

Professional MBA  
Entrepreneurship & Innovation



## **START UP AND LOVE THE GAME**

### **Successful formation of start-up teams: What start-ups can learn from professional basketball teams?**

A Master's Thesis submitted for the degree of  
"Master of Business Administration"

supervised by  
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## Affidavit



I, **Bojan Petković**, hereby declare

1. that I am the sole author of the present Master's Thesis, " START UP AND LOVE THE GAME. Successful formation of start-up teams: What start-ups can learn from professional basketball team?," 74 pages, bound, and that I have not used any source or tool other than those referenced or any other illicit aid or tool, and
2. that I have not prior to this date submitted this Master's Thesis as an examination paper in any form in Austria or abroad.

Vienna, 30.06.2018

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Signature

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## Abstract

Focus of this Master Thesis is finding the solution for problem of “Not the right team” which arises as one of major reasons why early stage companies (start-ups) failed. Team formation, as a structural source of the problem, highly affects future life of a company; therefore, its process should be done very carefully. Examining structure of start-ups and looking deeply into the problem, Team formation is segmented on aspects of Team alignment, Team balance and Team heterogeneity which are then further analysed.

Innovative approach is created using insights from analogous distant field. In that sense, connections between sports and start-ups are established. Exploration showed that basketball is the best field from which valuable insight could arise. Specific connections between basketball and start-up are explained having in mind targeted Team formation aspects. Statistical analysis using hierarchical multiple regression is conducted to explore if observed Team formation aspects significantly contribute to team success in basketball.

Results show there is statistically significant explanation of team success done by Alignment and Team balance variables. It gives scientifically grounded opportunity to transfer practices and knowledge from one field to another. Simple framework how, founder can enhance and investors evaluate, Alignment aspect is presented, along with further recommendations.

**KEYWORDS:** Team formation, Team alignment, Team heterogeneity, Team balance, Analogous field, Basketball

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## List of Abbreviation

GM	General manager
NBA	National basketball organization
NCAA	National Collegiate Athletic Association
Etc.	Etcetera
MVP	Minimum viable product
p.	Page
Et al.	And others
OHI	Organizational Health Index
(R <sup>2</sup> )	coefficient of multiple determination
IBM	International Business Machines Corporation
SPSS	Statistical Package for the Social Sciences
US	United States of America
PIE	Player impact estimate
ATO	After time out
MM	One million
N	Number

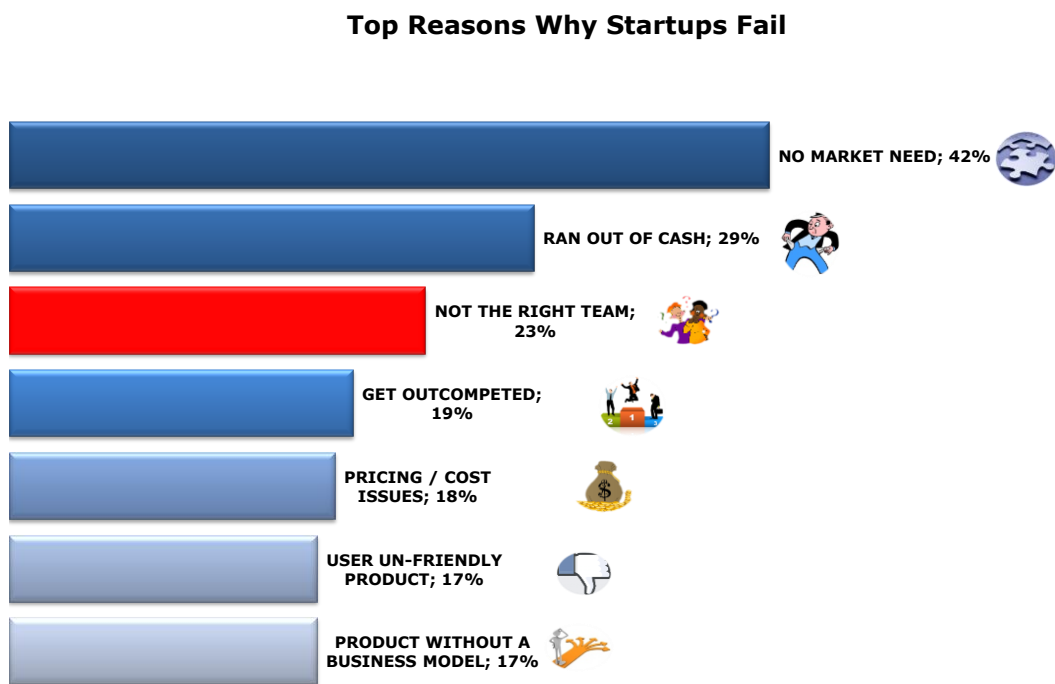
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F	F-test
P	Probability
B	Beta coefficients of regression model
PTS	Points
FGM	Field Goals Made
FTM	Free Throws Made
FGA	Field Goals Attempted
DREB	Defensive Rebounds
OREB	Offensive Rebounds
AST	Assists
STL	Steals
BLK	Blocks
PF	Personal Fouls
TO	Turnovers
PIE	Player Impact Estimate

# 1.Introduction

## 1.1. Problem statement

Early stage companies (start-ups) are highly sensitive to the issue of team formation. Under financial pressure, small market share and no company brand developed start-up owners need to approach this matter extremely carefully. According to CB Insights study (2018)<sup>1</sup> conducted among 101+ start-ups, 23% of them stated “Not the right team” as prime reason for their failure (see Figure 1).



