of information, and I find myself working to reduce and combine them into the five or six themes that I will use in the end to write my narrative.” (p. 184).
I hereby lean coded the corpus in this manner and tried to create ten distinct codes as short phrases, in keeping with descriptive coding (Miles & Huberman, 1994; Wolcott, 1994) style, bearing ‘conditioning’ in mind. Tesch (1990) clarifies that these codes are “identifications of the topic, not abbreviations of the content. The topic is what is talked or written about. The content is the substance of the message.” (p. 119). The method used at this stage was holistic coding, defined by Dey (1993) as an attempt “to grasp basic themes or issues in the data by absorbing them as a whole rather than by analyzing them line by line” (p. 104) for exploring the data at the first stage. I applied simultaneous coding (Miles et al., 2014), i.e., coded the same passage as more than one ‘topic’ when needed but did not create any in vivo code (Charmaz, 2014) since I tried to create some descriptive categories. Consequently, this stage yielded the following codes: (1) problem, (2) networking, (3) communication between teams, (4) learning by seeing, (5) feedback, (6) autonomy, (7) expectations, (8) know-how transfer, (9) trust, and (10) prestige in descending frequency order. Speaking of frequency, I would like to point out that a theme's importance or centrality does not necessarily reflect the frequency of its appearance within the data (Braun & Clarke, 2006), even at this initial phase. I created analytic free memos (Corbin & Strauss, 2014) to generate elaborated codes in the next two stages. By the way, there was no computer-assisted qualitative analysis program at this phase yet. I completed this attempt on a unified single document and to explore it, i.e., familiarize myself with the data. I realized only when interpretative theming was finished that the topics I extracted at this stage were not exactly the same as my final codes. I would also like to point out that these codes do not literally correspond to any mechanism or component that stems from ATEM. Although I made use of a conceptual framework, I did not use it as a code generator at all, as is the case with structural coding (MacQueen et al., 2008). This attempt was intended to stay exploratory, interpretative, and reflective under the adopted analysis method.

3.4.3. Interpretative Coding

This is the phase in which systematic coding initiated on a computer-assisted qualitative analysis program, MAXQDA. In these premises, interpretative coding driven by the IPA approach corresponds to the actual first-cycle coding, while reflexive coding corresponds to the second-cycle. I did not detach the simultaneously
coded passages into separate codes since I conducted the previous ‘exploration’ phase on a unified document set apart. Instead, I turned over a new leaf and coded each and every word of the corpus under the suggestions (Saldaña, 2015) from scratch, but now deliberatively, thanks to familiarity. I collated codes, organized them into broader categories, and examined their relationships. There were no subcategories at this phase. The codes were still descriptive in word or short phrase form. The first coding cycle ended up with 871 codes in two document groups, namely managers (305) and teams (566), in five distinct categories. The categories were (1) qualifiers, (2) impact mechanisms, (3) expectations, (4) sui generis nature, and (5) N/A, in descending frequency order. The last was to retain “buried treasure” (Saldana, 2015, p. 289) in the next phase, i.e., to explore the unclassified passages in a reflexive manner. During this phase, I refined the codes within the categories (Saldaña, 2015).

My approach to first-cycle coding was proximate to more of an axial coding (Boeije, 2010; Charmaz, 2014; Corbin & Strauss, 2014) but not verbatim et literatim in light of all the concerns mentioned above. Almost the same goes for second-cycle coding, except for one difference: First-cycle coding was more open-ended, whereas the second-cycle rather engaged the findings in the conceptual framework. As stated in Saldaña (2015), Boeije (2010) explains that the purpose of this coding method is “to determine which [codes] in the research are the dominant ones and which are the less important ones ... [and to] reorganize the data set: synonyms are crossed out, redundant codes are removed and the best representative codes are selected” (p. 109). I made much of axial coding precisely because of that, however, by (1) minimizing the formalization of the conceptual framework as much as possible at first for the sake of staying interpretative and (2) sifting the findings through the conceptual framework at the second phase for the sake of reflexivity.

3.4.3. Reflexive Coding

This phase corresponds to second-cycle coding in a reflexive manner driven by the RTA approach. The codes were not still descriptive in word or short phrase form anymore. I recoded the same corpus, but this time, converted the 871 codes of the previous phase into sentences, on purpose. Shorter codes consisting of one or two words have their place in qualitative research (Charmaz, 2014; Miles and Huberman,
1994; Saldaña, 2015); however, there is no definitive answer on whether codes should be shorter or longer; i.e., the length of codes can vary depending on the specific research question, the data being analyzed, and the theoretical framework being used. On the other hand, there are compelling arguments in favor of using longer codes that take the form of sentences since the latter approach can provide greater context and specificity, maintain integrity, and facilitate the data analysis process by avoiding the risk of oversimplification and misrepresentation of data (Fereday & Muir-Cochrane, 2006; Guest et al., 2012). As things stand, I heuristically perceived that this was a cognitive issue and that I should have trodden a path for my convenience. I realized that codes in sentence form helped me see the patterns better, guide the development of categories, and facilitated the identification of overarching themes and concepts. Sentence codes also helped me better convey the data's meaning, tone, emotion, and non-verbal aspects. That is to say, sentence codes became particularly useful since they captured first (1) the complexity and nuances of the data and second, but not least, (2) engaged in reflexivity better, accordingly.

The counts of both codes and categories increased at the end of the second coding cycle. I created 990 codes in the same two document groups, managers (324) and teams (666), but now in eight distinct categories, different from the previous phase. The categories were (1) impact mechanisms of ATOM, (2) qualifiers of the teams, (3) qualifiers of the individual participants, (4) qualifiers of ATOM, (5) expectations of teams from ATOM, (6) sui generis nature of the mobile game industry, and (7) N/A, and (8) sui generis nature of mobile game development, in descending frequency order. Unlike the previous stage, I refined the codes across the categories (Saldaña, 2015) this time and also entitled the subcategories. Figure 4 presents the collapsed list of the second-cycle codes. For the expanded list of the final codes, please refer to Appendix C.
I translated the citable passages from the corpus after completing the second-cycle coding. I handpicked 71 quotes from the corpus and translated them as a reserve but only presented some due to lack of space. Memos I created during the entire coding process, particularly code memos, not only went a long way toward constructing themes but keeping track of the quoted passages.

3.4.5. **Interpretative Theming**

I conducted theming in two phases, as I did for systematic coding. The first phase was more of a hermeneutic approach to the final codes to help me drift away into a more constructivist knowledge creation to evince the latent themes from the phenomena. This section describes how the themes were constructed hermeneutically, free of the underlying conceptual framework.

Themes are patterns of meaning (Braun & Clarke, 2006) in simplest terms. Theming, i.e., thematic analysis, is utilized in qualitative research to organize the data, understand its essence, establish a cohesive narrative of the phenomenon under investigation, and offer insight into the participants' interpretations, experiences, and
viewpoints (Guest et al., 2012). Boyatzis (1998) succinctly explains the term that it “allows the interpretive social scientist’s social construction of meaning to be articulated or packaged in such a way, with reliability as consistency of judgment, that description of social ‘facts’ or observations seems to emerge” (p. xiii). This explanation is immanent of two significant attributes of theming. Theming is, as he alludes to (1) interpretative, by ‘interpretive social scientist’s social construction of meaning’, and (2) reflexive, by ‘reliability as consistency of judgment’. In response, I adopted an amalgam of IPA and RTA as my theming approach.

The rationale behind this is exactly the same as I did in two-cycle coding. I identified patterns and interrelations in the corpus as if I had not had the knowledge of the components and coordinating mechanisms of the conceptual framework with entirely different terminology. The final codes in sentence form helped me develop a narration of the phenomena (Saldaña, 2015) in more of a cause-and-effect relationship, of course, on the assumption that the relations between entities are unilateral. This is nothing short of an abstraction to get rid of the ‘complexity of the phenomena.’ Please refer to Section 5.1 for further details on data model constraints. The final categories resulting from second-cycle coding shed light on my interpretative analysis. As can be seen in a comparison of Table 2 and Appendix C, terminology differs, hereby, I could construct a substantive context.

The central category (Corbin & Strauss, 2014) is the first category, ‘impact mechanisms of ATOM’, which is, ex-ante, in line with the research question. It is worth noting herein that the research agenda may become one-dimensional rather than multi-dimensional if the other expositive categories were underestimated (Clarke, 2005; Dey, 1999). So indeed, keeping this suggestion in mind, I tried to be open to all supportive categories that gave insight into the phenomena under research. The first category along with the second and fourth substantially served as ‘theme generators’, while the fifth category in view of the sixth and eighth acted as more of a datum for policy recommendations, i.e., ‘policy generators’. The second category does not subserve as any direct inference on findings but rather it provides background information about the participants. I bated the seventh category to small talks and irrelevant anecdotes but nonetheless kept them coded somehow over integrity. This phase per se resulted in seven themes, i.e., the interpretive findings (IF). Please refer
to Table 4 for the consecutive themes of interpretative analysis. These themes do not directly correspond to any category, all the same, were constructed on theme generators. Neither do they correspond to any structured component or mechanism of the underlying conceptual framework, unlike the sequent phase. Please refer to Chapter 4 for an elaboration on these themes under reflective findings.

Table 4: The consecutive themes of interpretative analysis

<table>
<thead>
<tr>
<th>#</th>
<th>IF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ATOM explicitly provides mobile game development teams with the opportunity to establish business networking.</td>
</tr>
<tr>
<td>2</td>
<td>ATOM explicitly enables a know-how transfer opportunity between mobile game development teams and the game development community.</td>
</tr>
<tr>
<td>3</td>
<td>ATOM implicitly creates a solidarity environment for mobile game development teams.</td>
</tr>
<tr>
<td>4</td>
<td>ATOM explicitly provides mobile game development teams with mentorship and training services.</td>
</tr>
<tr>
<td>5</td>
<td>ATOM implicitly allows mobile game development teams to gain autonomy and self-awareness.</td>
</tr>
<tr>
<td>6</td>
<td>ATOM implicitly instills work discipline into mobile game development teams.</td>
</tr>
<tr>
<td>7</td>
<td>ATOM implicitly lends prestige to mobile game development teams as of its representativeness.</td>
</tr>
</tbody>
</table>

3.4.6. Reflexive Theming

The second phase of theming delivered the interpretive findings of the conceptual framework. ATEM, as an enabler of the conceptual leap from empirical data to reflective findings, was in charge of refining the interpretive findings in view of theme generators in this phase. It was not merely to convert the latent themes into manifest findings but to assemble those themes into the aforementioned five components by means of the three coordinating mechanisms, where possible. This was more of a reflexive approach that embodied the interpretive findings in reflective findings. What makes this phase reflexive is the explicit and systematic process of reflection by
zooming the interpretative analysis process (Braun & Clarke, 2019; Nowell et al., 2017) that decomposed from the conditioning of a structured framework. Most methodologists concur that coding is, in the words of Glesne, “an idiosyncratic enterprise” (2016, p. 198), in the words of Saldaña, “primarily an interpretive act” (2015, p. 217). ‘Everyone walks at their own pace.’ Performing analysis entirely free from a structured framework, i.e., grounding the process entirely on personal inference, is inherently the Achilles’ heel of an interpretative inquiry. Accordingly, I added another layer to the process to ‘frame’ me as much as possible. Please refer to Section 3.6 for further detail.

In conclusion, there is evidence from the findings of data analysis that ATOM has (1) an explicit impact on adaptability, peer feedback, and team orientation thanks to a shared mental models, communication, and mutual trust; (2) an implicit impact on redundancy thanks to a communication and mutual trust; however, (3) no apparent impact on shared leadership. Unlike Lichtman’s five to seven central concepts (2013) and Creswell’s five or six major themes (2013), as stated in Saldaña (2015), Wolcott (1994) advises that “three of anything major seems an elegant quantity for reporting qualitative work” (p. 10), and pursuant thereto, I saw into three major themes emanating from the corpus by the end of my second-cycle analysis. Please refer to Table 5 for the consecutive themes of the data analysis, i.e., the reflective findings (RF).

<table>
<thead>
<tr>
<th>#</th>
<th>RF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ATOM has an explicit impact on adaptability, peer feedback, and team orientation through shared mental models, communication, and mutual trust coordinating mechanisms.</td>
</tr>
<tr>
<td>2</td>
<td>ATOM has an implicit impact on redundancy through communication and mutual trust coordinating mechanisms.</td>
</tr>
<tr>
<td>3</td>
<td>ATOM has no impact on shared leadership.</td>
</tr>
</tbody>
</table>

The central theme or the overarching concept in data analysis of qualitative research refers to the main idea or concept that emerges from the data. It is the overarching, abstract concept that summarizes and integrates the findings from the data analysis.
concisely (Braun & Clarke, 2006; Creswell, 2013; Miles et al., 2014). Accordingly, the central theme is the first consequent theme of the data analysis, which lays emphasis on the explicit impact mechanisms of pre-incubation on mobile game development team effectiveness. Please refer to Chapter 4 for an elaboration on the findings and Chapter 5 for policy recommendations that emanate from the policy generators.

3.5. Research Constraints

This study focuses on the impact of the pre-incubation on mobile game development team effectiveness with evidence from a pre-incubation center on incubated mobile game development teams in a particular business ecosystem and culture. This scope, of course, alludes to generalizability as a concern. Notwithstanding that, the primary constraints incidental to this research are not its generalizability or methodological concerns on the whole but the complexity of the interplay it tries to explore and the cognitive limitations accompanying this complexity. From the pragmatist perspective, the research is consonant with its paradigmatic and theoretical underpinnings, methodology, and adopted research design. In other words, those purported as constraints ‘are not bugs; they are features’ of any interpretative phenomenological qualitative inquiry. Instead, the constraints arise from the phenomena’ complexity under research and, correspondingly, from our percipience.

To put a finer point on it, the generalization of the findings is beside the mark, whereas the transferability of the findings is the substance. It is not because the findings of this study cannot be generalizable but because it is not a valid criterion for any exploratory qualitative research. To be more precise, qualitative research focuses on the in-depth exploration of complex phenomena, which should inherently not be expected to be generalizable to other settings (Charmaz, 2006). Furthermore, this study aims to understand the specific context of the impact of pre-incubation on mobile game development team effectiveness, independently from similar but different studies. Therefore, for this research, generalizability is beside the mark.

The fact remains that an interpretative inquiry can generate new knowledge thanks to detailed descriptions of the context, the research methods, and the findings that can be transferred to other sets of surroundings since transferability is a more appropriate
property than generalizability for qualitative inquiry. (Lincoln & Guba, 1985). Indeed, in qualitative inquiry, the findings are applied to another context through decontextualization and abstraction of emerging concepts and theories (Morse, 2015b). Hereunder, the findings of any research on the impact of any pre-incubator of a particular country on the team effectiveness of any digital product industry can be transferred to explain that impact (1) on the same industry with slightly different sociocultural and socioeconomic dynamics (2) on a slightly different industry with the same sociocultural and socioeconomic dynamics, and even (3) on a slightly different industry with a slightly different sociocultural dynamics to an extent, but cannot generalizable to an utterly unalike context.

Even though the researcher is a ‘key instrument’ (Charmaz, 2006; Creswell, 2013), her beliefs, values, and experiences can affect the research process unfavorably, leading to a narrow focus and limited scope of the research findings (Lincoln & Guba, 1985; Morse, 2015b). Due to the subjective ‘feature’ of the interpretative inquiry, researchers should be reflexive and transparent about their own subjectivities and biases and should strive to engage in rigorous and systematic data analysis to minimize the influence of personal biases (Denzin & Lincoln, 2011; Patton, 2015) and take steps to minimize their impact on the research process by engaging in a rigorous data analysis process (Tracy, 2010), and acknowledging the potential for alternative interpretations of the data (Merriam & Tisdell, 2016; Silverman, 2016), I tried my best to abide by these suggestions.

3.6. **Trustworthiness**

According to Lincoln and Guba (1985), trustworthiness is the most crucial criterion for assessing the value of qualitative research. Sooth to say, trustworthiness is not a single criterion but a combination of strategies and techniques used throughout the entire research process (Morse et al., 2002). The following definition of trustworthiness is quintessential:

> “Trustworthiness is the extent to which qualitative researchers can persuade readers that their findings are worth paying attention to, despite the absence of quantifiable measures of reliability and validity. Trustworthiness is the qualitative analogue of reliability and validity, and it can be established
These four components stem from the framework proposed by Lincoln and Guba (1985). To draw an analogy between qualitative and quantitative research, credibility, transferability, dependability, and confirmability are analogous to internal validity, external validity, reliability, and objectivity criteria of the latter, respectively (Patton, 2015). Regarding this, Creswell (2014) emphasizes that each component requires a combination of different strategies and techniques to enhance the trustworthiness of the research.

3.6.1. Credibility

Charmaz defines credibility as the “extent to which the findings are credible or believable from the standpoint of participants and other stakeholders, as well as the extent to which the researcher has taken steps to increase the truth-value of the findings” (2014, p. 46). She emphasizes that credibility is not a fundamental characteristic of the research but rather a judgment made by the researcher, participants, and other stakeholders based on the research process and findings (Charmaz, 2014). Lincoln and Guba suggest that credibility can be enhanced through various strategies, such as prolonged engagement, multiple data sources, and reflexive analysis, which aim to increase the rigor and trustworthiness of the research (1985).

As a collectively exhaustive, mutually exclusive group, the participants provided me with multiple data sources in coherence. While the specific content supplied the mutual experience, i.e., checkpoints, the exclusive content supplied the differing parts enriching the empirical data. Together with literature reviews on team effectiveness studies in different contexts, these sources fulfilled triangulation. I kept prolonged engagement with the coordinators of the center throughout the interviews. Despite not being interviewed, they contributed more to this study by orienting me during the fieldwork.

All the same, I did not utilize member checking. It is not because overbusy participants get around to this but because I disapprove of this method seeing the research design. Although member checking is a technique employed to ensure credibility in qualitative
research (Creswell & Miller, 2000), it is incongruent with its philosophical underpinnings of adopted research design since employing participants to confirm findings conflicts with the values of interpretivism (Mnell-Henry et al., 2011) in regard to Heideggerian phenomenology. Even more, it has potential drawbacks due to the power dynamics between the researcher and the participant (Buchbinder, 2011), albeit not an issue in our case.

3.6.2. Transferability

Transferability in qualitative research refers to the extent to which the findings of a study can be transferred or applied to other contexts or settings beyond the specific sample or situation in which the research was conducted and is achieved through the thick description and purposeful selection (Creswell, 2013). One way to enhance the transferability of qualitative research findings is to use a research approach that prioritizes contextual understanding and description, providing detailed descriptions of the research context, participants, and data collection and analysis processes and using thick description to help readers understand the study's potential applicability to other contexts (Patton, 2015).

I figure transferability as the centerpiece of trustworthiness. Therefore, I paid strict attention to transferability through the thick description, peer debriefing with my thesis supervisor, a purposive selection strategy, a rich and nuanced data collection approach, a detailed description of the research context and participants, and a transparent and systematic approach to data analysis (Charmaz, 2006; Creswell, 2013; Lincoln & Guba, 1985; Morse, 2015a; Shenton, 2004). Any researcher can hereby adapt this research as it applies to a different context.

Lincoln and Guba (1985) argue that the goal of qualitative research is not to achieve generalizability in the traditional sense of the term but rather to enhance the transferability of findings to other contexts by stating “making explicit the conditions under which the findings hold true” (p. 301). Section 3.5 work through a comparison of generalizability and transferability in qualitative research on behalf of the latter.

3.6.3. Dependability

Dependability refers to
“the degree to which the data and findings of a study are consistent and dependable over time and over conditions. To enhance dependability, the researchers must keep accurate and complete records of their study and must be able to demonstrate that their procedures can be duplicated.” (Lincoln & Guba, 1985, p. 301).

In other words, dependability concerns the reliability and consistency of the research process and findings. As it is understood, it involves ensuring that the research is conducted systematically and consistently, with clear and well-documented procedures and methods, so that others can depend on the findings. For the sake of the consistency and stability of the findings over time and across different contexts, I documented the entire research process and findings by taking the suggestions on board, including any development or modification to the research steps. On behalf of a rigorous and transparent approach to data collection, analysis, and interpretation, we practiced peer review and maintained the audit trail (Charmaz, 2006; Lincoln & Guba, 1985; Morse et al., 2002). Keeping the idiosyncratic nature of coding in mind, we applied multiple coding with my supervisor through different coding approaches to set an intercoder agreement (Krippendorff, 2013). Shenton (2004) suggests that researchers can ensure their work is dependable and trustworthy by maintaining open communication with the supervisor. Under this suggestion, I regularly communicated the progress to my supervisor over interim reports, and specific to coding, in consensus meetings (Saldaña, 2015; Patton, 2015), throughout the research. Any researcher can hereby depend on the research findings and take them further.

3.6.4. Confirmability

As for confirmability, it refers to the extent to which the research findings are shaped by the researcher's biases, perspectives, or values rather than reflecting the participants’ experiences and perspectives (Morse et al., 2002). In other words, confirmability is concerned with the extent to which the researcher's interpretations of the data are grounded in the data rather than being influenced by personal or subjective factors. In order to achieve confirmability, Houghton et al. expound that

“Confirmability can be achieved by ensuring that the research process is transparent so that others can follow the reasoning behind the research and
the decision-making processes. The researcher's own views should be clearly identified and their potential impact on the research process and findings should be taken into account." (2013, p. 14).

As it is seen, confirmability involves providing evidence that the interpretations and conclusions drawn from the data are based on the data itself rather than on preconceptions or assumptions. On behalf of reflexivity (Finlay, 2002; Lincoln & Guba, 1985), by keeping account of ‘positioning’ (Davies & Harré, 1990), the Hawthorne effect (Roethlisberger & Dickson, 1939) and ‘pink elephant’ (Morse, 2015b), I used a transparent and systematic approach to the entire research process to maintain the lucidity of the research, as elaborated in the respective chapters of this thesis under the suggestions. Even a nonexpert hereby can keep up with the rationale and integrity of the research.

3.6.5. Authenticity

Although it may sometimes be evaluated under credibility, I deemed it appropriate to specifically address authenticity as well. Authenticity is another dimension of rigor in qualitative research. Lincoln and Guba defined authenticity as “the extent to which the account provided by the inquirer accurately represents the experiences of the participants and the meanings they attach to these experiences” (1985, p. 301). Authenticity is essential for establishing the credibility and relevance of qualitative research in contemporary society and can be enhanced through reflexive analysis, cultural sensitivity, and ethical research practices (Denzin & Lincoln, 2011). I conformed to the mediums enhancing authenticity in terms of reflexivity, cultural sensitivity, and ethical practices. Since (1) this is more of an issue for ethnographic studies or interviews with vulnerable participants, we have (2) similar sociocultural backgrounds, and (3) similar occupations at the age group of the similar socioeconomic level, it did not pose a problem in our case.
CHAPTER 4

FINDINGS

This chapter presents the findings of the research in a systematic approach. I organized the presentation of the findings into two subchapters in line with the clustering of codes into two categories, i.e., theme generators and policy generators.

In the first subchapter allocated to constitute evidence for the research question, there are consequent themes of interpretative analysis grounded on theme generators. Under each consequent theme, I probed the corresponding reflective finding with regard to the conceptual framework and hereby delineated the interpretative essence of the inquiry. I presented each interpretive finding in consistency with the SQC model (Weaver-Hightower, 2018), which stands for Setup-Quotation-Commentary, but with two slight modifications by (1) sticking to the observed phenomena rather than inferred behavior (Wolcott, 2009) and (2) providing interpretive and reflective findings by name to ensure a structured, and hence more explicit layout.

According to this model, which starts with the setup of the quotation, then presents the quotation itself, and finally ends with my commentary, much data should come from the corpus (Weaver-Hightower, 2018). In favor of this model, I continued the two-stage approach applied in data analysis throughout presenting the findings that follow the setup, quotation, and commentary thread. This layout first provides preliminary information in light of the theme generator categories, then justifies the finding with adequate quotations that partake in raw empirical data, and ends with my opinion through the corresponding interpretive finding in view of the spanning interpretive and reflective findings. As mentioned in Section 3.4.3, I shrunk the translated quoted passages to fit a bare minimum. Although I translated more for each, I tried to stay within three adequate quotations for convenience by prioritizing declarations of teams to managers. I kept quotes not literate but colloquial as much as possible. For some
quotes, I figured out that the answer seemed to belong to a definite theme at first glance, whereas the participant denotes another theme. Hence, I brought order into the themes accordingly. It should be noted that the team effectiveness components and, accordingly, the generated themes are not mutually exclusive. Nevertheless, I tried to separately categorize interferences from each other as much as possible by highlighting nuances. Further discussion of the findings is in Chapter 5.

In the second subchapter allocated to the prospects of the participants, there are shreds of evidence grounded on policy generators presented along the same line. I sorted out these prospects under managers and teams in order to emphasize the differentiation between the two sides of the same coin. The prospects somehow intertwined with the sui generis nature of mobile game development. These findings exceed answering the research question and dedicatedly target to account for policy implications, the subject of the next chapter. I also endeavored to address the contradictory expectations of the participants where the context entails.

Pertinent to the configuration of this chapter, I would like to elucidate that ATOM impacts mobile game development team effectiveness in two manners, the sway is either explicit or implicit. However, a particular emphasis on this dichotomy is inexpressive since such a slant would not elicit the emergent impact mechanisms. The same goes for an emphasis on the current incorporation status, graduation status, or subgenre of an incubatee team, which, as I figured out afterward, added only a trivial substantiality to the inquiry. This phenomenon also accounts for the interview guide, rendered concise along the way. I hereby did not feel the need to underline these dimensions in the presentation of the findings.

4.1. Impacts

Following seven themes constructed according predominately to the interpretative analysis account for the impact of ATOM on mobile game development team effectiveness. Although I present further elaboration for each theme in its comment part in a narrative form, examining sentence codes will also facilitate the understanding of findings related to impact mechanisms. For this, please refer to Appendix C, most particularly, third and fourth code categories. Figure 6 presents the consequent findings of the research with reference to ATEM in a nutshell.

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**Figure 6:** Impacts of ATOM on mobile game development team effectiveness

**Source:** Auto-depiction

### 4.1.1. Providing Business Networking

**IF #1:** ATOM explicitly provides mobile game development teams with the opportunity to establish business networking.

**RF #1:** ATOM explicitly impacts adaptability, peer feedback, and team orientation through shared mental models, communication, and mutual trust coordinating mechanisms.
Creating business networking opportunities actually brings along a sharing environment, collaborative learning, and the ability to access different business connections, enabling rapid and supported growth. It is appropriate to highlight the theme that ATOM creates a business networking environment for the teams it provides pre-incubation services to, since this contribution brings not only a strong sense of solidarity and a learning environment but also secondary benefits along with it. In this regard, providing business networking serves as a kind of 'umbrella' effect primarily by directly addressing the components of team effectiveness in ATOM, as well as indirectly through supportive mechanisms that support these components. Empirical data below elucidate the various aspects of this impact.

**Table 6: Providing business networking**

<table>
<thead>
<tr>
<th>Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating business networking opportunities actually brings along a sharing environment, collaborative learning, and the ability to access different business connections, enabling rapid and supported growth. It is appropriate to highlight the theme that ATOM creates a business networking environment for the teams it provides pre-incubation services to, since this contribution brings not only a strong sense of solidarity and a learning environment but also secondary benefits along with it. In this regard, providing business networking serves as a kind of 'umbrella' effect primarily by directly addressing the components of team effectiveness in ATOM, as well as indirectly through supportive mechanisms that support these components. Empirical data below elucidate the various aspects of this impact.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Let me put it this way, I can say that the biggest contribution is the network at this stage, so let me define the network like this, there is an alumni network since 2008, this alumni network, it is useful to define it like this, when you want to make a game for Xbox, you go here to [company name]. or you can go to [company name] for PlayStation. Or when you want to make a mobile game, if you can't knock on [company name]’s door, tell Technopolis management, we have something at ATOM, we have a team, can you talk to them or support them? One of the most important contributions is the network, the second is that it is very close to the university, and the third is that it is in an ecosystem like METU Technopolis. What is this ecosystem, today there are over 420 companies here and they work in different sectors, in fact, these sectors also have companies that have needs such as animation program design, I think that as soon as you enter this ATOM, you get the opportunity to access these 420 companies in some way.” (Taurus)</td>
</tr>
</tbody>
</table>

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64
“Either the obvious contribution of ATOM is as follows, there is a very good networking network in ATOM, for example, I can say that at least we are a team that has invested in two rounds on our own behalf, and I think we are the only company and team that received investment in ATOM, the company that received the only core investment. In such a case, for example, when someone asks a question about any investment, they can be directed to us very easily, or on our technical side or in an administrative issue on another issue, for example, when I will buy an investment, I have a question mark in my mind, I know [company owner] through ATOM. He is the founder of [company], I also got his phone number from Aries in time, I improved my networking myself, and he is a person who has both invested, bankrupt and invested, so I got a lot of advice from him before I got an investment with my partner. For example, this was a networking that ATOM provided to me, but that I developed at least later on, but today, when we have a need for a technical or administrative issue, both ATOM’s mentors and mentors will be able to find the right person and have us answer these questions when we say that they are insufficient. They have communication, as I said, they did it on time.” (Cancer)

“Directly ATOM’s biggest contribution is networking as an environment, the multi-game industry actually has a very solid network both with the new startups and the ecosystem within the technopolis itself. There is the Istanbul side, and after Istanbul, for example, in the hypercasual sector, there is a situation like this: Those in Istanbul have a network within themselves, those in Ankara have a network within themselves, there is a very small network on the Izmir side, on the east side there is RotateLab. There [Gaziantep]RotateLab is a little more dominant, there is a small network there too, but one of the very big networks is Ankara and Istanbul, after Istanbul, Ankara can also come, even Ankara passes in a certain place and then comes back, there is such a thing between them. I
**Table 6 (continued)**

*think that the main center of this network is METU, where it grew by ATOM because most of the game companies in Ankara touched on ATOM in one way or another. ” (Virgo)*

Additionally and concisely:

*“It was like my home. So we can say networking, yes, right now, for example, I'm coming for my friends.”* (Ophiuchus)

---

**Commentary**

Within the realm of ATOM, teams are not just isolated entities but actively engaged in the vibrant peripheral network. They are seamlessly integrated into the ecosystem, feeling a sense of belonging and connection. As part of the game development ecosystem, teams thrive within ATOM, benefiting from the collective knowledge and experiences of other teams. Collaboration is key, as teams learn and grow by asking questions and seeking insights from their peers. Mistakes and failures become valuable lessons as teams observe and learn from the experiences of others. ATOM goes beyond professional development; it fosters a social environment where teams can socialize and build relationships with their colleagues, further enhancing their overall experience within the network. It is evident that all these effects contribute to the benefits and contributions of ATOM creating a networking environment. It seems that the point I particularly want to emphasize at this point is that the direct contributions of ATOM, resulting from keeping these newly formed nascent teams physically together, are much stronger and organic compared to the possible networks they would establish independently. This is a direct impact of ATOM on the adaptability and redundancy components through particularly shared mental models and communication mechanisms.
4.1.2. Enabling Know-How Transfer

**IF #2:** ATOM explicitly enables a know-how transfer opportunity between mobile game development teams and the game development community.

**RF #1:** ATOM explicitly impact on adaptability, peer feedback, and team orientation through shared mental models, communication, and mutual trust coordinating mechanisms.

**Table 7:** Enabling know-how transfer

<table>
<thead>
<tr>
<th>Setup</th>
</tr>
</thead>
<tbody>
<tr>
<td>This inference points out the positive outcomes of teams being physically co-located and encouraged by the management that supports a culture of sharing. When teams are in close proximity and have an environment that fosters sharing, it leads to positive feedback and benefits for the teams. Empirical data below elucidate this impact.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I mean, another team can actually have something for us here, in a normal office space because you don't actually get this information, so my two years senior can't go to a team and get information from there, actually, managerial thing, but what happened, for example, I asked an accountant, they gave me their own. They gave me their things, they said this is our accountant, something I don't know, I asked their shape and they gave me examples, of course they drew a way of how we should do it.” (Leo)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We could not have developed so quickly, because there is such a thing that if I make a mistake, another company knows my mistake, I see their mistake, so we can change our mistakes together. For example, when we deliver a single game, for example, if we had our own company outside, somewhere in [a business center in Ankara]. If we are a company, we can only do internal testing, we send the game to him, how is it? I go to the subsidiary company, normally the competitor, that is, the publishers are in a fight, I’m going, brother,</td>
</tr>
</tbody>
</table>
he says how did it happen, he says, tactfully, if you want to fix this, he says if you want to fix that, he says if you want to fix that.” (Virgo)

“I see [contributions], but when you say ATOM, I think you mean all ATOM components, not managers or coordinators responsible for ATOM. Now, when we look at the situation of the game development industry in Turkey, there are many successful startups, companies, etc., whose names we have heard frequently in recent years. But you can think like this: if you have an idea to make a PC game, let's say, every team is doing the most progressive work, project in Turkey in that field. He is trying to implement it just because he got out of the idea and put it into practice. In that sense, it's more like this: Of course, I benefit from ATOM in this sense, but whoever succeeds in this is the one who does the work that will benefit others. In other words, there are already very good advanced examples in the field I want to do and I will benefit from them, there is not much of a situation where I want to reach their level. It's not because I'm super, nor because the people here are bad. The reason for this is, you know, there are very few examples in the field of PC game development in Turkey. Maybe Respectable, the one you just talked to. His work is unique and I wonder what he did. Here, frankly, every work done creates something that someone else may take and reap something for himself.” (Capricornus)

Within the realm of ATOM, teams find themselves immersed in an environment that fosters valuable know-how transfer. This perfect learning environment ensures that teams can continuously expand their knowledge and skills. Within ATOM, a strong culture of sharing is instilled, promoting collaboration and the exchange of ideas among teams. Regular and on-demand feedback mechanisms are in place to facilitate continuous improvement and growth. Furthermore, ATOM encourages teams to seek direct support from its management, fostering an open and supportive atmosphere. The
statements of the teams clearly indicate that ATOM, by supporting communication among physically co-located teams and creating a sharing environment, directly facilitates inter-team know-how transfer. This is highly valuable in terms of both learning by observing and learning by doing, as well as transferring tacit knowledge. My opinion is that if these teams did not receive pre-incubation services within ATOM, they would not be able to expedite their learning process to this extent. This is the impact of ATOM on the team orientation and peer feedback components through shared mental models, communication, and mutual trust mechanisms. Compared to creating business networking, this impact primarily enhances team effectiveness within ATOM through mutual interaction and learning mechanisms.