**Figure 1:** Top reasons why start-up failed (Own illustration based on CB Insights study (2018)<sup>1</sup>)

<sup>1</sup> CB Insights study (2018) made as a result to 101+ post mortem start-up failures. Source: <https://app.cbinsights.com/research/startup-failure-reasons-top/>

Couple of interesting citations from founders participating in CB Insights study (2018) are: "I wish we had a CTO from the start", "I wished that the start-up had a founder that loved the business aspect of things", "I wished we brought additional founder", etc.

Founders are often in love with their idea. They don't see obstacles in front of them. With little help from somebody who is not biased by brilliance of an idea those can easily be resolved. Study<sup>1</sup> is teaching us that apart from two obvious reasons why start-up failed, which is no market share and running out of money, "not the right team" has high implications on lifetime of a venture. It highly influences teams in creating MVP (Minimum viable product), mitigating venture's ability for basic transition of an idea to product of any kind. As a result lots of good ideas go down the drain. Problem prevents teams to diverse task in company. Not the right team scores higher on the list of failure reasons than competition issues or cost structure issues. When asked start-up founders in Croatia if they were having problem to get funded, answer was: "We wish someone shows us how to be a company and give an advice how we structure team, more than giving us funds". "The number one reason start-ups fail is people problems and the second time around entrepreneurs realize this" (Lindred L. Greer, 2016 cited by Steve Hawk, p 5).

Not the right team can have twofold meaning: a) not right founding team and b) not right employee team. Both share similar problem structure with slight differences. In early stage start-ups, on which this Master Thesis is focused supported by results of the study<sup>1</sup>, emphasis is on founding teams' structuring problems.

Thinking back, what bothers founders when it comes to team formation, it can be summed up in following questions:

- What are company's main goals and are they set clear enough?
- Is team balanced?
- Does team have right organization structure?
- Does team have necessary competences?
- How should authority and power be distributed?

- Is team formed of members with complementary skills?
- How should compensation package look like?

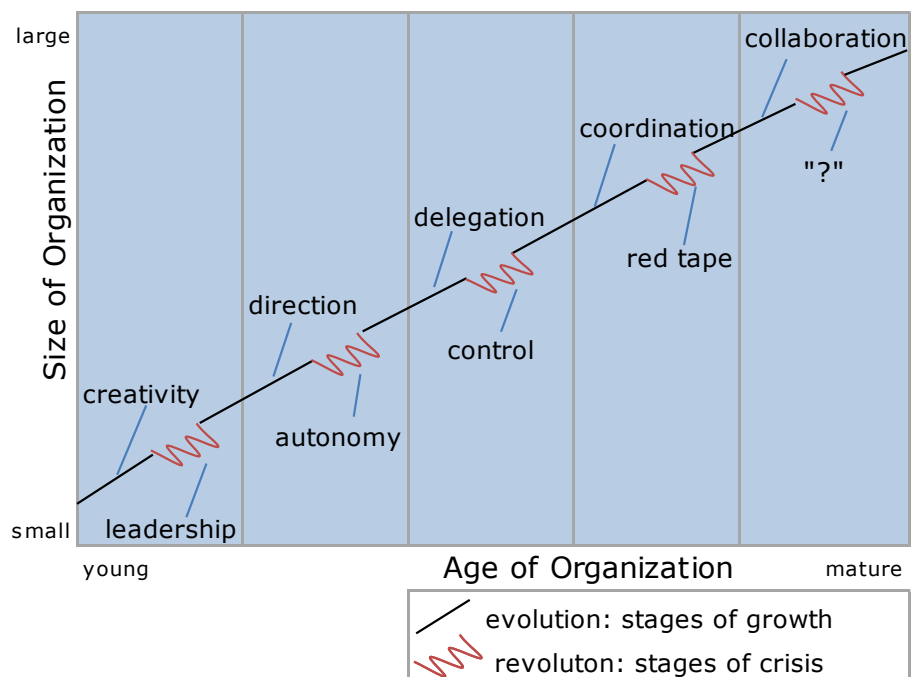
In this Master Thesis focus is going to be on further exploration of questions: a) How should alignment and clarity of goals be established, b) Does and to what extent team balance matters and c) Does heterogeneity of team have impact on its success. Each of them relates to questions bothering founders.

Kaiser and Müller (2015) compare established companies with start-ups and conclude that start-up teams have higher level of interaction intensity, much smaller room for errors, with higher importance of aligned vision among team member. Kaiser and Müller (2015) acknowledge start-ups do not have established human resource sector, which gives higher importance of collaboration between team members. Article gives important note that founders of start-ups need to learn how they can grow business with new abilities, while leaders of established companies made these experiences already (Kaiser and Müller, 2015). "In addition to organizational formal structure there is an informal structure of organization that evolves over time that also needs to address by entrepreneur" (R. Hisrich et al., 2017, p. 255). As much as founders think main problem is finding customers, how they structure things can have implications on the company's culture as well. And they are doing everything from the scratch, with no previously established systems or structures. "Although, we are speaking of organizational culture rather than organizational design the entrepreneur can have some control over how it evolves" (R. Hisrich et al., 2017, p. 255).

During inception period micromanaging has intense effect. Processes inside an organization are usually managed by founders themselves. They are reluctant to give up responsibility. When finally necessity comes to make transition, problem occurs. "Before forming a team, founders will first need to assume the division of responsibility and determining what skills and abilities are needed of meet goals in the business plan" (R. Hisrich et al. 2017, p. 256). Organization needs to establish framework of culture it wants to operate in and frame of organizational structure.