### 4.1.3. Creating a Solidarity Environment

**IF #3:** ATOM implicitly creates a solidarity environment for mobile game development teams.

**RF #2:** ATOM implicitly impacts redundancy through communication and mutual trust coordinating mechanisms.

**Table 8:** Creating a solidarity environment

<table>
<thead>
<tr>
<th>Setup</th>
</tr>
</thead>
</table>

Exactly, this is an example of the direct impact created by the physical presence of teams together. The collaborative environment is highly valuable as it prevents teams from feeling excessive competition among themselves, allowing them to develop together. Empirical data below elucidate this impact.

<table>
<thead>
<tr>
<th>Quotation</th>
</tr>
</thead>
</table>

“I can say that one of the biggest contributions we have received from ATOM can be called networking here. Since there are no
Table 8 (continued)

barrier walls between us, we are actually office friends with everyone. In fact, we are like a single company.” (Sagittarius)

“The contribution of ATOM here is that, rather than the people we call mentors who came out of this style, the information that we should not share with each other as confidential inside, in the game industry in general, someone does not even show the screen of someone's game, because there is no such thing as a copyright system, so there is no copyright. There is no such thing as the system of the game, when you make the same game by changing the color of the game, you can exit that man before and steal his customer, but there is no such situation in ATOM, here we all have our data for one of us, I talked to that publisher, this publisher's publishing manager is good, this is bad, it is bad for me. He offered money, offered such a percentage, when I get the information, I can sit stronger while sitting at the table with the publisher.” (Cancer)

“I would say network, getting to know people in the industry, because here we did things like this and shared the confidential articles of the contracts we signed with the publishers. Publishers noticed this as well, and it's been like this, I can't give much worse deals for us than other studios here. This allowed me to make better deals because I did this job at [company] rather than doing it outside. Of course, we cannot do these openly, but the publisher knows we are doing this, so it works. But is this a contribution, a contribution, I think.” (Scorpius)

Commentary

Within the realm of ATOM, teams are embraced by an environment characterized by solidarity and camaraderie. It serves as a platform where teams can not only collaborate on projects but also forge strong social connections with their colleagues. ATOM goes above and beyond in fostering a sharing culture, encouraging teams to openly exchange ideas, knowledge, and experiences. It creates a
supportive ecosystem where the collective growth and success of all teams are prioritized, ultimately leading to a thriving community of collaboration and mutual support. A pre-incubation center hosts different teams that have been accepted into the center within the same time period during their setup phase, allowing them to develop together as a larger and unified team. This situation facilitates the creation of a collaborative environment among teams right from the beginning. This is highly valuable because if the teams were not in a pre-incubation center, they would not have access to this collaborative atmosphere. Therefore, it is a direct contribution, especially to the team orientation, redundancy, and peer feedback components, through all mechanisms, namely shared mental models, communication, and mutual trust.

4.1.4. Providing Mentorship and Training

**IF #4:** ATOM explicitly provides mobile game development teams with mentorship and training services.

**RF #1:** ATOM explicitly impacts adaptability, peer feedback, and team orientation through shared mental models, communication, and mutual trust coordinating mechanisms.

| **Table 9:** Providing mentorship and training |
| Setup | The teams claim that they benefit from various trainings provided by ATOM in various subjects and express high satisfaction with these trainings. Empirical data below elucidate this impact. |
| **Quotation** | “ATOM has a communal atmosphere. At least it was like that back then, I don't know about now. Also, there's something else about it. Because we experienced what others experienced, the team, of course, there are teams that couldn't incorporate and there are teams that graduated unsuccessfully, but with us, everything, including our culture, is from ATOM. In addition, we published our first game |
Table 9 (continued)

together with our ATOM mentor. When we were at ATOM, we were assigned a mentor, and the same system still exists. There was a company called [company] from Istanbul. At that time, they were already at the scale we are now, with 16-17 people. We went to Istanbul constantly, they came constantly, and it was a constant observation of how they did their work, their development, their marketing, and it had a great influence on us. This is an indirect result of ATOM. It was great that we ran into [company]. While we were still at that level, seeing the workings and pipelines of companies at this level, we still use those things, frankly.” (Aquarius)

“The training sessions in ATOM are generally about entrepreneurship, such as what entrepreneurship is and what entrepreneurs should pay attention to. Even though those trainings are not specific to a company that is an entrepreneur, I have learned a lot. None of us had a company before, none of us had ever managed a company before. We all worked elsewhere, and we quit our jobs to start our own business. For all of us on the team, this was our first time managing a company.” (Libro)

“There is a situation like this: we published our first game together with our ATOM mentor. When we were at ATOM, a mentor was assigned to us, and the same system still exists. There was a company called [company] in Istanbul, they were already at the scale we are now, with 16-17 people. We constantly went to Istanbul, they constantly came, there was constant observation, how they do their work, how their development and marketing is, had a great impact on us. Actually this is an indirect contribution of ATOM. It was really good that [company] came across us. For example, [company] came across [company].” (Aquarius)

Commentary

Within the realm of ATOM, teams are equipped with a comprehensive range of support and training services. Regular mentorship services are readily available, providing teams with
valuable guidance and insights from experienced professionals. In addition, ATOM offers administrative training, empowering teams with the necessary skills to effectively manage their projects and operations. Recognizing the importance of marketing, ATOM provides teams with specialized training in this crucial aspect, enabling them to effectively promote their products and reach their target audience. Technical training is also a priority within ATOM, equipping teams with the knowledge and expertise needed to excel in their respective fields. To ensure continuous growth and development, teams receive regular training support, allowing them to stay up-to-date with the latest industry trends and advancements.

It is undeniable that in-service training is beneficial for teams at any stage. However, as mentioned in the next section, it is of critical importance that these trainings are not organized in a generic manner but rather prioritized and customized according to the teams' needs in order to achieve maximum benefit. In general, teams are in consensus that they require training in areas where they feel a sense of lacking, particularly in topics related to adaptation or marketing, rather than technical subjects that they believe they can handle on their own. This impact is primarily on the team orientation and adaptability components through communication mechanism.

4.1.5. Allowing Autonomy and Self-Awareness

**IF #5:** ATOM implicitly allows mobile game development teams to gain self-awareness.

**RF #2:** ATOM implicitly impacts redundancy through communication and mutual trust coordinating mechanisms.

**Table 10:** Allowing autonomy and self-awareness

| Setup | The fact that teams learn from their own experiences and from other teams, enabling self-discovery and supporting autonomy, indicates |
Table 10 (continued)

<table>
<thead>
<tr>
<th>Quotation</th>
<th>the need for autonomy. The following quotations from participants elucidate this phenomenon.</th>
</tr>
</thead>
</table>

“The team leaders are also developing themselves in this regard at ATOM, so they are also experiencing their own growth as leads. There are two important factors here: one is the support teams receive from ATOM's coordinators, mentors, or advice, and the other is witnessing other teams inside, because that's very powerful, very important. I'll give you some very harsh examples, but witnessing how the team next to you sometimes yells and fights, witnessing how they divide work, witnessing how sometimes the lead of a team is disconnected from the team dynamics, all of this teaches you a lot, and those friends also learn, of course. So far, it may be a bold statement, but if there is any team in ATOM that has not progressed in terms of team communication, I can guarantee that they did not come to ATOM. They may have registered for ATOM, but they did not come. It is not possible for them not to learn, not to progress, not to change.” (Gemini)

Quotation “We were doing exercises like this; before making the final decision, I was having them do exercises where teams could openly discuss their division of tasks among themselves. For example, things that are generally avoided, such as talking about it, especially when it comes to games with friends, things they are generally hesitant to talk about, such as talking about profit or starting a company. I was having them do exercises where they could speak openly and without hesitation, and once they passed that threshold, some teams, not because of the money, but because they had a better sense of the inside of the job, would say things like, 'I'm not actually an entrepreneur. I want to work for a company.' We could guide these friends to other groups, or when they said things like, 'We have a missing piece here, but it's not like
Table 10 (continued)

this side is missing, 'teams would either come together or separate without making final decisions.' (Gemini)

“Actually, ATOM has a contribution in this regard. After all, coming here and spending time proves dedication. This is a great test pad in a way to see who comes and goes more, who takes more responsibility. Of course, this has an effect on understanding who will rise to leadership. The process itself determines this situation to some extent. We cannot have all 14 people here constantly. Since we have six places, we come here on a rotating basis.” (Sagittarius)

“So, the teams also get to know themselves in ATOM, that's actually the reason for the existence of pre-incubation. People can see this before becoming a company, without getting under the financial burden of becoming a company. They get to know themselves. If something comes out of it for them, they can become a company or come together, or they can go work somewhere else. ATOM has taught people this very well.” (Aries)

ATOM creates an environment where teams have the opportunity to truly discover themselves. By promoting autonomy in their internal affairs, ATOM empowers teams to become self-acquainted and self-reliant. This transformative process unfolds as teams immerse themselves in the ATOM ecosystem. Over time, they condition themselves to stand firmly on their own feet, gaining confidence in their abilities and decision-making. ATOM values the power of learning through trial and error, recognizing that this approach allows teams to progress independently and learn from their own experiences. This emphasis on self-directed learning fosters a sense of team autonomy, enabling them to navigate their own path and achieve success on their own terms within the ATOM community. ATOM's support for teams' autonomy, particularly in intra-team processes, is of great importance in ensuring sustainable
team cohesion even after graduation. While some teams expect ATOM to be a direct problem solver in matters related to adaptation, there are clear indications that emphasize the need for autonomy in team management. There is also evidence suggesting ATOM's significant contribution to teams' learning processes, particularly in their exploration process and learning by doing and observing other teams. This is the impact of ATOM on the team orientation and peer feedback components through shared mental models, communication, and mutual trust mechanisms. This is an acceptable finding because the components and mechanisms of the conceptual framework are never mutually exclusive in practice.

4.1.6. Instilling Work Discipline

**IF #6:** ATOM implicitly instills work discipline into mobile game development teams.

**RF #2:** ATOM implicitly impacts redundancy through communication and mutual trust coordinating mechanisms.

<table>
<thead>
<tr>
<th>Table 11: Instilling work discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Setup</strong></td>
</tr>
<tr>
<td>The discussions indicate that teams within ATOM acquire a stricter work discipline compared to the scenario where they are not part of ATOM. They achieve this through both the motivation of socializing with their colleagues and by being influenced by the hard work of other teams, which leads them to self-improvement and getting their act together. I think the two quotations below are enough to shed light on this impact.</td>
</tr>
<tr>
<td><strong>Quotation</strong></td>
</tr>
<tr>
<td>“So ATOM became my home. We can call it networking, yes. For example, I come here for my friends. I have the same desk at home, why should I come here? I just need to come here for seven days to benefit from the exemptions, but I come here every day. The remaining three weeks here make me feel good, I also help my</td>
</tr>
</tbody>
</table>
friends, they come to me for advice, and when I help them, I feel happy. Being a part of this ecosystem and nourishing it motivates you and also benefits you personally, it is beneficial for your mental health. For example, it can be frustrating when we get stuck while coding or developing a game, but you can talk to the company owners, and they give us energy. Being around motivated people makes you more productive and social. I think this is the main advantage of this place, it keeps you social and connected within the industry.” (Ophiuchus)

“Here is the answer. I used to work from home. Think of it like building something, like a construction project. If you're going to build it with ten thousand bricks, whether you put in one brick a day or three bricks a day is so effective, in the sense that you can finish a game that should take one year to finish in three years, and it's not just about time. If you finish a game that should take one year in three years, there can be other losses, such as how you perceive the game, how interested you are in it, and how careful you are. In this respect, time, time management, and working hard are important. For me, working from home was a bit of a problem until a point where I had to keep track of how many hours I worked each day, like did I work two hours today or eight hours yesterday, and I was pushing myself. This thing, and my concerns, have largely been eliminated. I work two to three times harder here than I used to when I worked from home. And without mental or physical exhaustion. In that sense, this place is a bit beautiful.” (Capricornus)

Commentary

It is evident that ATOM disciplines teams. This impact emerges through either adapting themselves to other teams or constituting self-motivation by seeing others. ATOM's indirect contribution impacts team orientation through the communication mechanism within the conceptual framework. This contribution, which can be
argued to be domain-independent in essence, can be explained by the catalyst effect created by social processes and being together.

4.1.7. Lending Prestige

**IF #7:** ATOM implicitly lends prestige to mobile game development teams as of its representativeness.

**RF #2:** ATOM implicitly impacts redundancy through communication and mutual trust coordinating mechanisms.

<table>
<thead>
<tr>
<th>Table 12: Lending prestige</th>
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| **Setup** | The teams I have been in contact with declare that ATOM provides them with a trustworthy and prestigious label in the relationships they have established. They put forward that thanks to being part of ATOM, they have gained access to business connections and opportunities thanks to ATOM’s prestigious corporate identity itself that they wouldn't have been able to reach otherwise. Quotations below from the three of the teams highlight this impact. |
|-----------------------------|

| **Quotation** | “Prestige, which I clearly see as an obvious contribution. In other words, there is a prestige given by being under the roof of METU Technopolis. Even if ATOM does nothing, you can reach a certain point even with just that prestige, so at least people don't do anything, so let's not listen to you now or something. Whoever you want to talk to, they open the door and listen... Sometimes the name METU Technopolis has an effect. At least, when they say that we are an R&D company in METU Technopolis, we are about to become one, they say, well, let's listen because it might be a good thing. *I think the most obvious current benefit is prestige.*” (Sagittarius) |
|-----------------------------|
“Since we handle everything individually, such as recruitment or investment at work, we call ATOM just like that, for example, its name has contributed to us” (Cancer)

“ATOM was written on LinkedIn, for example, ATOM was written about where I work, I think it must have been a plus in their eyes, but we did not go to the publisher because of ATOM, the publisher came to us, in fact, ATOM does not have a direct contribution there” (Libro)

Atomic bestows teams with a prestigious label that carries significant weight in the industry. This label not only signifies their affiliation with ATOM but also serves as a testament to their excellence and achievements. As a representative in global platforms, ATOM provides teams with unparalleled visibility and exposure on an international scale. Being associated with ATOM’s corporate identity itself holds immense value, opening doors to a myriad of opportunities and partnerships. Furthermore, the ATOM graduate label serves as a distinguishing mark, showcasing the team’s commitment to innovation, professionalism, and success. These factors, combined, contribute to the overall benefits and advantages that teams derive from their association with ATOM.

Although this finding contributes to the team orientation component of team effectiveness through the mechanism of mutual trust, the positive reflection of ATOM’s corporate identity on teams is evident as a pre-incubation center. Whether in social media or real business relationships, the ATOM label creates an appeal for teams, even after their graduation.

4.2. Prospects

This section subsumes evidence for the expectations of managers and teams successively from ATOM about its potential impacts on the conceptual framework's
components with sentence codes. It should be noted that the expectations are not limited to team effectiveness but extend to supportive impact mechanisms that primarily emanate from policy generator categories of the code system. If any defined mechanism coordinates a component, it is indicated; otherwise, the impact mechanism corresponding to the component is emphasized in single quotes. These findings serve as input for practical implications presented in Section 5.2.

4.2.1. Managers

**Table 13:** Taking the teams to Game Developers Conference (GDC)

| Setup | ATOM has the potential to motivate teams to participate in a greater number of international events and conferences, enabling them to increase their visibility and establish valuable connections with potential investors and partners. Manager Gemini emphasizes its benefits through their own experiences with evidence from the most prominent global event in the game industry, GDC, organized regularly in San Francisco. |
| Code: | I wish ATOM could take the teams to GDC. |
| Quotation | “We can't take anyone, but I decided to go myself. I attended sessions at GDC for a week and absorbed everything like a sponge. Afterward, for three weeks, I shared everything I learned about GDC with my friends, one thing per hour each day. It was so beneficial that I didn't think it could improve. It was already helpful to me, but also helpful to them. However, there was one thing I couldn't share. I wish we could have taken all the teams to San Francisco and GDC, but not for them to attend summits and learn. It's because we can encounter everything that we need to know compared to the previous year. We cannot explain something even if we tell them about it here. When you go there, you see that the developer in San Francisco is struggling like you. You see that they ask the same questions, make the same mistakes, and discuss the |
same failures. They say they can't reach it or find it...I believe that a lot will change, but when I was a manager, I kept saying that we are not different. People felt like we were helpless and powerless in some areas. No, there are many advantages here. The last two years have shown this a bit...but everyone has the same mentality in San Francisco.” (Gemini)

This expectation can be interpreted as a prospective contribution of ATOM to the team orientation component through the communication mechanism. The manager believes that taking the teams to the GDC would be very beneficial based on their own experiences and what they learned there. By doing so, the teams will observe that mobile game developers worldwide, especially in San Francisco, face similar problems and gain confidence. Thus, they will be able to draw a roadmap with more confidence and set common team goals as a result.

Table 14: More formidable management

Despite it not being suitable for their personality, manager Aries is contemplating whether the teams would be more focused on their goals if a manager with stricter rules were in charge.

Code: I wish I had applied a little more formidable management.

“It would be useful to be a little bit bossy, especially in the incubation phase, because you're dealing with students in a game company after all, and people can be very comfortable, so in order to be a bit more challenging, one needs to be more rule-oriented and able to make tough and strict decisions to be followed, but our personality may not be suitable for that.” (Aries)
Table 14 (continued)

While the effectiveness of such a management approach in sectors involving creative work may be subject to debate, it is worth paying attention to the opinion of someone who has held managerial positions in such a setting for many years. Perhaps this management approach can potentially be beneficial in terms of ensuring better discipline. This expectation also can be interpreted as a prospective contribution of ATOM to the team orientation component through the communication mechanism.

Table 15: Providing better facilities to team up with more individuals

Manager Taurus states that redesigning ATOM as a talent pool and facilitating the incubatees to team up with mentally compatible potential team members is a doable task, although they still need to start doing it due to its difficulty.

Code: I wish ATOM had better facilities to team up with more individuals.

Quotation

“We don't follow a method where individual programmers, designers, and artists apply separately, and then we form teams later. We don't work in a way where they come as individuals and continue with their lives. Actually, what you're suggesting is doable, but we also have experience in this. We organize the Global Game Jam hackathon every year, where bringing together different people and forming a team is necessary. However, even in that dynamic environment where everyone is warm towards each other and can quickly become friends, programmers, and designers may still face difficulties in joining another team or finding a teammate.” (Taurus)
Table 15 (continued)

Commentary

This expectation can be interpreted as a prospective contribution of ATOM to the redundancy component through the shared mental models mechanism. The expressed expectation suggests that the benefit that can arise solely from the teams being together highlights the significant contribution that a pre-incubation center can make. Through this support, ATOM can also ensure constructing more effective teams by somehow providing team member diversity.

Table 16: Having its own financial resources

Setup

The manager states that if ATOM becomes a game publisher, it would open up opportunities for teams and indirectly make them much more comfortable. Even though there are supportive arguments from teams, there are also team views that contradict this statement.

Code: I wish ATOM had its own financial resources.

Quotation

“If ATOM had its own funds and was a publisher, these teams would greatly benefit. For example, we are currently providing an option for new teams joining us starting in 2022, giving them the right to become partners in METU Technopolis. If this had started earlier, we would have owned a 4% share in the larger companies today. Then, ATOM would have become a publisher and investor independently.” (Taurus)

Commentary

Although not directly related to any component of the conceptual framework, it is evident that the pre-incubation center will make a
Table 16 (continued) significant contribution to team effectiveness indirectly by providing financial support.

Table 17: Supporting teams in hiring game designers

<table>
<thead>
<tr>
<th>Setup</th>
<th>The manager complains about the difficulty of finding qualified game designers in Turkey and claims that training game designers at ATOM would greatly benefit the teams. There is a team view that supports the manager's claim.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code:</td>
<td>I wish ATOM would support teams in hiring game designers.</td>
</tr>
</tbody>
</table>

| Quotation | “There are technical people but, for example, there are no game designers in Turkey, everyone is developing themselves. So, good management within the team will be able to do a good job and design the game, game designing is completely different from a normal designer or a coder, but they should also understand the technical side of the game. Everyone is self-taught in this field.” (Aries) |

| Commentary | This contribution actually directly affects the redundancy component, but it does not rely on any defined coordinating mechanism. Both the statements of managers and teams indicate that one of the most crucial roles for mobile game development is the game designer. It can be comfortably argued that the pre-incubation center's direct recruitment support in this regard will significantly contribute to team effectiveness. |
Table 18: Better guidance in game design

**Setup**

The manager thinks that by improving their skills in game design, they could provide better support and guidance to teams, based on the observation that teams are experiencing problems in game design.

**Code:** I wish I had better developed myself in game design.

**Quotation**

"More importantly, of course, I am a sociologist after all, I don't have much knowledge of software, I don't have an engineer's mindset, so I would have wanted to understand the technical aspect of it, but of course, there is no rule that says only technical people can do this job, I could have developed myself in that direction a bit, but I didn't." (Aries)

**Commentary**

This expectation, once again, aligns with the emphasis on the importance of game design in Table 17, highlighting its significance. However, this time it pertains not only to direct recruitment support but also to providing mentorship support in this area. It will be a valuable contribution to establishing a sustainable continuous development policy in game design.

4.2.2. Teams

Table 19: Protecting intellectual property rights (IPR)

**Setup**

Team Aquarius expresses their expectations regarding a significant issue arising from current mobile game development industry trends. This issue revolves around the intellectual property rights challenges caused by the rapid production and consumption of games.
<table>
<thead>
<tr>
<th><strong>Table 19</strong> (continued)</th>
<th><strong>Code:</strong> I wish ATOM could protect our IPR.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quotation</strong></td>
<td>“One day a publishing company came. We had an exit from that company, and they are still active in the UK and Turkey. We showed them one of our games which had good data. A week later, we saw our game in their store. There was nothing we could do about it. Yes, it was a negative incident related to ATOM. For example, I don’t think we were supported much on this matter. I had a small conversation with the lawyer of Technopolis and explained the situation, but he said there was nothing to do, and I was left alone. I had to inform the ecosystem alone.” (Aquarius)</td>
</tr>
<tr>
<td><strong>Commentary</strong></td>
<td>This expectation sheds light on a direct prospective impact of ATOM on the adaptation component through the communication mechanism. ATOM has the potential to create policies and protocols aimed at safeguarding intellectual property rights (IPR), which became a concern due to the hypercasual gaming boom. This could involve collaborating with legal professionals to formulate contracts and agreements that protect these rights.</td>
</tr>
</tbody>
</table>

| **Table 20:** Being a direct problem solver rather than staying as a mediator |
|--------------------------|--------------------------------------------------------------------------------|
| **Setup**                | While teams generally appreciate being autonomous in their internal affairs, there are teams that believe direct involvement from ATOM, especially in matters related to adaptation, would be more beneficial. As an example, the statement of Team Ophiuchus shed light on this issue. |
| **Code:**                | I wish ATOM was a direct problem solver rather than a mediator. |
Table 20 (continued)

“ATOM is currently trying to make us do something, like investors coming in six months and training in two months, but the child needs education now and the child needs investors now. It will be too late in six months, how will we feed ourselves in the meantime? Therefore, being able to reach at least one or two people who have an idea about every issue and who know everything at the moment we need it contributes to solving all the problems here, but they should have gone through that process and be really doing those jobs. So, not someone who will direct us, but someone who will give direct advice based on their experience. Currently, we are doing this to each other, can you understand?” (Ophiuchus)

Commentary

While promoting intra-team autonomy is crucial, ATOM could shift its focus towards actively solving problems for teams by offering resources and support to tackle challenges and obstacles. This may involve implementing mentorship and coaching programs that assist teams in cultivating the necessary skills for achieving success. This is also a direct prospective impact of ATOM on the adaptation component through the communication mechanism.

Table 21: Attending more global events

Setup

In line with Manager Gemini, based on the benefits they have observed from past experiences, Team Pisces asserts that participating in more global events would be highly advantageous.

Code: I wish we could attend more global events.

Quotation

“It seems like it would be easier if there was a network, and beyond that, if there was a support system in place. If I could gain the courage to go to San Francisco and talk to an investor by waving
Table 21 (continued): my hand, that would be great. At the end of the day, maybe we want too much because this is actually an incubation center, and they don't make any profit. If something like this could be done through their own network, it would be good. Something that would help us take that step from [Pisces] to [company] or [company] would be great.” (Pisces)

Commentary: ATOM has the potential to motivate teams to participate in a greater number of international events and conferences, enabling them to increase their visibility and establish valuable connections with potential investors and partners. This is again an example of the prospective impact on the adaptation component through communication.

Table 22: Being more intertwined with the game industry

Setup: Team Pisces once again highlights the significance of communication regarding team effectiveness.

Code: I wish we could be more intertwined with the game industry.

Quotation: “I would like to be more involved in the Turkish gaming industry. I can still do it on my own initiative, but I wish I could knock on [company]’s door and say hi to [company owner]…For example, we met [company owner] from [company] at a certain level, like, you go to a conference, they see you, come and hug you, hold an event, say hi to everyone, and I want to be more involved with all computer game makers from [company], [company], [company], [company], and also with entrepreneurs who are not ATOM graduates. I don't mean that they should force me to meet them, but if there were something like an education or a conference, I would
Table 22 (continued)  
make that networking happen there. I would go and say hi to [company owner], but right now it feels like I can't reach him at all. Maybe I can still reach him if I push harder, but it would be easier if such a network existed.” (Pisces)

Since based on experiences, these prospects are significant. ATOM has the potential to foster increased networking and collaboration with various organizations and companies within the game industry. This initiative may involve establishing partnerships with game developers, publishers, and other stakeholders to grant incubatees access to valuable resources and support.

Table 23: Directly supporting game publishing

There are significant concerns regarding the monopolization of the game publishing industry, and there is a broad consensus on this issue. Quoting from Team Capricornus, they specifically raise this concern.

Code: I wish ATOM would directly support game publishing.

“I have also recently released a game myself, so I have been exposed to a lot, and I did something rough from there. Now, not all teams in this industry can be at this level. So it's not expected. If so, it means that these things are just beginning. So if something has been around for 30 years in the world, it means it's just starting in Turkey. So bring the most successful game developer in Turkey here, and I think the things they can contribute in terms of know-how, consultancy, and mentoring will be limited. These things will happen, they will occur within 10 years, and the ones that come after will benefit from them. But the world is not just Turkey, there are people doing this in Europe, there are people doing this in the
Table 23 (continued)

US, they are a bit ahead of us in terms of game development and publishing, and they share many things, so we can receive such support and help.” (Capricornus)

Commentary

The ability of these teams to monetize their products, safeguard their profits, and thereby establish sustainable team management is of utmost importance. At this point, ATOM has the potential to prioritize offering direct support to teams within the game publishing industry. This support could encompass training programs and resources aimed at assisting teams in game development, as well as providing funding and other resources to facilitate game launching and marketing efforts.

Table 24: Providing investment opportunities

The two quotes you mentioned beautifully illustrate the potential positive effects of teams’ access to financial resources on team effectiveness.

Code: I wish ATOM would provide investment opportunities.

“It would be good if they could find investors, for example, I never had such an expectation that they create something to protect us, you know, to do micromanagement themselves, try to protect us legally and so on, rather they could work on creating opportunities for us, actually more like that.” (Virgo)

Quotation

“Actually, something like that happened. In fact, it even hurt us a bit. We were at one of the pitch stops, and they said, ‘We'll give you $50,000.’ We were like, ‘Oh, that's great. We can do this and that. We can hire in areas where we're lacking, strengthen our MVP, and it’s a soft commitment so we can find more investors more easily.’
Table 24 (continued)  

But then it didn't happen. That's why we're saying that we don't believe it until we see the signature. And that's one of the reasons why. ” (Sagittarius)

Commentary  
The easy accessibility of finance for teams holds critical importance in terms of team building and management. Regarding this, ATOM has the potential to facilitate investment opportunities for teams by establishing connections with potential investors and granting access to funding resources. This could involve forging partnerships with venture capital firms and other organizations capable of providing financial support and assistance to teams.

Table 25: Raising funds dedicated to the industry  

It is obvious that funding, in particular, seed funding is important for nascent teams; however, sector-specific funding is a preferred condition. Team Ophiuchus emphasizes the significance of this aspect.

Code: I wish ATOM would raise funds dedicated to the industry.

Quotation  
“The point is, it makes more sense for them to be able to come here and touch things rather than a constructor...and the guy should track his money. I gave you this money, but did I spend it correctly on software and personnel expenses or not? There is a good example of this, I can't remember it now, I mean the money should be tracked so that the investor's money doesn't disappear, but Kickstarter, for example, is a crowdfunding platform, but how many of those projects actually finish? Yes, because they can't manage the money, three or four programmers, I don't know how to manage money, my job is to write programs, what am I going to do with $2 million if you give it to me? I'll probably waste it... So, it's not
enough to just bring together the investor and the player, the company owner also needs to receive education or do something about it. For example, someone who is a financial expert in ATOM companies can come here and we can discuss how we will manage our company, because you know, we are all kids here, we became bosses, and when you start your business, you already have a workload with taxes and stuff, and our only concern is taxes, and we just say okay to whatever the accountant says, but how are we going to manage the money?" (Ophiuchus)

ATOM has the potential to actively raise funds specifically designated to support teams in the mobile game industry. This effort may involve establishing partnerships with organizations and companies that have a keen interest in supporting teams within the industry.

**Table 26: Incorporating dedicated legal consultants in ATOM**

Team Ophiuchus emphasizes the expectation for dedicated legal support, which is directly related to the adaptability component. They recognize the importance of legal assistance, particularly for teams lacking prior company management experience or even experience in different fields, to ensure effective adaptation.

**Code:** I wish there were dedicated legal consultants in ATOM.

“I went there and asked for legal support from ATOM, just about how to establish a company legally. There is a situation like this, ATOM is not a company. ATOM is like a subsidiary of a company called GDC, so there is no official ATOM Inc. That's why they don't have their own accountants or KOSGEB consultants who can allocate and take responsibility for us, it would be better if they had.”
Table 26 (continued)

*I'm expressing this to the management, it's a deficiency in my opinion. We have to find our own accountant, we have to arrange it ourselves with the company, a guide, legal advice is indirectly provided here."* (Ophiuchus)

Commentary

It is evident that, especially for teams with no prior experience in company management or even in a different business field, there is a significant need for extensive legal support. In connection with this, having dedicated advisors within ATOM who are ready to provide assistance whenever needed holds critical importance.

Table 27: Setting more pitch stops

**Setup**

Pitch stops, which provide opportunities for both intra-team and inter-team feedback, are implemented within ATOM. Teams believe that organizing these types of events more frequently and consistently would be more beneficial.

**Code:** I wish ATOM would set more pitch stops.

**Quotation**

“I think currently there is a high level of entropy both due to the change in management and the many environments we're in, which is why it hasn't happened for a while. We can't even come together as a community. For example, when ATOM makes a new hire, I don't even know some of those people or their names. I think it's a big drawback and believe that getting to know each other before training is the biggest advantage.” (Pisces)

**Commentary**

ATOM has the potential to organize additional pitch stops and other events that facilitate teams giving feedback to one another. This initiative would enable teams to refine their projects and improve the overall quality of their products. This particularly highlights the
impact thanks to communication and shared mental models mechanisms on team orientation component.

Table 28: Organizing more events to make teams get together

This expectation is in line with Table 27 but emphasizes collaboration and solidarity beyond just giving feedback to each other.

**Setup**

**Code:** I wish there were more events to get together.

**Quotation**

“I would like it to enable us to bond more tightly with each other.”