If not adjusted from the beginning it will be much harder afterwards to influence employee behaviours. "The organizational culture will be a blend of attributes, behaviours, dress and communication styles that make one business different from another" (R. Hisrich et al. 2017, p. 256). "The culture of early stage start-ups forms the backbone of the culture the company will have in later years. Therefore, paying attention early on to the type of culture you want to create is critical" (Lindred L. Greer, 2015 cited by Adrienne Sanders, 2015, p.1).

Greiner development of an organization (see Figure 2) shows how organization develops over time. Each organization goes through phases of evolution and phases of revolution (Greiner, 1998). In evaluation periods only small changes are done inside an organization (Greiner, 1998). In revolutionary phases management have to resolve problems with finding what alternative management practices might be set for upcoming period (Greiner, 1998).



**Figure 2:** Own illustration of Greiner's organization development (Greiner,1998)

Start-up companies are positioned at the first stage of organizational development (Greiner, 1998). At this stage called creativity, one is characterized by entrepreneurial and technical orientation of management, informal organizational structure style and informal communication style between team members (Greiner, 1998). As organization grows, informal structure of a company becomes a problem. More business issues occur, such as increase of number of employees, efficiency of production, etc. Greiner (1998) in his article states that first evolution phase is followed by revolution phase leadership. At this point company needs manager capable of delegating tasks and creating functional organization. In his article Greiner (1998) also says evolution phases can last from four to eight years. In today's start-up environment, phases especially between first and second last much shorter.

As we now see how first culture and organizational setting highly influence future development, team formation in this early stage is critical. Founders should establish team capable of supporting all future necessities for fast transition and changes.

## **1.2. Purpose of study and research**

Starting with two premises that a) establishing right team is of high importance and b) how first organizational pillars in company are made can affect its latter destiny; purpose of this research is to give founders insights which can help in tackling given issues. On the other hand recommendations could also help investor while evaluating strengths of start-up. To do that innovative solution from distant fields will be explored.

For this research distant industry will be sports industry, more specific basketball. Connections between two fields will first be established on general level, then on more specific level with description of intersection points. In order to be confident that conclusion can be drawn, statistical research will be conducted.

Problem is segmented on three focus points, making them variables of the research:

- alignment of team and its goals,
- team balance,
- team diversity according to various components.

Results of analysis should provide relevant insights from basketball that can be applied to start up environment. Empirical part will be structured in following way:

- detailed explanation of relevant connection aspects (variables) between basketball and start-up environment with theoretical background will be provided,
- statistical model which explains how team formation variables influence team success in basketball will be created,
- research and analysis which supports model will follow,
- reviewing proposed hypothesis, according to results of empirical data used in statistical tool of regression analysis, will end with conclusion.

Based on results, helpful insights and recommendation will be provided. It is important to note that problem of “not the right team” in start-ups has more aspects than the three points Master Thesis is focused on. Not everything can be explained using examples from sports which will be clearer after general connections are established.

Master thesis is segmented in seven chapters. First chapter describes a problem and aspect around it. Second chapter gives explanation how distant field relates to start-up environment and why exactly this field is relevant. What are areas of connections as well as where fields diverge. Third chapter describes how specifically connection can be established. It goes deeply into each variable explaining its relevance. Fourth chapter gives empirical evidence of performed research and its methodology. Fifth chapter provides results of the research. Sixth discuss results and accept or reject proposed hypothesis and gives recommendations. Seventh chapter presents conclusion.



## 2. Forming a team

### 2.1. Theoretical background

Traditional organizational structures are based on hierarchical architectural scheme. Ø. D. Fjeldstad et al. (2012) give definition of hierarchy as a system that is composed of interrelated subsystems where each of them is positioned gradually in a structure until lowest level of elementary subsystem is reached. "It is complex system in which each of the subsystems is subordinated by an authority relation to the system it belongs to" (Simon, 1962, p. 468 cited by Ø. D. Fjeldstad et al., 2012, p. 736). In today's world more and more start-ups turn themselves away from classic organizational scheme. In order to cope with constant rapid change there is a need to form different kind of organizational structures. "Consciously or unconsciously, leaders put in place organizational structures, practices, and cultures that make sense to them, that correspond to their way of dealing with the world" (Laloux, 2014, p. 41).

Ø. D. Fjeldstad et al. (2012) in their article establish characteristics of new form of organizational structure called actor-oriented organizational scheme. Ø. D. Fjeldstad et al. (2012) point out that focus of control and coordination mechanisms is shifted to the organizational actor. In this way, interests in organizational scheme are shared between members who have access to shared resources and who share common goals (Ø. D. Fjeldstad et al., 2012). They tend to have willingness to enhance collaboration between members in sharing knowledge and contribute to end success (Ø. D. Fjeldstad et al., 2012). Leadership inside organization is focused on member collaboration and promotion of collaborative values and practices (Ø. D. Fjeldstad et al., 2012). Simply said organizational structure depends on actors. Actors should develop prerequisites in terms of ability to self-organize and company should establish setting where commons, protocols, processes, and infrastructures enable interaction (Ø. D. Fjeldstad et al., 2012).

“Ideally, each member of a team brings his or her own unique and needed contribution to the success of the enterprise, but managers also need to provide guidance to teams” (Lindred L. Greer, 2015 cited by Adrienne Sanders, 2015, p. 2).

“To avoid unnecessary confusion and competition, leaders should clearly delineate who is responsible for which tasks” (Lindred L. Greer, 2015 cited by Adrienne Sanders, 2015, p. 2). Having these characteristics in mind, early stage companies should tune organizational structure to their needs. Organization like that empowers their employees to make decisions on their own and founders to redistribute power inside an organization. For actor-oriented organization in sports or in business crucial thing is redistribution of power among team members. In her article Lindred L. Greer (2014) explains different team power structures. According to Lindred L. Greer (2014) three structures of power are: Team power level, Team power dispersion and Team power variety, each of them with different implication on the organization (see Table 1). For example, if team power level is defined in a way that even low level employees have power, then it has implication that it increases member voice in a team, but it can enhance power struggles within a team. Same is with other team power structures (Lindred L. Greer, 2014)

Team Power Structures	Key Theoretical Mechanism	Team Outcomes	
Team Power Level	<p><i>Positive</i></p> <ul style="list-style-type: none"> <li>- Increases member voice</li> <li>- Raises empowerment and participation</li> </ul> <p><i>Negative</i></p> <ul style="list-style-type: none"> <li>- Increases threat and distrust between members</li> <li>- Increases intragroup power struggles</li> </ul>	Intragroup Conflict	Performance Creativity Viability
Team Power Dispersion	<p><i>Positive</i></p> <ul style="list-style-type: none"> <li>- Meets members' needs for structure</li> <li>- Facilitates coordination and cooperation</li> </ul> <p><i>Negative</i></p> <ul style="list-style-type: none"> <li>- Heightens perceptions of inequality</li> <li>- Inefficiencies in communication</li> </ul>		
Team Power Variety	<p><i>Positive</i></p> <ul style="list-style-type: none"> <li>- Increases role clarity</li> <li>- Reduces social comparison over power</li> </ul> <p><i>Negative</i></p> <ul style="list-style-type: none"> <li>- Creates silos and subgroups</li> <li>- Reduces superordinate team identity</li> </ul>		

**Table 1:** Types of team power structures (Own illustration based on Source Lindred L. Greer (2014))

Each start-up creates distribution of power based on their needs and business they are operating in. No one way is the best way. However, researches has shown key thing is in the balance of team power structures within a team (Lindred L. Greer, 2014). "Team composed of high-power leaders who all draw their power from different sources might have the best chance of conquering the world without dissolving into power struggles and conflict" (Lindred L. Greer, 2014, p. 103).

There comes a problem. As said before, founders are defining organizational structure based on business needs, but processes how to achieve given goal can be ambiguous. In academic literature (Ø. D. Fjeldstad et al. 2012; Brian J. Robertson 2015; Laloux, 2014) main focus is given on different types of organization structure, various culture types of a company and description of best practices or best processes how to achieve that. What lacks is analysis of foundation behind decision which structure to apply. Type of organizational and cultural structure founders chose to apply will be, at the end, highly influenced with resources (human resources) at their disposal. Team formation along with business plan comes as main pillar in this context.

Often can be heard entrepreneurs should hire for the culture. It implies culture is already developed which with founding team is not the case. One could argue that first step founders do is defining structure and management style they want to have and then they form a team. In highly developed markets with unlimited pool of talent, founders might find team members with exact cultural preferences and needed competences. In rest of the world where there is limited pool of talent I am confident things are in best case highly interconnected if not even completely inverse. Person who cannot accept mindset of self-managed team because she has been working in hierarchical organization will have hard time accepting Holocracy for instance. And can you blame her?

In order to tackle this problem founders should carefully approach structuring a team. Not every team is compatible with every organizational structure. Since in start-up environment there is tendency to form more

actor-oriented types of organization, team formation should be aligned with it.

Team formation will act as backbone of organization formed with a specific type of organization scheme and redistribution of power which will afterwards form the team culture. "Culture will enable company to distinguish from its competitors, ensure that critical operating values persist such as delighting customers and help identify employees that are fit with company's mission" (Ben Horowitz, 2014, p. 180). Culture will evolve over time based on formed structures and early behaviours. Having dog friendly company can be interesting for people with dogs, they will feel comfortable within but it will not make company's culture and it does not mean start-up has modern culture (Ben Horowitz, 2014). "It will not establish core values and drive business to its perpetuity" (Ben Horowitz, 2014, p. 183).

## **2.2. Innovative solution**

Poetz, Franke and Schreier (2014) argue that bringing together people who work in different, yet analogous, fields can result with great power in product innovation on structural level. Problems affecting structure of organization and team formation of a company are often not considered distant field required innovation solutions. But there is no strict boundary why innovation ideas cannot be applied for structural company's problem such is team formation. In their research Poetz, Franke, Schreier (2014) showed analogous market problem solvers provide more novel solutions than target market problem solvers, but with low usefulness of the idea. Usefulness can be enhanced if it is outlined what can be expected from distant field. Is main reason to find exact solution or is it to get an idea from which solution can arise (Poetz, Franke, Schreier, 2014).

Finding right analogues field requires search for main similarities or analogies between two fields. Crucial is to find structural elements similar to both ones, which can help us solve the problem (Poetz, Franke, Schreier, 2014).

Sports industry comes as great example. On structural basis it is very similar to start-up environment. There is extensive interaction of team members and quick decision making process. Uncertainty is common as well as necessity to win as soon as possible in order to remain competitive. But why do we even consider comparing sports to business? What is that attract us in this direction?

I imagine sports as continuous set of public meetings with all shareholders at once, who demand immediate profit, while at the same time company has to innovate to win market race. In a sense it is agile innovation process done on continuous base under high pressure. Every now and then I come across some article titled "What managers can learn from sports", or "5 things you should learn from Lebron James". They might have interesting title, but what they miss is scientific explanation why exactly that can be transferred and who will it influence.

"The sports context, just like the business world, shows us that it's not enough to have the best human resources that the organization can afford; instead, the true source of success is the ability to hit on the optimal combination for these resources" (Guenzi and Ruta, 2013, p. 30). If divided between team and individual, sports offer different points of view on how interaction between team members is done, as well as how end product is managed. Even though individual sport is interesting in its own segments, prime focus of this Master Thesis is on team sport concept.