(Pisces)

**Commentary**

ATOM can foster a collaborative environment that encourages teamwork and collaboration. This can be achieved by organizing team-building activities, creating shared spaces where teams can work together, and encouraging teams to share their knowledge and resources with each other. This indicates a direct prospective impact on the team orientation component through communication mechanism.

Table 29: Diversifying the teams' business models

This expectation primarily indicates a need arising from the mobile game industry's current trends. Team Aquarius explains the need for business model diversity.

**Setup**

**Code:** I wish ATOM would diversify the teams' business models.

**Quotation**

“I can say this: I was talking about business know-how, and now I'm talking about diversifying it. There are teams that are currently...”
forming companies, but maybe you've noticed that there isn't much difference in style among these teams. We usually graduate as hypercasual or hybrid casual companies. For example, we have tried a lot of things there, like casual, mythcore, PC... We have already entered the PlayStation market. I think mentoring, for example, can be shifted towards this direction.” (Aquarius)

While there are several possible implications in this regard, one of the most significant potential contributions of ATOM could be providing pivot support to teams. ATOM has the potential to assist teams seeking to pivot their business models or strategies in response to industry or market changes. This support could involve offering mentorship and coaching programs to help teams generate new ideas and develop strategies, as well as providing access to funding and other resources to effectively execute their pivot.

Table 30: Finding "mentor" angel investors

It is a fact that investors are important in terms of financial support. However, it is also crucial for investors to possess the ability and experience to provide mentorship support, which is essential for sustainable success. I have taken care not to shorten the following quote as it carries significant emphasis, despite being relatively long.

Code: I wish ATOM would find "mentor" angel investors.

Quotation: “I see a future problem here because this is a reflection of Turkey, and currently, only three or four companies develop games for PC, and good companies are also emerging. What will happen to them, what will their fate be? How can we grow them, how can you grow yourself? Because investors are not the key to this business.
Someone from Xbox came and gave a presentation at CoZone. What does an investor expect? What are the differences between a publisher and an investor? Now look, a publisher is interested in your game and only claims rights to your game's IPR, and the person is also a marketing expert. But a publisher is not recommended because you can do it yourself when you have some network, and he takes a 50% share. But the investor directly gives you money and helps you grow. This is what everyone wants, but there is no one to teach you the job. For example, there are people who invest in construction here. What will they add to you? What is the use of just money? Do you know marketing, do you know advertising? You don't know. There used to be Dragons' Den on Bloomberg. The man says, 'I will invest in you because I have the knowledge you need.' Because when you are looking for an investor as a company, you need to look at this. Will this person give me money and help me make a profit? Yes. If not, I want twice the money. It means that the company owner needs to search for this. Everyone has money, but what happens when you take the money from the wrong person? The investor and the company are both unhappy, and the money is wasted, and the value in Turkey disappears. The money was spent in the wrong place. If the person had gone to construction, at least he would have built a house. It just disappears. Silicon Valley has no such problem because the investors there already know the business.” (Ophiuchus)

The quote is quite explanatory. This situation not only applies to the mobile game industry but also concerns newly established teams in all fields. It highlights the fact that although it is often overlooked or neglected due to the urgent need for funding, having investors with the capability and experience to provide mentorship support is a crucial aspect. What is important for us in this context is that, pre-incubation programs have the potential to provide mentorship to incubatees, assisting them in constructing efficient
Table 30 (continued)  
teams. Mentors can offer guidance and advice regarding team building, as well as aid incubates in recognizing and tackling any obstacles they encounter.

Table 31: Organizing more diverse training

Setup

I would like to highlight the importance of training programs that are tailored to specific needs and delivered at the right time, rather than generic trainings. This expectation, as emphasized by Team Aquarius, emphasizes the significance of addressing the specific training needs of the incubatee teams.

Code: I wish ATOM would organize more diverse training.

Quotation

“I would have liked to have technical training, but there is also this to consider: if we had it back then, would we have used it? We were only two people at the time. Now we really need it, but would it have seemed necessary to us back then? For example, we were given training on how to obtain government support at the time. We tried it, but then I said, why are we bothering with this, let's make games. It was difficult to determine where to allocate resources back then, as resources were much more limited. Therefore, I am not 100% sure, but project management was something we worked on up until this point.” (Aquarius)

Commentary

ATOM could respond to the demand by expanding its range of training programs, covering various aspects of entrepreneurship and business development. This could involve offering diverse training sessions on subjects like marketing, finance, and management. I think the emphasis should be on taking the particular demands of the teams into consideration.
Table 32: Providing more marketing training

As also emphasized in Table 31, it would be much more beneficial to consider the needs when organizing training sessions. The following two quotes emphasize the importance of marketing training, which teams have unanimously identified as the area where they lack the most.

**Code:** I wish ATOM would provide more marketing training.

**Quotation**

“I mean, if ATOM organized this event, it would have an incredible impact. The people here are all potential deals waiting to happen. Maybe this event could bring together key people, and ATOM could promote its studios and facilities. Actually, ATOM could turn this place into something great and offer incredible opportunities to those inside. These kinds of things could happen, so I see the potential here. If ATOM organized events like this and did other similar things, it could lead to so much.” (Leo)

“We are all technical people. Administrative training, project management training, okay, but marketing and user acquisition are a huge deficiency in my opinion for those who graduate from ATOM.” (Aquarius)

**Commentary**

The discussions indicate that teams, particularly in the area of marketing, require more extensive and structured training rather than technical trainings. Considering the backgrounds of team members, this expectation seems valid. While teams can learn from each other's technical gaps through various feedback mechanisms, there is a significant knowledge gap in marketing within the community. Addressing this need would provide crucial support for teams to better monetize their games and break the monopoly of game publishers.
CHAPTER 5

DISCUSSION

This chapter deals with the research findings through the theoretical background. The chapter deliberates on the theoretical implications regarding the motives of the research, which act upon the team effectiveness literature, and practical implications, which constitute the datum for the policy recommendations and propose an agenda for further research.

5.1. Theoretical Implications

As a matter of fact, the interrelation between entities is influenced by a complex set of rules, signals, and personal histories, which create a nuanced environment that can be difficult to predict (Ahmad, 2014), making the pre-incubation process non-linear and unpredictable. An interplay is in question through mediators, more than coordinating mechanisms among all entities, i.e., the current clients, the pre-incubator, the graduated teams, other mobile game companies that have not crossed paths with ATOM, various consultants, professionals, or peripheral entities, in a network that dissolves with the end of the pre-incubation period. The emergent properties (Lewes, 1875; O'Connor, 1994) of this complex system may make it challenging at heart to identify and analyze critical patterns and themes in the empirical data (Gioia, Corley & Hamilton, 2013).

Keeping this in mind, the ‘complexity of the real world' was compulsorily abstracted into a simplified unilateral conception for “coping with reality” (Rorty, 1982, p. 202) from the embraced pragmatist perspective. This abstraction facilitated keeping the focus merely on the impact mechanisms of the pre-incubation center as an outcome of its services and facilities on components of mobile game development team effectiveness. By emulating a world ‘under normal circumstances,’ this abstraction
inevitably engenders imperfection in the percipient, i.e., the limits in the system beget limits in the inquiry and, ultimately, limits in human cognition. Understanding the limits of cognition is, thus, ipso facto, crucial for developing realistic decision-making models and designing effective interventions (Kahneman, 2003). On that account, Stake (1995) prescribes that qualitative researchers must be aware of how their own biases and cognitive limitations may shape their interpretation of data and must take steps to mitigate these effects.

According to Gartner (1985), a new venture combines elements from four dimensions: the individuals involved, the type of organization created, the surrounding environment, and the process of starting the venture. It is increasingly recognized that the creation of new ventures, the mobile game development ecosystem herein, involves various dimensions and that the interaction between the entrepreneur, the firm, and the environment within the dynamic system of new enterprise development is complex (Lichtenstein, Dooley, & Lumpkin, 2006; Shepherd, 2011). Scholars recommend that to facilitate the rapid growth of firms and contribute to theory and practice, researchers should shift their focus from "incubators" to the underlying or internal processes of its facilities (Ahmad, 2014). In doing so, researchers can identify the conditions that are most likely to facilitate early-stage mobile game development through team effectiveness.

Concordantly, the findings of this research imply that, although the implications can be put forward in light of diverse business theories that attempt to conceptualize how an incubator can best facilitate new ventures in a broad sense, these implications are also applicable to conceptualize the impact mechanisms of pre-incubation on the incubatee team effectiveness. This inference is not judged from the impact of pre-incubation in strategic entrepreneurship (Ireland, Hitt & Sirmon, 2003) in a broader sense, i.e., providing the teams with physical space (Cohen, 2013), credibility (Tötterman & Stan, 2005), or business networking opportunities (McAdam & Marlow, 2008), just as in this case. Instead, this implication depends more on a ‘relational capital’ (Dyer & Singh, 1998) oriented understanding of the interrelation between pre-incubator and incubatee teams, all the more so, the subject matter is team effectiveness.
The fact remains that in an ecosystem where reality is modeled by simplifying unilateral relationships, we can still achieve an understanding of the effects of pre-incubation on team effectiveness on the basis of our underpinning conceptual framework. So indeed, the findings are evidence of the fact that pre-incubation embraces all of the three coordinating mechanisms that stem from ATEM. Aside from our conceptual framework, this implication is also consistent with previous research demonstrating the significant role of these coordinating mechanisms, i.e., communication (Cooper, Hamel, & Connaughton, 2012; Lira et al., 2007; Onağ & Tepeci, 2014), mutual trust (Costa, Roe & Taillieu, 2001; Hakonen & Lipponen, 2009; Zahoor, Pepple & Choudrie, 2021), and shared mental models (Hensel & Visser, 2019; Kraiger & Wenzel, 1997; Mathieu et al., 2000) for team effectiveness in different structures. Of course, it should be kept in mind that these mechanisms are value-laden and find their meaning in the peculiar socioeconomic and sociocultural dynamics of the particular business ecosystem.

This research has specific contributions that can be emphasized from several aspects. Even though there are more, to be in line with Wolcott’s advice (1994) aforesaid, I found it appropriate to consider its contributions from three perspectives. Above all, the findings have revealed the impact of a pre-incubation center on mobile game development team effectiveness through the components of team effectiveness by means of coordinating mechanisms defined by ATEM. By favor of this research, evidence has been gathered to support the applicability of the ATEM team effectiveness model, which is essentially customized for agile software development teams in the context of mobile game development. At this juncture, it is important to emphasize that adopting a team effectiveness model that is highly suitable for the sui generis nature of mobile game development impacts exploring and confirming team effectiveness in this context. The long and the short of it, this study, in a way, represents a confirmation of the ATEM model in a different context, although it may be closely related to the intended application area in certain aspects. It would be appropriate to clarify that in this regard, explicit impacts primarily refer to the contributions that pre-incubation can directly provide to team effectiveness. On the other hand, implicit impacts mainly arise from the mechanisms of autonomy, learning by doing, learning by seeing or learning by asking facilitated by pre-incubation, which serve as means through which teams themselves generate and achieve impact.
Another contribution of this study is that it reveals the positive catalytic effect of pre-incubation on ensuring team effectiveness in mobile game development teams, even on the underlying practical mechanisms, thanks to its interpretative slant. Aside from the findings in Table 4, the research has revealed that 'hidden' mechanisms, such as learning or providing a shared workspace play significant roles in triggering the coordinating mechanisms that affect the components underlying ATEM's team effectiveness. These mechanisms offer important benefits in establishing the team effectiveness, according to the adopted conceptual framework. So indeed, previous studies also confirm that learning is necessary for teams to be effective (Tiwana, 2004).

Strode et al. (2022) touch on learning as it is encompassed within shared mental models, redundancy, and peer feedback. There is a direct relationship between team learning and team effectiveness (Dingsøyr et al., 2016), and even Janz (1999) emphasizes the significant role of cooperative learning, and Lin, Huang and Ko (2020) emphasize the mediator role of knowledge-sharing as catalyzers in the way of fulfilling team effectiveness, which are two of the yet another underlying mechanism this study revealed.

The existence of shared mental models for effective adaptability (Salas et al., 2005), the role of shared mental models for cooperative learning and mutual performance monitoring (Fransen, Kirschner, & Erkens, 2011), which corresponds to peer feedback according to ATEM, the role of mutual trust on knowledge sharing (Alsharo, Gregg & Ramirez, 2017), improving network perspective (Cross et al., 2008), team cohesion and communication on redundancy and team orientation (Onağ & Tepeci, 2014) and the mutual impact of shared mental models and communication on overall team effectiveness (Zoogah, Noe & Shenkar, 2015) constitute pro-arguments for the findings of this research.

The last but not least, it is noteworthy that all of these coordinating mechanisms fundamentally rely not on hard skills but on the soft skills of team members. All coordinating mechanisms ATEM proposes essentially rely on team members' team cognition and soft skills rather than their technical competencies. Sure enough, according to a systematic review (Buljac-Samardzic et al., 2010), there is a positive association between the intervention and non-technical team skills.
I would like to mention not as implications but as clarifying closing notes that ATEM essentially serves as an explanatory model by describing and elucidating the components contributing to agile team effectiveness, but not limited to this. (Strode et al., 2022). Team effectiveness models may also possess predictive practicality, as teams can employ them as a guiding framework for their actions (Cohen, Ledford Jr, & Spreitzer, 1996; Gregor, 2006). This study revealed with its prospects that ATEM satisfies this property. Beyond the findings that can be supported by the team effectiveness literature, particularly the underpinning conceptual framework that sheds light on the impact mechanisms, this study has also revealed some findings that do not directly correspond to the model’s components. For instance, although it was not intended to directly support the encouragement of team autonomy and intra-team communication, it has been found that there are indirect directions of pre-incubation activities in this regard. This means there are some hidden mechanisms in this ‘interplay,’ and it is recommended that they be framed and further investigated in future studies. Please refer to Section 5.3 for further research recommendations.

5.2. Practical Implications

The pre-incubation process is neither a black box nor a dyadic concept. The success of incubation in terms of quality, quantity, frequency, intensity, scale, scope, and final results all rely on myriad factors unique to the relationship between the two parties involved (Ahmad & Ingle, 2011). According to the literature review conducted by McAdam and McAdam (2008), successful team building is primarily influenced by individual skills and personality characteristics, which are seemingly difficult for incubator organizations to directly impact. Mian et al. (2016) highlight that determining what type of pre-incubation mechanisms and policies are most conducive to achieving the desired results is very much mission-driven and dependent on a specific context. This remark is in line with McAdam, Miller, and McAdam (2016), who emphasize ‘local factors’ by suggesting that rather than adopting a one-size-fits-all approach, any policy should address the significance of considering regional factors and ecosystem characteristics. Indeed, Phan, Siegel, and Wright (2005) note that the peculiarities of geographic, political, social, and economic systems related to science parks, incubators, and accelerators may hinder the development of a generalizable theory. Furthermore, it should be kept in mind that since team effectiveness
components are not mutually exclusive, policy overtures should have a holistic approach to address these phenomena.

I divided the practical implications into two phases. First, in view of transferability, I provided precursor literature-backed general recommendations on how pre-incubation activities should be structured to enhance team effectiveness. Then, I compiled a list of context-specific recommendations, categorized by prospects, to ensure that teams can get the most out of pre-incubation resources and fulfill the participants’ expectations. This approach expands the practical implications beyond team effectiveness, providing insight into the areas where the pre-incubation center should concentrate while considering the overall incubatee satisfaction with pre-incubation services.

The following recommendations are more general and can apply to any context. “Business support is seen as a continuum from ‘laissez-faire’ to ‘strong intervention’” (Bergek & Norrman, 2008, p. 20). In this respect, Baraldi and Havenvid (2016) suggest some policy implications by breaking away from the dominant focus in the current literature on incubators as organizations that offer a predetermined set of services to their clients, such as renting facilities, coaching, training, and networking. Instead, they take a multi-level approach and propose that incubators should be regarded as strategic players creating value on a global scale, and their decisions and interactions should be analyzed using different business strategy streams, with the study identifying six key strategic drivers of business incubation: (1) positioning in the value chain, (2) risk-taking/time perspective, (3) revenue model, (4) governance/control, (5) internationalization, and (6) cooperation/competition (Baraldi & Havenvid, 2016).

Emanating particularly from the policy generator code categories of this research, I present the practical implications that have emerged below in bullet points:

- **Providing Team-Building Workshops:** Regarding team effectiveness as the primary focus, one key policy implication is to provide team-building workshops. Katzenbach and Smith (1993) note that building a strong team requires careful attention to team dynamics, including effective communication, trust, and collaboration, which are the coordinating mechanisms this research addressed. By providing incubatee teams with team-
building workshops, pre-incubation programs can help teams develop these skills and improve their overall team effectiveness. These workshops could include team-building exercises, more ‘pitch stops,’ i.e., feedback sessions, and diversified training services in needed subjects per team expectations. In brief, as an implication, pre-incubation programs can organize team-building workshops to help incubatees build strong and effective teams. These workshops could focus on communication, trust-building, conflict resolution, and other essential skills for effective teamwork.