There are two main segments coming as a result of splitting up concept of team sports: Team formation and team management.

In sports, more than in any other industry, forming a team is done on continuous base. Throughout the whole year GM, managers/coaches are focused on how to set up pieces of a team together. Which part does not fit or how one player is going to fit with rest of the team? Sport is performance industry more than any other. Mistakes from one team player have unimaginable higher effect on end result than effect from one employee. Reason for that also lies in speed of changes which is much higher than in any business context.

In their book Guenzi and Ruta (2013) clearly argue why managers should be aware of the risks involved in transferring these models to a business setting. Ineffective solution can be drawn if connections and comparisons between two fields are done inappropriately (Guenzi and Ruta, 2013), meaning structure of connections is important.

### 2.3. Connections between two fields

In order to find which sport is most relevant for such knowledge transfer, different sports organizational structures and how they function were reviewed. Guenzi and Ruta (2013) importantly distinguish that the activities of team members are interdependent to different degrees in various team sports. On general level sports diverge on their goals and tasks. In their book "Leading a team", Guenzi and Ruta (2013) established general frame that describes characteristics of different sports which should be considered when choosing most appropriate sport for connection to given business organization (see Table 2).

CHARACTERISTICS	SPORT		
	BASKETBALL	AMERICAN FOOTBALL	SOCCER
<b>GENERAL NATURE</b>	Flexibility based on the capacity for selfcoordination, speed and autonomous decisionmaking by interconnected players who are capable of orchestrating organized reactions to unpredictable events.	Planning complex but predictable activities carried out sequentially by groups of specialists	Specialized units simultaneously play several phases of the game; flexible, auto-coordinated, and able to adapt to any game scenario
<b>UNIT OF REFERENCE</b>	Team	Group	Team
<b>COORDINATION MECHANISM</b>	Reciprocal adaptation	Planning and hierarchy	Tactical modules and plays
<b>MANAGERIAL COMPETENCY</b>	Integrative	Strategic	Tactical
<b>FOCUS OF DEVELOPMENT</b>	Individual and team	Individual and group	Team
<b>EASE OF INTERGRATION OF NEW MEMBERS</b>	Low	Medium	Medium
<b>OPPORTUNITY FOR INCENTIVES LINKED TO GROUP PERFORMANCE</b>	High	Medium, preferably at a group level	High
<b>NEED FOR AUTO COORDINATION BY TEAM MEMBERS</b>	High	Medium	Medium
<b>NEED FOR TEAM LEADER TO COORDINATE TEAM MEMBERS</b>	Medium	High	High
<b>IMPORTANCE OF ALIGNING THE INDIVIDUAL AND THE ORGANIZATION</b>	High	Medium	High

**Table 2:** Different sports characteristics (Own illustration based on Guenzi and Ruta (2013))

It gives us ability to see how different sports diverge on main characteristics. On the first look Table 2 shows us which sport has most appropriate connections with type of organizations start-ups in general are. Having in mind actor-oriented organizational structure of start-ups, basketball's general nature outlines flexibility and need for auto-coordination by team members. Characteristics of basketball point out it seems worthy of exploring it further as analogous field.

Before continuing further on establishing connections, concept of success should be understood. Differences how success is perceived in each field have to be taken into consideration. Success factor supports comparison. If there is no way of connecting success factor there is no high relevance of knowledge transfer. Best practices from one field could then lead to unintended success in another.

In sports, main success is result of the game (winning a game). Even though in today's world many teams can be focused on club development more than on winning a game. Another issue is that success of one team can be failure to other. So there is a bit of ambiguity in explanation. In start-ups success can also be relative. Some may be focused on gaining market share, other on development of product, etc. Explanation of success in sports can represent all types of success for start-ups

However, at the end of the day it is important to be profitable, to win the game and that counts the most.

In order to simplify, there is a need for assumption to be made during this Mater Thesis research. Consideration of team success in sports will be set on winning a game. It will be analogous with having profitable start-up. Also it can be reasonably assumed that no matter what start-up end goal is, structure of their team, is one of prerequisites for this success. In start-ups, team members can vary in competencies they needs to have in order to achieve different goal. General design of structure and, subsequently, its culture and agility could also be diverse, but first team formation has to give strong foundation.

For this research basketball sport has been chosen among others.

## 2.4. Why basketball?

Guenzi and Ruta (2013) describe basketball organization as flexible one with focuses on self-managing teams. Speed and autonomous decision making is done by interconnected players who are on the other hand capable of reacting to unpredictable events in organized way. Basketball players must make decisions quickly during a game (Guenzi and Ruta, 2013). Circumstances may change rapidly so decisions on the court should be made accordingly (Guenzi and Ruta, 2013). Success of player decision is determined in real time and process is repeated over again. Plays going on are hard to predict as they depend on opponent influence on the game so players need high level of flexibility and connection (Guenzi and Ruta, 2013).

Agility and high interdependences of team members has been used as starting point for further research, considering basketball as sport most similar to start-up world.

Basketball comes as natural example to actor-oriented type of organization. Looking only from broad perspective one can wrongly conclude that structure of roles nowadays in basketball is strictly hierarchical. Even though there is a strict division of structures inside a basketball club, such as front office, GM, owner, coaches and players, each of them decides on they own how to act in any given moment. Coaches can make strategy and tactics but it all depends on how each player is going to behave in given moment on a court, considering circumstances. At the end it all depends on these decisions.

One can also wrongly conclude there is strict hierarchy between players. It is probably true in terms of mutual respect or authority. However, players cannot predict all actions from opponent. Therefore, team power is redistributed among them giving them ability to make their own decisions. In what sense team power is redistributed can vary slightly between teams. Still all three types of team power redistribution showed in Table 1 are included to some extent.



When I talked to former Croatian national basketball team coach Velimir Perasović, he explained that there is no exact offense action plan he gives to his players. What he does is setting boundaries around what type of team he wants them to be. He corrects them during timeouts and practices, establish automatism or processes of team collaboration and the rest of it is up to them.

Before I start to develop deeply into each transferable aspect, main differences and similarities should be presented in following segment to explain more clearly why specifically basketball is the best sport to connect with start-up teams.

### **2.4.1. Differences**

Any variable or part of it that has aspects which are not transferable to start-up or business environment should be excluded from the analysis. They tend to be significant to basketball world but are not similar in any context with start-up environment. This is where fields diverge. These are:

- Monetary compensation of players (players have considerably higher compensation than start-ups employees)
- Social impact of sports to environment (higher in sports than in start-ups)
- Pressure from media and other external factors
- Level of risk which is higher in sports
- Trainability of players (more focus on physical, lower education level) (Guenzi and Ruta, 2013).
- Durability of careers (much shorter in sports, influenced by injuries)
- Performance focus of goals (in sports success is primarily measured by number of wins over competition)

### 2.4.2. Similarities

Excluding obvious differences from basketball, following detailed connections can be stated:

- Size of a team in start-up is close to size of basketball team (around 10)
- Organizational structure in basketball is actor-oriented structure between players combining with some sort of hierarchy on formal level between owner, GM, coach and team
- Founder in start-ups interact with team members every day just as coach does in basketball, unlike managers in big corporations
- High degree of interdependence between team members is evident both in basketball and start-ups
- Teams in start-ups and basketball need to adapt quickly and react fast to unpredictable events
- Lower the player skills are, more crucial coach (manager) performance is (Guenzi and Ruta, 2013)
- Focus in basketball and start-up is on development of individual and a team (Guenzi and Ruta, 2013)
- High importance of managerial continuity is equivalent to founder in start-up and coach in basketball (Guenzi and Ruta, 2013).
- High importance of aligning individuals with organization (team) is evident in both cases (Guenzi and Ruta, 2013).

Considering all of the above I can state, with reasonable confidence, that given similarities present strong analogues field, from which helpful insights can be extracted. When right field is chosen, deeper analysis, focusing on team formation, can take place.

Team formation of basketball teams will be split among three aspects aligned with questions bothering founders in Chapter 1.

- Goal setting alignment
- Team balance
- Team heterogeneity

These three variables arise since they are most common in process of team formation and data for them can be easily extracted. Variables can be simply explained to ordinary start-up founder.

It is important to say that included variables do not describe the whole process of team formation in basketball, but they represent majority of it. Aspects of player performance and talent play some role in team formation as well.

Taking into account available data and time frame of analysis, model which explains how team formation aspects influence team's end success in basketball will be created. Model will be comprised of set of independent, control and dependent variables.

## 3. Variable explanation

### 3.1. Goal setting alignment variable

Numerous researches nowadays argue importance of quick movement and flexibility of organizations. Due to fast changing environment in the age of disruption, pressure is on company to quickly adapt to changes. It is important if you were able to open new distribution channel or diversify at the right moment before competitors. For early stage companies promptness is crucial factor if company wants to succeed. And often it is not the problem. In need to diversify from its competitors in some way, start-ups tend to develop products much faster, they don't have heavy organization structure that pushes back, are open to changes, etc. Small teams, dedicated to their product with low cost structure, can easily absorb necessity to move in various directions.

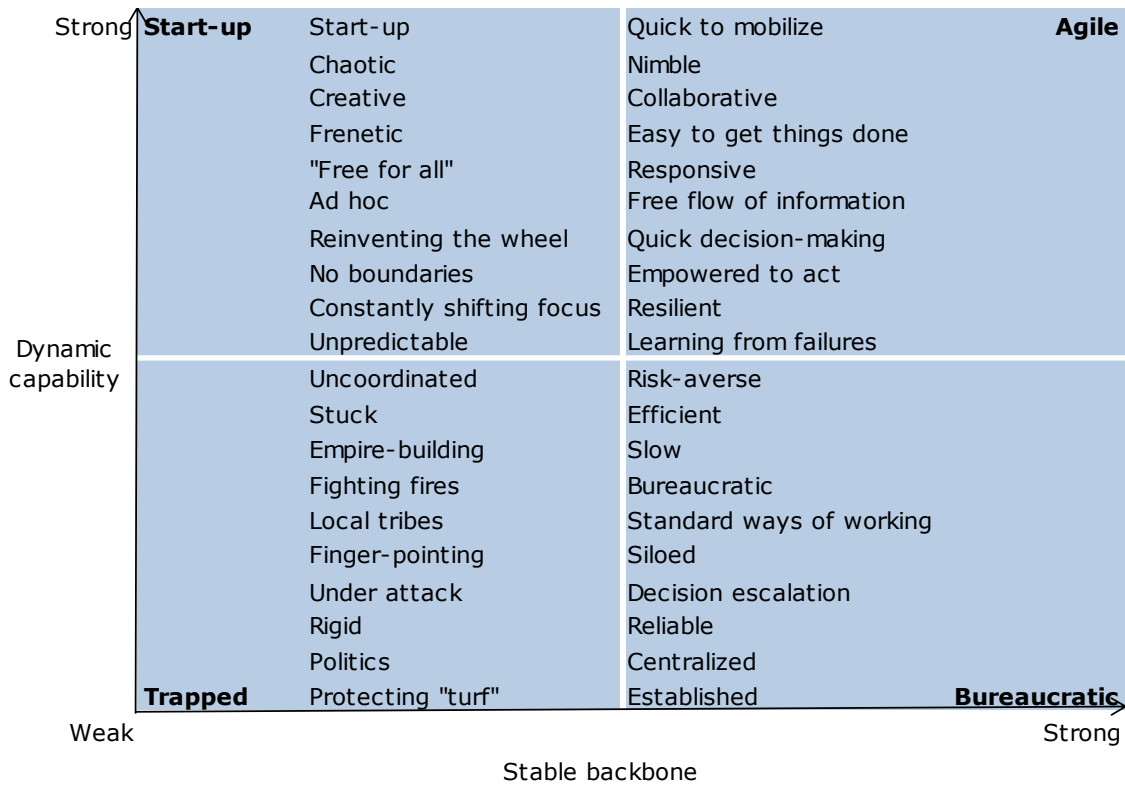
Speed can be wrongly identified with agility. Idea behind creating business model canvas by Alexander Osterwalder, at least in my opinion, was to show there is a need for structure behind ability of quick change. We need to know in which direction we are heading (Gruber and Tal, 2017) and how to use our resources to go in the right way. What is often left without much attention, when talking about speed, is stability of an organization. Agility implies that apart from speed there should be stability developed as well.