⇒ **Encourage Diversity:** Another important implication is to encourage diversity within teams. Belbin (1993) notes that team members often have different strengths and weaknesses and that a diverse team can be more innovative and effective than a homogenous one. It would be appropriate to clarify the concept of diversity at this point. By diversity, I mean the ability to guide teams towards different genres within the mobile gaming world, such as mythcore, hybrid casual, hyper-casual, role-playing games (RPG), massively multiplayer online role-playing games (MMORPG), and strategy games, when necessary. Encouraging diversity can be achieved through pivot support for teams that face challenges in terms of productivity or monetization. It can also involve the balanced acceptance of aspiring teams who desire to develop games in different styles in pre-incubation centers. Pre-incubation programs can encourage business model diversity by providing access to diverse networks on diverse mobile game genres and resources for recruiting and hiring necessary skills.

⇒ **Providing Mentorship:** Pre-incubation programs can mentor incubatees to help them build effective teams. Mentors can guide and advise on team building and help incubatees identify and address any challenges they may face. Tuckman’s (1965) developmental sequence in small groups suggests that mentorship can be particularly effective in the early stages of team development, when teams may be experiencing uncertainty and ambiguity.

⇒ **Fostering a Collaborative Environment:** Pre-incubation programs can also foster a collaborative environment encouraging both teamwork and collaboration among different teams. This can be achieved by organizing team-building activities, creating shared spaces where teams can work together, and encouraging teams to share their knowledge and resources with each other.
Katzenbach and Smith (1993) note that successful teams are those that have a shared sense of purpose and are committed to working together to achieve their goals. By providing shared workspaces, organizing team-building activities, and encouraging incubatees more to share their knowledge and resources with each other, pre-incubation programs can help create a collaborative environment that supports effective teamwork. While creating a collaborative environment is one of the indirect benefits of the pre-incubation center for team effectiveness, the significant role of shared workspace for startups has been emphasized in previous studies (Akmalia & Adhitama, 2022; Berbegal-Mirabent, 2021; Cohen et al., 2019). In a nutshell, fostering a collaborative working environment can primarily bolster the redundancy and peer feedback components by serving as a ‘talent pool’ and a ‘home,’ as stated by participants.

⇒ **Providing Resources**: Pre-incubation programs can provide teams with resources to help them build effective teams, such as access to team-building tools and resources and funding to recruit team members, particularly the most needed positions, such as the game designer in this context. By providing these resources, pre-incubation programs can help teams to overcome common barriers to team development and improve their overall effectiveness. Pre-incubation programs should provide incubatees with more financial or physical resources. This could include access to team-building tools and resources and funding to hire additional team members if needed.

Apart from these matters that have a direct impact on team effectiveness, ATOM and any game-thematic pre-incubation program in a similar sociocultural context (please refer to Section 3.6.2) can implement the following policy implications to meet the respective needs and, accordingly, foster overall quality of service:

⇒ **Protecting IPR**: ATOM could develop policies and procedures that help protect IPR, an issue that emerged due to the hypercasual ‘frenzy.’ This could include working with legal experts to draft contracts and agreements that protect these rights.

⇒ **Directly Supporting Game Publishing**: ATOM could focus on providing more direct support to teams in the game publishing industry. This could
include offering training programs and resources that help teams develop their games and providing funding and other resources to help them launch and market their games.

⇒ **Diversifying Business Models**: ATOM could encourage teams to diversify their business models and explore new revenue streams. This could include offering training programs and resources that help teams develop new products and services and providing access to funding and other resources that can help them explore new business models.

⇒ **Finding ‘Mentor’ Angel Investors**: ATOM could work to identify and recruit angel investors who can provide customized guidance to teams. This could include developing mentorship programs that connect teams with experienced angel investors who not only fund but also can help them develop their business acumen.

⇒ **Organizing More Diverse Training**: By taking the demand into consideration, ATOM could organize more diverse training programs that cover a range of topics related to entrepreneurship and business development. This could include offering training programs on topics such as marketing, finance, and management.

⇒ **Providing Investment Opportunities**: ATOM could work to provide investment opportunities to teams by connecting them with potential investors and providing access to funding resources. This could include developing partnerships with venture capital firms and other organizations that can fund and support teams.

⇒ **Offering More Managerial and Marketing Training**: ATOM could offer more training programs to help teams develop (1) the skills needed to effectively manage their businesses and (2) effective marketing strategies. This could include training programs on topics such as leadership, team management, strategic planning, game publishing, and advertising.

⇒ **Raising Funds Dedicated to the Industry**: ATOM could work to raise funds that are dedicated specifically to supporting teams in the mobile game industry. This could include developing partnerships with organizations and companies that are interested in supporting teams in the industry.
⇒ **Setting More Pitch Stops:** ATOM could set up more pitch stops and other events that allow teams to give feedback to each other. Accordingly, this could help teams fine-tune their projects and enhance their overall product quality.

⇒ **Providing Dedicated Legal Consultants:** ATOM could provide dedicated legal consultants who can help teams navigate legal issues related to business development and entrepreneurship. This could include providing advice and support on intellectual property, contracts, and employment law issues.

⇒ **Attending More Global Events:** ATOM could encourage teams to attend more global events and conferences to gain exposure and connect with potential investors and partners.

⇒ **Intertwining with the Game Industry:** ATOM could work to create more connections and partnerships with other organizations and companies in the game industry. This could include developing partnerships with game developers, publishers, and other industry players to provide incubatees with access to resources and support.

⇒ **Supporting Teams on Pivot:** ATOM could support teams that are looking to pivot their business model or strategy due to changes in the industry or market. This could include providing mentorship and coaching programs that help teams develop new ideas and strategies and providing access to funding and other resources to help them execute their pivot effectively.

To sum up, by implementing these policy implications, ATOM could become a more effective pre-incubation program that provides incubatees with the resources, support, and connections they need to succeed in the mobile game industry. These policies would address a wide range of expectations from the interviewed participants and could help create a thriving ecosystem to drive innovation and growth in the mobile game industry. In effect, ATOM’s institutional support, to be more precise, its ‘ad hoc support’ in a fixer manner as each team is different in essence and inherently may have unique conditions and problems, and thus may require unique solutions. This means that it would be more beneficial for a pre-incubation center to provide support in a fixer role, offering solutions that directly impact team effectiveness and meet the expectations of both teams and center managers.
5.3. **Further Research**

To stimulate discussion and encourage further studies, the scope of this study can be revisited through different theoretical lenses, such as the Real Options View (Hackett & Dilts, 2004), New Venture Creation View (Campbell, Kendrick & Samuelson, 1985; Plosila & Allen, 1985), Virtual Incubation View (Nowak & Grantham, 2000), Structural Contingency Theory (Ketchen Jr, Thomas, & Snow, 1993), Institutional Theory (Guerrero & Urbano, 2012; Phan et al., 2005), or Social Network Theory (Hansen et al., 2000; Tötterman & Stan, 2005; Evald & Bager; 2008), which have essentially different but contextually relevant approaches to this scope, which can be asserted in view of the findings. Although these perspectives primarily offer recommendations for structuring new ventures through empirical data on incubation facilities, similar perspectives can also be applied to pre-incubation facilities, but with (1) impact mechanisms on team effectiveness and (2) social mechanisms of pre-incubation as the primary focus. Based on the findings, it appears that studying this topic through differentiating theoretical lenses will be beneficial in gaining unique insights, particularly in the specific context of mobile game development, which has not yet been explored in depth. I believe that approaching this context through theoretical frameworks is a leading potential topic for further research.

Besides theoretical lenses, the findings of this study can pave the way for several other studies in different ways.

⇒ In light of these findings, a team effectiveness model can be developed to determine the impact of pre-incubation on mobile game development team effectiveness as further research. As a novel contribution to the literature, such a prospective study will enable the development of a context-specific custom team effectiveness model specific to mobile game development, taking into account the sui generis dynamics of the field.

⇒ This study can be transferred to another study with the same research question in a different context but, to an extent, a relevant context, as demarcated in Section 3.6.2. In this way, additional empirical data will be obtained, and the compatibility of the adopted conceptual framework with the context will be better demonstrated.
A different team effectiveness model can be applied to the same context, and the findings of these two studies can be compared. Such a study would facilitate understanding how suitable a custom team effectiveness model is for the context. Of course, it should be noted that, it would be beneficial to ensure that the team effectiveness model used aligns with the unique dynamics of mobile game development, just like it does here.

The same research can be applied to other pre-incubation centers worldwide with different game themes using the same model. Such a prospective study, ceteris paribus, would be beneficial in identifying the differences in socio-cultural dynamics between the pre-incubation center and mobile game development teams.

Further research can be conducted to understand which mechanisms can meet the expectations of team members and managers, considering the prospects highlighted in this study as evidence. Such a study would be useful in providing empirical data to strengthen policy implications derived from expectations.


Habermas, J. (1967). *Zur Logik der Sozialwissenschaften [On the logic of the social sciences]*. Philosophische Rundschau. (Original work published in German)


A. APPROVAL OF METU HSEC

APPENDICES
B. INTERVIEW GUIDE

In-depth interviews were conducted within the framework of this draft interview guide, with follow-up questions directed according to the course of the interviews and taking data adequacy into consideration.

Group #1: Current mobile game development teams receiving pre-incubation facilities from ATOM

1. Could you introduce yourself?
2. Could you introduce your team? What is your responsibility in the team? What are the duties of your teammates?
3. Could you describe your team-building process? What is the impact of ATOM on your team-building process?
4. Does your team have a team leader? If yes, how has the team leader been identified in your team-building process? What has the impact of ATOM been in this process?
5. How does the team leader coordinate and manage the team's activities? What effect does ATOM have on this process?
6. What strategy do team members follow in observing, evaluating, and giving feedback to each other on the performance of their teammates? What effect does ATOM have on this process?
7. How do team members help each other with teammates' responsibilities? How do team members balance their teammates' workloads? What effect does ATOM have on this process?
8. How do team members help their teammates to set common team goals? How is the inter-team interaction process managed in terms of establishing common goals? What effect does ATOM have on this process?
9. How do team members adapt to changing internal and external conditions during mobile game development? How do team members help their teammates in this adaptation process? What effect does ATOM have on this process?
10. Previous questions correspond to the components of this research's underlying team effectiveness model. What has been the most significant impact ATOM has ever had on your team's effectiveness?

11. How would you expect ATOM to contribute to the team effectiveness components we discussed?

12. Could you share an anecdote you must remember within our discussion framework?

**Group #2:** Mobile game development teams that have previously received pre-incubation service and successfully graduated from ATOM

1. Could you introduce yourself?

2. Could you introduce your team? What is your responsibility in the team? What are the duties of your teammates?

3. Could you describe your team-building process? What was the impact of ATOM on your team-building process?

4. Does your team have a team leader? If yes, how was the team leader identified in your team-building process? What was the impact of ATOM in this process?

5. How did the team leader coordinate and manage the team's activities? What effect did ATOM have on this process?

6. What strategy did team members follow in observing, evaluating, and giving feedback to each other on the performance of their teammates? What effect did ATOM have on this process?

7. How did team members help each other with teammates' responsibilities? How did team members balance their teammates' workloads? What effect did ATOM have on this process?

8. How did team members help their teammates to set common team goals? How was the inter-team interaction process managed in terms of establishing common goals? What effect did ATOM have on this process?

9. How did team members adapt to changing internal and external conditions during mobile game development? How did team members help their teammates in this adaptation process? What effect did ATOM have on this process?
10. Previous questions correspond to the components of this research's underlying team effectiveness model. What was the most significant impact ATOM has ever had on your team's effectiveness?

11. How would you expect ATOM to contribute to the team effectiveness components we discussed?

12. Could you share an anecdote you must remember within our discussion framework?

**Group #3:** Mobile game development teams that have previously received pre-incubation facilities within the ATOM but have not successfully graduated

1. Could you introduce yourself?

2. Could you introduce your team? What is your responsibility in the team? What are the duties of your teammates?

3. Could you describe your team-building process? What was the impact of ATOM on your team-building process?

4. Does your team have a team leader? If yes, how was the team leader identified in your team-building process? What was the impact of ATOM in this process?

5. How did the team leader coordinate and manage the team's activities? What effect did ATOM have on this process?

6. What strategy did team members follow in observing, evaluating, and giving feedback to each other on the performance of their teammates? What effect did ATOM have on this process?

7. How did team members help each other with teammates' responsibilities? How did team members balance their teammates' workloads? What effect did ATOM have on this process?

8. How did team members help their teammates to set common team goals? How was the inter-team interaction process managed in terms of establishing common goals? What effect did ATOM have on this process?

9. How did team members adapt to changing internal and external conditions during mobile game development? How did team members help their teammates in this adaptation process? What effect did ATOM have on this process?
10. Previous questions correspond to the components of this research's underlying team effectiveness model. What was the most significant impact ATOM has ever had on your team's effectiveness?
11. If you still needed to receive pre-incubation service within ATOM, could you acquire the skills you have gained regarding team effectiveness?
12. How would you expect ATOM to contribute to the team effectiveness components we discussed?
13. Could you share an anecdote you must remember within our discussion framework?

**Group #4: Current and former ATOM managers**

1. Could you introduce yourself?
2. What are (or were) your responsibilities at ATOM?
3. How do you think ATOM has an impact and contribution to team-building processes?
4. What effect and contribution does ATOM have in determining team leaders?
5. What is the impact and contribution of ATOM in the process of coordinating team activities by team leaders?
6. What effect and contribution does ATOM have on team members observing and evaluating the performances of their teammates and giving feedback to each other?
7. What effect and contribution does ATOM have on team members helping each other with teammates' responsibilities and balancing teammates' workloads?
8. How does ATOM contribute to the team members' helping their teammates set common goals and in the process of mutual interaction within the team in determining common goals?
9. What effect and contribution does ATOM have on team members' adaptation to changing internal and external conditions during the mobile game development process?
10. All these questions were related to the components of the concept of team effectiveness. In light of these components, what are ATOM's most important impacts and contributions on the effectiveness of the teams that receive pre-incubation facilities within your organization?
11. In light of these components, do you intend to provide more comprehensive support to teams for team effectiveness in the future? What can additional support be given to teams in this regard?

12. Could you share an anecdote you must remember within our discussion framework?
### C. CODEBOOK

1 Qualifiers of the individual participants

#### 1.1 Qualifications of managers

1.1.1 Participant acts as an “on-site producer”.

1.1.2 Participant has a relevant background in the industry.

1.1.3 Participant has previous team management experience.

1.1.4 Participant is/was an ATOM manager.

1.1.5 Participant takes a special interest in games.

#### 1.2 Qualifications of team member participants

1.2.1 Participant applied to ATOM individually.

1.2.2 Participant applied to ATOM with a team.

1.2.3 Participant declares himself to have an entrepreneurial spirit.

1.2.4 Participant has a relevant background for game development.

1.2.5 Participant has no previous team management experience.

1.2.6 Participant has previous team management experience.

1.2.7 Participant is a "one-man band".

1.2.8 Participant is a co-founder.

1.2.9 Participant is a PC and/or console game developer.

1.2.10 Participant is a game artist.

1.2.11 Participant is a game designer.

1.2.12 Participant is a narrative designer.

1.2.13 Participant is a software developer.

1.2.14 Participant is a sole founder.

1.2.15 Participant is an office manager.

1.2.16 Participant takes special interest in games.

2 Qualifiers of the teams

#### 2.1 On competencies

2.1.1 Team feels competent in communication.

2.1.2 Team feels competent in game design.

2.1.3 Team feels competent in marketing strategies.
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>2.1.4</td>
<td>Team feels competent in monetization.</td>
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<tr>
<td>2.1.5</td>
<td>Team feels competent in project scheduling.</td>
</tr>
<tr>
<td>2.1.6</td>
<td>Team feels no rivalry between incubatees.</td>
</tr>
<tr>
<td>2.1.7</td>
<td>Team feels technical incompetence.</td>
</tr>
<tr>
<td>2.2</td>
<td>On experiences</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Team experienced communication problems.</td>
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<td>2.2.2</td>
<td>Team experienced ego problems.</td>
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<tr>
<td>2.2.3</td>
<td>Team experienced external troubles.</td>
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<tr>
<td>2.2.4</td>
<td>Team experienced internal troubles.</td>
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<tr>
<td>2.2.5</td>
<td>Team experienced legal problems.</td>
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<tr>
<td>2.2.6</td>
<td>Team experienced monetization problem.</td>
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<tr>
<td>2.3</td>
<td>On interaction</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Team attributes being incubated to mainly psychologic factors.</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Team comprehended the importance of interaction with others.</td>
</tr>
<tr>
<td>2.3.3</td>
<td>Team comprehended the importance of intra-team communication.</td>
</tr>
<tr>
<td>2.3.4</td>
<td>Team gets feedback from their publisher.</td>
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<tr>
<td>2.3.5</td>
<td>Team is autonomous on decision making.</td>
</tr>
<tr>
<td>2.3.6</td>
<td>Team is eager to help other teams.</td>
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<tr>
<td>2.3.7</td>
<td>Team is open to ask direct support of ATOM management.</td>
</tr>
<tr>
<td>2.3.8</td>
<td>Team is willing to help other teams.</td>
</tr>
<tr>
<td>2.3.9</td>
<td>Team members are interdependent to each other.</td>
</tr>
<tr>
<td>2.3.10</td>
<td>Team members give feedback to each other.</td>
</tr>
<tr>
<td>2.3.11</td>
<td>Team practices shared decision-making.</td>
</tr>
<tr>
<td>2.3.12</td>
<td>Team requests labor-force participation from other teams.</td>
</tr>
<tr>
<td>2.3.13</td>
<td>Teams give feedback to each other.</td>
</tr>
<tr>
<td>2.3.14</td>
<td>Teams feel socialized at ATOM.</td>
</tr>
<tr>
<td>2.4</td>
<td>On learning</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Team applied to ATOM since they felt the need to be evaluated.</td>
</tr>
<tr>
<td>2.4.2</td>
<td>Team became self-acquainted at ATOM.</td>
</tr>
<tr>
<td>2.4.3</td>
<td>Team draws on their past experience.</td>
</tr>
<tr>
<td>2.4.4</td>
<td>Team gained scheduling flexibility.</td>
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<tr>
<td>2.4.5</td>
<td>Team learns by asking to other teams.</td>
</tr>
<tr>
<td>2.4.6</td>
<td>Team learns by seeing the other teams.</td>
</tr>
</tbody>
</table>
2.4.7 Team learns by trial and error.
2.4.8 Team learns from the failures of other teams.
2.4.9 Team learns from the successes of other teams.
2.4.10 Team learns project management in ATOM.
2.4.11 Team realized that they need to pivot.
2.4.12 Team was initially not self-acquainted.

2.5 On strategy development
2.5.1 Team develops alternative plans.
2.5.2 Team develops data-driven strategy.
2.5.3 Team develops strategy focused on available resources.
2.5.4 Team develops strategy focused on budget.
2.5.5 Team develops strategy focused on controlled growth.
2.5.6 Team develops strategy focused on market analysis.
2.5.7 Team develops strategy focused on monetization.
2.5.8 Team develops strategy focused on rigid deadlines.
2.5.9 Team develops strategy focused on their principles.
2.5.10 Team has conditioned itself to stand on its own feet.
2.5.11 Team pivoted.

2.6 On team formation
2.6.1 Team comprehended the importance of team chemistry.
2.6.2 Team had to downsize.
2.6.3 Team has a tendency to team up with individuals.
2.6.4 Team leaders stand out with their hard skills.
2.6.5 Team leaders stand out with their soft skills.
2.6.6 Team separated roles according to hard skills.
2.6.7 Team shows a tendency towards homophily.

2.7 On the specifics
2.7.1 Team has a "one point of contact".
2.7.2 Team is a multi-partner company.
2.7.3 Team is a sole proprietorship company.
2.7.4 Team received a seed funding.
2.7.5 Team was incorporated before joining ATOM.
2.7.6 Team was incorporated in ATOM.
3 Qualifiers of ATOM

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>3.1</td>
<td>ATOM has an impartial attitude towards incubatees.</td>
</tr>
<tr>
<td>3.2</td>
<td>ATOM is a catalyzer.</td>
</tr>
<tr>
<td>3.3</td>
<td>ATOM is a mediator.</td>
</tr>
<tr>
<td>3.4</td>
<td>ATOM is a moderator.</td>
</tr>
<tr>
<td>3.5</td>
<td>ATOM is a prominent game center of Turkey.</td>
</tr>
<tr>
<td>3.6</td>
<td>ATOM is a role model for prospective pre-incubation centers.</td>
</tr>
<tr>
<td>3.7</td>
<td>ATOM is a talent pool.</td>
</tr>
<tr>
<td>3.8</td>
<td>ATOM is a thematic business hub.</td>
</tr>
<tr>
<td>3.9</td>
<td>ATOM is a unifier.</td>
</tr>
<tr>
<td>3.10</td>
<td>ATOM is always eager to help teams.</td>
</tr>
<tr>
<td>3.11</td>
<td>ATOM is an efficient pre-incubation center.</td>
</tr>
<tr>
<td>3.12</td>
<td>ATOM is an unexampled pre-incubation center.</td>
</tr>
<tr>
<td>3.13</td>
<td>ATOM is representative in global platforms.</td>
</tr>
<tr>
<td>3.14</td>
<td>ATOM is the first pre-incubation center in a national technopolis.</td>
</tr>
<tr>
<td>3.15</td>
<td>ATOM is the first thematic pre-incubation center on games.</td>
</tr>
</tbody>
</table>

4 Impact mechanisms of ATOM

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>4.1</td>
<td>ATOM accelerates the incorporation processes of teams.</td>
</tr>
<tr>
<td>4.2</td>
<td>ATOM adapts to new regulations in venture capital funding.</td>
</tr>
<tr>
<td>4.3</td>
<td>ATOM allows teams to be physically together.</td>
</tr>
<tr>
<td>4.4</td>
<td>ATOM allows teams to become self-acquainted.</td>
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<tr>
<td>4.5</td>
<td>ATOM assists teams with project applications.</td>
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<tr>
<td>4.6</td>
<td>ATOM brings teams together through game design practices.</td>
</tr>
<tr>
<td>4.7</td>
<td>ATOM brings teams together through game jams.</td>
</tr>
<tr>
<td>4.8</td>
<td>ATOM catalyzes game production process.</td>
</tr>
<tr>
<td>4.9</td>
<td>ATOM catalyzes product development process.</td>
</tr>
<tr>
<td>4.10</td>
<td>ATOM changes its business model in response to industry needs.</td>
</tr>
<tr>
<td>4.11</td>
<td>ATOM closely monitors team development.</td>
</tr>
<tr>
<td>4.12</td>
<td>ATOM combines pre-incubation and incubation facilities.</td>
</tr>
<tr>
<td>4.13</td>
<td>ATOM constantly reminds teams that challenges are natural.</td>
</tr>
<tr>
<td>4.14</td>
<td>ATOM continues to support the teams even after their graduation.</td>
</tr>
<tr>
<td>4.15</td>
<td>ATOM creates network for teams to raise funds.</td>
</tr>
<tr>
<td>4.16 ATOM decides to prioritize the benefit of the community.</td>
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<tr>
<td>4.17 ATOM demonstrates a collaborative management approach.</td>
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<tr>
<td>4.18 ATOM disciplines teams.</td>
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<tr>
<td>4.19 ATOM does its best to resolve conflicts within the team.</td>
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<tr>
<td>4.20 ATOM embraces teams that develop games in different lanes.</td>
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<tr>
<td>4.21 ATOM emphasizes the importance of team chemistry.</td>
<td></td>
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<tr>
<td>4.22 ATOM emphasizes the importance of team communication.</td>
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<tr>
<td>4.23 ATOM encourages incubatees to form a team.</td>
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<tr>
<td>4.24 ATOM encourages intra-team communication.</td>
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<tr>
<td>4.25 ATOM encourages teams to always communicate with each other.</td>
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<tr>
<td>4.26 ATOM engages teams in the peripheral network.</td>
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<tr>
<td>4.27 ATOM evaluates the team as a whole rather than at member scale.</td>
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<tr>
<td>4.28 ATOM exceptionally admit individual applicants.</td>
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<tr>
<td>4.29 ATOM extends the incubation period of teams if needed.</td>
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<tr>
<td>4.30 ATOM follows observation-oriented strategies in team formation.</td>
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<tr>
<td>4.31 ATOM gives priority to unincorporated teams in admission.</td>
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<tr>
<td>4.32 ATOM gives teams a preview of potential future problems.</td>
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<tr>
<td>4.33 ATOM gives teams a sense of belonging to a community.</td>
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<tr>
<td>4.34 ATOM guides teams in business development processes.</td>
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<td>4.35 ATOM guides teams on taxes.</td>
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<tr>
<td>4.36 ATOM guides teams through their incorporation process.</td>
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<tr>
<td>4.37 ATOM has high tolerance in incubatee admission.</td>
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<tr>
<td>4.38 ATOM has the advantage of being close to METU.</td>
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<tr>
<td>4.39 ATOM help teams bring their ideas to life.</td>
<td></td>
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<tr>
<td>4.40 ATOM help teams increase their product quality.</td>
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<tr>
<td>4.41 ATOM helps teams find long-term partners.</td>
<td></td>
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<tr>
<td>4.42 ATOM helps teams pivot.</td>
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<tr>
<td>4.43 ATOM helps teams set periodic goals.</td>
<td></td>
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<tr>
<td>4.44 ATOM instills a culture of change in teams.</td>
<td></td>
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<tr>
<td>4.45 ATOM instills a high level of sharing culture in teams.</td>
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<tr>
<td>4.46 ATOM keeps teams afloat in such a competitive industry.</td>
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<tr>
<td>4.47 ATOM keeps teams informed of incentives.</td>
<td></td>
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<tr>
<td>4.48 ATOM enables teams to socialize with their colleagues.</td>
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<tr>
<td>4.49</td>
<td>ATOM makes teams feed distinguished.</td>
</tr>
<tr>
<td>4.50</td>
<td>ATOM makes teams feel like they are part of the ecosystem.</td>
</tr>
<tr>
<td>4.51</td>
<td>ATOM makes teams part of the game development ecosystem.</td>
</tr>
<tr>
<td>4.52</td>
<td>ATOM notifies teams of available programs.</td>
</tr>
<tr>
<td>4.53</td>
<td>ATOM offers teams a great networking opportunity.</td>
</tr>
<tr>
<td>4.54</td>
<td>ATOM offers teams an environment for exchange of ideas.</td>
</tr>
<tr>
<td>4.55</td>
<td>ATOM orientes newcomer incubates.</td>
</tr>
<tr>
<td>4.56</td>
<td>ATOM orientes teams through their goals.</td>
</tr>
<tr>
<td>4.57</td>
<td>ATOM particularly emphasizes the importance of game design.</td>
</tr>
<tr>
<td>4.58</td>
<td>ATOM predicts team capabilities at application phase.</td>
</tr>
<tr>
<td>4.59</td>
<td>ATOM proactively helps teams bring out their &quot;natural leader&quot;.</td>
</tr>
<tr>
<td>4.60</td>
<td>ATOM proactively raises awareness of teams.</td>
</tr>
<tr>
<td>4.61</td>
<td>ATOM promotes autonomy in teams' internal affairs.</td>
</tr>
<tr>
<td>4.62</td>
<td>ATOM protects teams in difficult situations.</td>
</tr>
<tr>
<td>4.63</td>
<td>ATOM provides an environment for know-how transfer.</td>
</tr>
<tr>
<td>4.64</td>
<td>ATOM provides both regular and on-demand feedback to teams.</td>
</tr>
<tr>
<td>4.65</td>
<td>ATOM provides incubates a suitable environment to form team.</td>
</tr>
<tr>
<td>4.66</td>
<td>ATOM provides teams with a perfect learning environment.</td>
</tr>
<tr>
<td>4.67</td>
<td>ATOM provides teams with a prestigious label.</td>
</tr>
<tr>
<td>4.68</td>
<td>ATOM provides teams with administrative support.</td>
</tr>
<tr>
<td>4.69</td>
<td>ATOM provides teams with administrative training.</td>
</tr>
<tr>
<td>4.70</td>
<td>ATOM provides teams with an environment for recruitment.</td>
</tr>
<tr>
<td>4.71</td>
<td>ATOM provides teams with an environment of solidarity.</td>
</tr>
<tr>
<td>4.72</td>
<td>ATOM provides teams with an environment of togetherness.</td>
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<tr>
<td>4.73</td>
<td>ATOM provides teams with an environment of transparency.</td>
</tr>
<tr>
<td>4.74</td>
<td>ATOM provides teams with an environment of trust.</td>
</tr>
<tr>
<td>4.75</td>
<td>ATOM provides teams with consultancy services.</td>
</tr>
<tr>
<td>4.76</td>
<td>ATOM provides teams with free or almost free office space.</td>
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<tr>
<td>4.77</td>
<td>ATOM provides teams with legal advice.</td>
</tr>
<tr>
<td>4.78</td>
<td>ATOM provides teams with marketing training.</td>
</tr>
<tr>
<td>4.79</td>
<td>ATOM provides teams with network support for their growth.</td>
</tr>
<tr>
<td>4.80</td>
<td>ATOM provides teams with regular mentorship services.</td>
</tr>
<tr>
<td>4.81</td>
<td>ATOM provides teams with regular training support.</td>
</tr>
<tr>
<td>4.82</td>
<td>ATOM provides teams with support in process management.</td>
</tr>
<tr>
<td>4.83</td>
<td>ATOM provides teams with technical training.</td>
</tr>
<tr>
<td>4.84</td>
<td>ATOM regularly organizes events.</td>
</tr>
<tr>
<td>4.85</td>
<td>ATOM retains the talented incubatees as much as possible.</td>
</tr>
<tr>
<td>4.86</td>
<td>ATOM speeds up the work by reminding of physical constraints.</td>
</tr>
<tr>
<td>4.87</td>
<td>ATOM speeds up the work by setting deadlines when needed.</td>
</tr>
<tr>
<td>4.88</td>
<td>ATOM supports teams in business plan development.</td>
</tr>
<tr>
<td>4.89</td>
<td>ATOM supports teams in creating revenue model.</td>
</tr>
<tr>
<td>4.90</td>
<td>ATOM supports teams in their commercialization process.</td>
</tr>
<tr>
<td>4.91</td>
<td>ATOM supports the sharing culture as much as possible.</td>
</tr>
<tr>
<td>4.92</td>
<td>ATOM takes the initiative to support the teams whenever needed.</td>
</tr>
</tbody>
</table>

5 Expectations of teams from ATOM

5.1 Expectations of managers

5.1.1 I wish ATOM could take the teams to GDC every year.

5.1.2 I wish ATOM had better facilities to team up with more individuals.

5.1.3 I wish ATOM had its own financial resources.

5.1.4 I wish ATOM itself was a game publisher.

5.1.5 I wish ATOM would support teams in hiring game designers.

5.1.6 I wish I had applied a little more formidable management.

5.1.7 I wish I had better developed myself in game design.

5.1.8 I wish I had developed myself better in technical matters.

5.2 Expectations of teams

5.2.1 I wish ATOM could protect our intellectual property rights.

5.2.2 I wish ATOM was a direct problem solver rather than mediator.

5.2.3 I wish ATOM would give more opportunities.

5.2.4 I wish ATOM would directly support game publishing.

5.2.5 I wish ATOM would diversify the teams' business models.

5.2.6 I wish ATOM would find "mentor" angel investors.

5.2.7 I wish ATOM would organize more diverse trainings.

5.2.8 I wish ATOM would provide investment opportunities.

5.2.9 I wish ATOM would provide more managerial trainings.

5.2.10 I wish ATOM would provide more marketing trainings.

5.2.11 I wish ATOM would raise funds dedicated to the industry.
<table>
<thead>
<tr>
<th>5.2.12</th>
<th>I wish ATOM would set more pitch stops.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.13</td>
<td>I wish there were dedicated legal consultants in ATOM.</td>
</tr>
<tr>
<td>5.2.14</td>
<td>I wish there were more events to get together.</td>
</tr>
<tr>
<td>5.2.15</td>
<td>I wish we could attend more global events.</td>
</tr>
<tr>
<td>5.2.16</td>
<td>I wish we could be more intertwined with the game industry.</td>
</tr>
</tbody>
</table>