Before forming a new team, founders should have in mind the necessity for start-up to become agile, meaning establishing balance between stability and speed and developing both segments.

McKinsey & Company (2017) in its measure of Organizational Health Index (OHI)<sup>2</sup> divides companies in four categories (see Figure 3).

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<sup>2</sup> "Organizational Health Index (OHI) aggregates the views of employees and managers on a set of nine key organizational dimensions that have proved critical to health" (Lili Duan, Rajesh Krishnan, and Brooke Weddle, McKinsey & Company, 2017) (Nine key dimensions: Direction, Accountability, External orientation, Capabilities, Leadership, Motivation, Coordination and Control, Innovation and learning, Work Environment (Lili Duan, Rajesh Krishnan, and Brooke Weddle, McKinsey & Company, 2017) (Source: <https://www.mckinsey.com/featured-insights/performance-transformation/the-yin-and-yang-of-organizational-health>)



**Figure 3:** Stability/dynamic graph showing characteristics of each segment (Own illustration based on McKinsey Organization Agility and Organization Design, 2016)

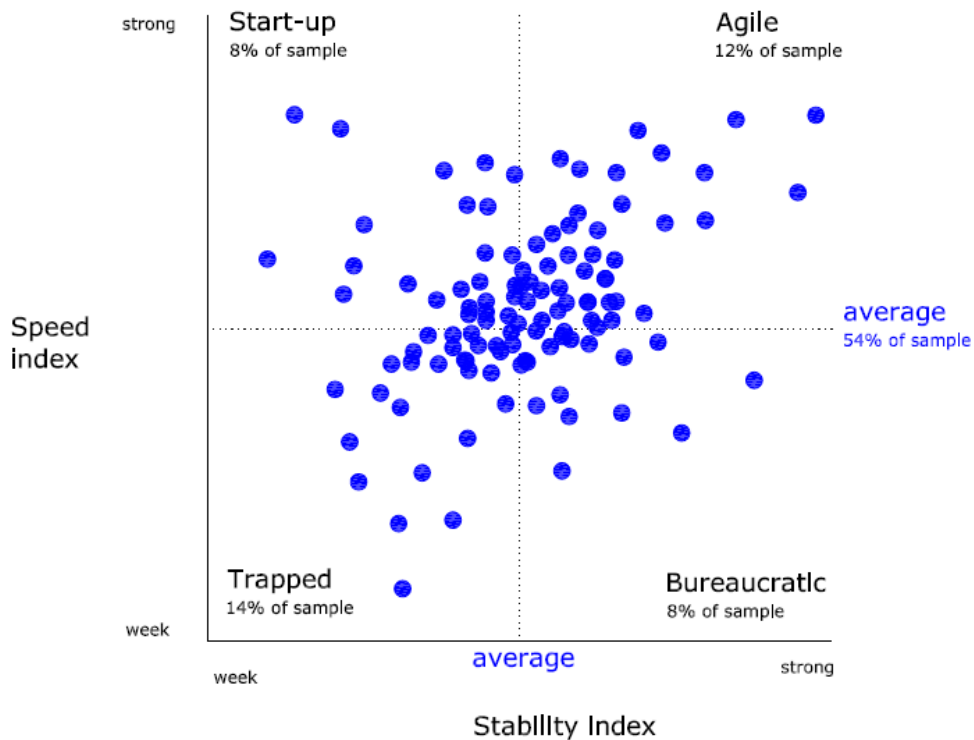
Start-up group is characterized among others as creative but chaotic, unpredictable and with constantly changing focus. Companies in top left sector have high speed capability but low stable backbone.

Duan, Krishnan, and Weddle from McKinsey & Company (2017) argue that based on McKinsey’s Organizational Health Index, both organizational stability and speed contribute to organizational health.