### 6 Sui generis nature of mobile game industry

<table>
<thead>
<tr>
<th>6.1</th>
<th>Hyper casual frenzy increased the chance of landing a unicorn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2</td>
<td>Hyper casual game development is not sustainable.</td>
</tr>
<tr>
<td>6.3</td>
<td>Lack of IPR of hyper casual games is a problem.</td>
</tr>
<tr>
<td>6.4</td>
<td>Publisher has a say in the mobile game industry.</td>
</tr>
<tr>
<td>6.5</td>
<td>Publishers keep teams from learning marketing themselves.</td>
</tr>
<tr>
<td>6.6</td>
<td>Publishers were making offers to every studio in frenzy.</td>
</tr>
<tr>
<td>6.7</td>
<td>Hyper casual frenzy damaged the sharing culture.</td>
</tr>
<tr>
<td>6.8</td>
<td>The ministry does not understand the dynamics of the industry.</td>
</tr>
<tr>
<td>6.9</td>
<td>The regulations are so new that it is difficult to adapt.</td>
</tr>
<tr>
<td>6.10</td>
<td>Unpredictability of game trends makes target setting difficult.</td>
</tr>
<tr>
<td>6.11</td>
<td>Trends in the mobile game industry have suddenly changed.</td>
</tr>
<tr>
<td>6.12</td>
<td>Mobile game genres are gradually converging.</td>
</tr>
<tr>
<td>6.13</td>
<td>Publisher contracts are constantly changing.</td>
</tr>
<tr>
<td>6.14</td>
<td>There is a publisher dominance in the mobile game industry.</td>
</tr>
<tr>
<td>6.15</td>
<td>It is very difficult to earn money compared to another product.</td>
</tr>
<tr>
<td>6.16</td>
<td>Hyper casual game industry has reached a saturation point.</td>
</tr>
<tr>
<td>6.17</td>
<td>Having to constantly come up with novel ideas challenges teams.</td>
</tr>
<tr>
<td>6.18</td>
<td>Hyper casual game studios need to pivot immediately.</td>
</tr>
<tr>
<td>6.19</td>
<td>Hyper casual studios depend on the publisher to earn money.</td>
</tr>
<tr>
<td>6.20</td>
<td>It takes close connections or a high budget to be able pivot.</td>
</tr>
<tr>
<td>6.21</td>
<td>Coming to the game industry voluntarily causes exploitation.</td>
</tr>
</tbody>
</table>

### 7 Sui generis nature of mobile game development

<table>
<thead>
<tr>
<th>7.1</th>
<th>Mobile game development is teamwork.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2</td>
<td>Agile methodologies are applied in mobile game development.</td>
</tr>
<tr>
<td>7.3</td>
<td>Mobile game development is open to data-driven projection.</td>
</tr>
<tr>
<td>7.4</td>
<td>Mobile game projects are more predictable in terms of results.</td>
</tr>
<tr>
<td>7.5</td>
<td>There are different specializations that complement each other.</td>
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<tr>
<td>7.6</td>
<td>Much of the game is marketing and design rather than software.</td>
</tr>
<tr>
<td>7.7</td>
<td>Game designer has a very important role in game development.</td>
</tr>
<tr>
<td>7.8</td>
<td>Game development can sometimes be unnecessarily difficult.</td>
</tr>
<tr>
<td>7.9</td>
<td>Hyper casual mobile game development requires being very fast.</td>
</tr>
<tr>
<td>8</td>
<td>Out of context statements</td>
</tr>
</tbody>
</table>
D. TURKISH SUMMARY / TÜRKÇE ÖZET


Mobil oyun endüstrisindeki küresel eğilimler, ulusal ölçekte de kendisini göstermektedir. Son üç yılın Gaming in Turkey raporlarına göre endüstrinin, çevrimiçi nüfus, akıllı telefon kullanıcıları ve mobil oyuncuların artışına bağlı olarak giderek artan yatırımlar almaktadır (2021, 2022, 2023). Yatırımların %54'ü oyun ve finans teknolojisi sektörlerinde gerçekleştirilmiş olup aslan payını mobil oyun endüstrisi almıştır. Bu sektörler, yatırım miktarları konusunda yeni rekorlar kıracak önceki yılların yatırım miktarlarını geride bırakmıştır (Gaming in Turkey, 2022). Dünya genelindeki uluslararası politikadaki dalgalanmaların olumsuz ekonomik etkilerine rağmen, 2022 yılında en fazla tamamlanan oyun anlaşmasıda İstanbul, Avrupa'da Londra'nın ardından ikinci sıradadır yer almış, küresel sıralamada da beşinci sıraya yükselmiştir (Gaming in Turkey, 2022). Türkiye'nin hisse senetleri borsada işlem görmeden 1 milyar dolar değerlemeye ulaşan ilk şirketi bir oyun şirketi olan Peak


Mobil oyun geliştirme, yazılım geliştirmeden ibaret olmayıp (Annanperä vd., 2018), ses, sanat, yapay zeka, kontrol sistemleri ve özellikle insan faktörlerinin anlaşılması açısından diğer yazılım geliştirme ekiplerine göre farklı bilgi ve beceriler gerektirmektedir (Aleem vd., 2016). Daha da zorlayıcı olan, mobil oyun geliştirmedeki en dikkate değer eğilimlerden biri, her ne kadar son dönemlerde yavaşlama eğilimi göstermekte olsa da, kısa sürelerde oynaması için tasarlanmış basit, kolay oynanabilir aşırı gündelik (hypercasual) oyunların geliştirilmesidir (Kim, Huh ve Lee, 2020). Aşırı
gündelik oyunlar sradan oyuncular arasında popüler olup geliştiriciler için oldukça iyi gelir fırsatı sunabilse de, bu tür oyunların geliştirilmesi, hızlı prototipleme ve test etme ihtiyacı gibi benzersiz zorluklar ortaya çıkar (Farzana ve Nishat, 2019; Dorokhine ve Bratt, 2022) ki bu geliştirme ekibini önemli ölçüde zorlayarak takım etkinliğini etkileyebilir. Bu özellikler, mobil oyun geliştirmenin bazı kendine özgü özellikleri olduğuna işaret etmektedir. Kim (2014) bu özellikleri (1) mobil oyun endüstrisinin film endüstrişile benzerlikler paylaşması, (2) hangi oyunun piyasada başarılı olacağını tahmin etmenin mümkün olmaması, (3) sektörü işletmeden son kullanıcıya (B2C) doğrudan hizmetin nitelemesi ve (4) piyasa ve teknolojinin sürekli bir değişim içinde olmasından dolayı pazarca çıkma sürelerinin son derece kısa olması olarak sınıflandırmıştır.


Diğer yandan, yeni gelişmekte olan bu endüstri, mobil oyun geliştirme ekilerinin de yeni olduğuuna işaret eder. Bazı istisnalar hariç, çoğu şirket henüz henüz kuruluşunun erken aşamalarında olup bu takımların önemli bir kısmını henüz şirketleştirmemişlerdir. Yeni stüdyoların çoğu sınırlı kaynaklara sahiptir (Sotamaa, 2020) üyelerini, hatta kurucuları da genellikle genç yaşlara sahip olup (Maqbool, Ahmad ve Farooq, 2021; Misra ve Kumar, 2019; Strode vd., 2022) bu nedenle, bu takımların etkin bir takım oluşturma gereksinimlerini karşılamak için harici destek ihtiyacı hissetmeleri olasıdır. Anlaşılacağı üzere, mobil oyun geliştirme, kendine özgü yöneri nedeniyle özel olarak ele almayı gerektiren bir bağlama sahiptir.

Bu durum, ön kuluçkalama faaliyetlerinin girişim faaliyetlerini destekleme (Kepenek, 2018) ve yenilikçi mobil oyun geliştirme takımlarının etkinliğini sağlamada önemli bir rol oynamasına olanak tanır. Ön kuluçkalama, yüksek tempo ve yoğun rekabetin olduğu mobil oyun endüstrisindeki çevik mobil oyun geliştirme ekipleri için özellikle faydali olma potansiyelini taşır. Ön kuluçkalama faaliyetleri kuluçkalama faaliyetlerinden farklı olup genellikle planlama aşamasında olan embriyonik işletmelere yönelik merkezlerde yürütülür (Kepenek, 2018). Bu faaliyetler girişimin ilerleyen aşamalarında başarı şansını artırma için iş fikrini doğrulamak ve ürünleri iyileştirmek konusunda girişimcilere yardımcı olabilmektedir (Hannon, 2004; Wirsing vd., 2002). Ön kuluçkalama faaliyetlerinden biri, girişimcilere önemli kaynakları bir fikre harcamadan önce iş fikirlerini doğrulamalarına ve fizibilitesini değerlendirmelerine yardımcı olmasıdır. Ön kuluçkalama programları, girişimcilere fikirlerini güvenli ve destekleyici bir ortamda test etmelerine, bir an önce gelir elde etme veya sermaye sağlama baskı olmadan deneme imkânı sunar. Bu doğrulama süreci, girişimcilerin iş modelini iyileştirmelerine ve başarıya giden yolda potansiyel

Takım, her bir üyenin birbirlerini tamamlayan eşsiz becerileri ve özellikleriyile katkıda bulunarak ortak bir hedefe ulaşmak için iş birliği yaparak çalışan bireylerden oluşur (Guzzo ve Dickson, 1996; Salas vd., 2008) ve gruptan farklıdır (Katzenbach ve Smith, 1993). Bir grupla bir takım arasındaki temel farklılıklar, üyeler arasındaki bağımlılık düzeyidir (Kozlowski ve Ilgen, 2006; Wheelan, 2009). Bir grup içinde bireyler, birlikte ortak bir hedefe doğru bağımsız veya küçük alt gruplar halinde çalışabilirken, bir takımda üyeler başarısı ulaşmak için koordineli ve birbirine bağlı bir şekilde çalışmak zorundadır. Bu bağlamda, takım üyeleri arasında ortak bir sorumluluk ve hesabı verebilirlik duygusu geliştirebilir ve takımın başarısına daha büyük bir bağlılık gösterilmesini beraberinde getirir (Salas vd., 2008). Araştırmalar, etkili takımların örgütsel performans ve üretkenliğin önemli bir rolü olabileceğini ve problem çözme, karar verme ve yenilik gibi çeşitli alanlarda gruplardan daha iyi bir performans sergilediğini göstermiştir (Salas, Cooke ve Rosen, 2008). Takım çalışması, her bir bireyin tek başına çalışmasından daha iyi sonuçlar elde etmek için becerilerini, bilgisini ve deneyimini birleştirmelerini sağladığı için önemlidir (Salas vd., 2008; Wheelan vd., 2003). Takım çalışması, özellikle yüksek kaliteli yazılım ürünleri üretmek için takım üyeleri arasında sıkı iletişim ve koordinasyon gerektiren çevik gelişirmede takımlarında daha önemlidir (Paasivaara, Durasiewicz ve Lassenius, 2012; Stettina ve Horz, 2013).
Takım etkinliği, takımın işlerini sağlamak için vazgeçilmez bir unsurludur (Singh ve Muncherji, 2007) içsel ve dışsal faktörleri içeren çok katmanlı bir yapıdır (Delgado Piña, Martínez ve Martínez, 2008, Kozlowski ve Bell, 2003). Takım etkinliği için önerilmiş muhtelif tanımlar olsa da konunun öncüleri takım etkinliğini üç önemli boyutta kavramsallaştırmaya eğiliminde birlesirler. Bu üç boyut, takımın (1) ürettiği çıktıların kalitesi ve miktarı, (2) üyelerinin tutumları ve (3) davranışsal çıktıları (Cohen ve Bailey, 1997); (1) üretkenliği, (2) üyelerinin karşılıklı bağımlılık içerisinde çalışabilme yeteneği ve (3) üyelerinin gelişimi ve refahı (Guzzo, 1986; Hackman, 1990); (1) verimliliği, (2) üyelerinin esenliği ve (3) yöneticisinin etkinlik değerlendirmesi (Campion, Medsker ve Higgs, 1993) olarak sıralanabilir. Buna göre, takım etkinliği kavramının bir bütün olarak, performans, davranış, tutum, takım üye tarzi ve kurumsal kültürün bir fonksiyonu olduğu sonucu ortaya çıkar (Meredith Ross, Jones ve Adams, 2008).


Büyük Beşli takım etkinliği modeli, geniş çapta kabul görmüş ve yaygın şekilde araştırılmıştır. Bu model, takım etkinliğine katkıda bulunma beş ana bileşeni tanımlar: (1) takım liderliği, (2) karşılıklı performans izleme, (3) uyum sağlayabilirlik, (4) takım yönelimi ve (5) yedek davranış (Salas vd., 2005). Takım liderliği, takım liderinin takıma rehberlik, destek ve yön sağlama etkiliğine atıfta bulunur. Karşılıklı performans izleme, takım üyesinin birbirlerinin performansını izleyip geri bildirim sağlayarak performansı iyileştirmelerini sağlayan bir beceridir. Uyum sağlayabilirlik, takımın değişen koşullara uyum sağlama ve kaçınılmaz engelleri aşma yeteneğini


Strode vd. (2022) tarafından yapılan güncel bir çalışma, literatürün kapsamlı bir şekilde gözden geçirilmesine dayanarak, özellikle Salas vd.’nin "Büyük Beşli"


Mobil oyun geliştirme takım etkinliği konusunda sınırlı sayıda araştırma olsa da, mevcut çalışmalar iletişim, işbirliği, takım büyüklüğü ve görev bağımlılığı gibi faktörlerin takım etkinliği açısından önemli rol oynamadığını göstermektedir. Ön kuluçkalama programlarının takım etkinliği ve girişim performansı üzerindeki olumlu etkileri, bu programların mobil oyun geliştirme takımları için de faydalı olabileceği düşündürece, bu çalışma ATEM'i araştırmak konusunun doğasına yüksek uyumluluğundan dolayı kavramsallı çerçeve olarak benimsemiştir.

Bu çalışma, “Ön kuluçkalama faaliyetleri mobil oyun geliştirme takım etkinliğini nasıl etkiler?” sorusu çerçevesinde, Animasyon Teknolojileri ve Oyun Gelişirme Merkezi, kısa adıyla ATOM yöneticileri ve ön kuluçkalama hizmeti alan mobil oyun geliştirme takımlarıyla yapılan derinlemesine görüşmelerden elde edilen kantıtlar ışığında, ön kuluçkalama hizmetlerinin mobil oyun geliştirme takım etkinliğinin üzerindeki etkisini keşfetmeye hedefleyen bu araştırmaının sebepler izahını oluşturacaktır.

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ziyade konunun kapsamlı bir perspektifi ve tümüyle kapsayıcı bir yaklaşımı mevcutsa; (4) araştırmacı başlangıçta hangi değişkenlerin daha önemli olduğunu tespit edemiyorsa; (5) veriler tümevarımsal, tekrarlayıcı ve etkileşimli bir analize uygunsu; (6) çalışmanın sunumu sayıldan ziyade metinsel olarak yapılmaya uygunsu; ve (7) araştırmacı bizzat araştırma sürecinin bir parçasıysa, nitel araştırma yöntemi daha uygundur.

Fikirsel bütünlük adına bir araştırma, ontoloji, epistemoloji ve metodolojinin kavramlarını sentezleme ve ardından benimsenen yaklaşım için uygun bir araştırma tasarımını uygulamayı gerektirir (Cuthbertson, Robb & Blair, 2020). Buna göre, eleştirel gerçekçi bir ontoloji (Bhaskar, 1975) ve yorumsamaç bir epistemoloji (Habermas, 1967) üzerine kurulu araştırmacı ve tasarımın seçmek için araştırmacıyı yönlendiren bir pragmatist perspektif sahibi olup araştırma tasarımını yorumsamaç görülebilecek, çıkarımsal olmayan muhakemeyi temel alan yapısalı bir yaklaşım benimsemştir.

Araştırma tasarımını, gerçek dünyanın karmaşıklığı ile pragmatist bir perspektiften başa çıkılabilmek adına basitleştirilmiş bir tek taraflı etki mekanizmasına indirgenmiştir. Bu soyutlama, odak noktası yalnızca ön kuluçkalama hizmetlerinin mobil oyun geliştirme ekibi etkinliğinin bileşenleri üzerinde odaklanmayı kolaylaştırmıştır.


Kavramsal çerçeve olarak kullanılan ATEM temelinde merkezin mevcut ve önceki yönetimleri ve ön kuluçka takımlarla araştırma etiği dikkate alınarak yarı


Nitel araştırma güvenirlik kriterleri doğrultusunda, ismen, inandırıcılık, aktarılabilirlik, güvenilebilirlik, teyt edilebilirlik ve otantiklik açılarından yetkili makam ve mercilerin, mevcut ve potansiyel (2) tematik oyun ön kulüba merkezlerinin ve (3) mobil oyun geliştirme takımlarının istifadesi için takım etkinliğine dair politika önerileri sunulmuştur.
E. CURRICULUM VITAE

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EDUCATION

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**TEZİN ADI / TITLE OF THE THESIS (İngilizce / English):**

THE IMPACT OF PRE-INCUBATION ON TEAM EFFECTIVENESS: THE CASE OF MOBILE GAME DEVELOPMENT

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