2015 McKinsey’s Organizational Health (2017) Index research concludes “70% is a chance that organizations will rank in top quartile of organizational health index if they score high both on stability and speed aspects” (McKinsey & Company 2016, p. 9). This is much higher than percentage from companies that score high on one or focus only on one aspect. (McKinsey & Company, 2016)

From Organizational Health Index graph (see Figure 4) there is conclusion that if start-ups want to go to agility group of companies, which most thrive to do, they should develop higher stability component. There is also connection between stability and profitability of company. “Healthier companies far outpace those with moderate or low health in long term total

returns to shareholders” (Smet, Schaninger, and Smith, McKinsey Quarterly, 2014 cited by McKinsey & Company 2016, p. 21)



**Figure 4:** Distribution of companies' OHI (Own illustration based on McKinsey Organization Agility and Organization Design, 2016)

Results of McKinsey & Company (2015) research show majority of companies have average results when it comes to speed and stability index. They have neither index highly developed. It opens opportunities for start-ups to develop stability index and gain competitive advantage.

Great analogy of stability speed mixture is concept of smartphones. Often used as an example, smartphones have stable operating system and hardware, while apps space offer ability to add innovations, design new products and quickly implement updates according to customer experiences (McKinsey & Company, 2016). Organizational structure acts as a backbone of company (McKinsey & Company, 2016) making team formation backbone of organizational structure.

McKinsey & Company (2016) highlights three core organizational areas where balancing stability and speed is critical. Those are organizational structure, governance and processes.

If nature of business in start-up requires fast adapting to customer needs, then decision making (governance) needs to follow. While forming a team, specific management practices should be kept in mind in order to facilitate development of decision making process which is needed and to create a cultural setting favourable for further development. (McKinsey & Company, 2016)

Focusing on management practices at the same time or even before making organizational structure, founders will have easier decisions in creating organizational structure.

Based on organizational health index research McKinsey & Company has identified ten management practices which characterize agile organizations (see Table 3).

Practice	Most agile	Associated outcome
Role clarity	1	Accountability
Top-down innovation	2	Innovation and learning
Capturing external ideas	3	Innovation and learning
Process-based capabilities	4	Capabilities
Operationally disciplined	5	Culture and climate
Internally competitive	6	Culture and climate
Meaningful values	7	Motivation
Knowledge sharing	8	Innovation and learning
Inspirational leaders	9	Motivation
People-performance review	10	Coordination and control

**Table 3:** Management practices outlined in the most agile companies (McKinsey Organization Agility and Organization Design, 2016, p. 23)

Management practices which agile organizations identify as most important, least agile organizations identify as least important. Keeping in mind that one pillar of agility is innovation, it is interesting to see (Table 3) that role clarity practice in agile organizations is more important than next couple of innovation focused practices. Operationally discipline also ranks high, on a fifth place by importance. It gives a sense of how important stability of organization is.

Team alignment is used as an idea to link stability aspect to available data of the research. Intention of basketball general managers (GM) and coaches before a season is to establish team which will be stable enough, but still able to cope with upcoming challenges. Apart from performance oriented improvement, changes of team members are done to improve alignment of everyone in a club with goal. With increasing alignment more stable team will be formed. There are patterns which can be drawn out of team behaviour in this process. There should be high clarity what one club wants to achieve and a plan how to do it.

There is no unified measurement of such variable in statistical data rankings, therefore for the purpose of this research new variable must be formed. To achieve that, stakeholders behaviour in a club, should be observed. It was done using qualitative analysis which helped extract characteristics of variable. On the one hand characteristics must be relevant to stability/alignment concept, while on the other hand they must be common for each team, so proper conclusion can be made. More will be described in Chapter 4.

Most common front office behaviours, before a season, can be grouped in two segments: Team formation and Leadership. Each segment has two characteristics.

Team formation segment characteristics:

- Quantity of change --- It is important how intense quantity of changes has been done. If front office scope has been wide, many new members will need time to adapt, which will affect performance.
- Focus characteristic --- It defines if changes are done to improve existing team or decision was to redefine it.

Leadership segment characteristics

- Alignment --- How clear the established alignment of everyone in organization is.
- Clarity of role structure --- Taking parallel to Role clarity management practice defined by McKinsey & Company (2016), definition of how clearly the role structure is examined.

More on how each segment and characteristic is measured will follow in Chapter 4.



Purpose of research on this variable will be to observe how it correlates with end success of teams in basketball.

### **3.2. Team heterogeneity**

It is to expect founders will form a team comprising of people they knew before, family members or close friends. It is in human nature to associate with someone you are comfortable with. In starting your own company, people tend to look for someone they share same interest and passion.

For instance, how often can we expect technology start-up to be founded by mixture of people from finance, IT, consulting and HR background, supplemented with CEO experienced person? It is rare. Most founding teams would be comprised of people from the same university, with similar technological knowledge, maybe slightly different interest. And still often we can read about necessity of heterogeneity in start-ups as driver of company's performance.

It is important to distinguish types of heterogeneity. In their study Kaiser and Müller (2015) describe two types. Relationship oriented or ascribed characteristics heterogeneity (Forbes et al., 2006) is one coming from emotive nature of affective conflict between people. It can be age, nationality or bio-demographic aspect (Forbes et al., 2006). As second segment Kaiser and Müller (2015) describe task oriented or achieved characteristics heterogeneity (Forbes et al., 2006) coming from cognitive conflict between people. "Cognitive conflict between people occurs when persons are scrutinizing one another's perspectives in an effort to extract and combine the best elements of each" (Amason and Schweiger 1994 cited by Kaiser and Müller, 2015, p. 788) which are mainly achieved over time. It is wage, education or working experience (Forbes et al., 2006).

There is mixture of empirical and deductive studies on how heterogeneity influence team performance both positively and negatively and which mixture of characteristics should be achieved. Somehow one could conclude, as start-ups are prone to be agile, that high heterogeneity comes as natural aspect. However, in their study Kaiser and Müller (2015) argue teams at start-up level are more homogeneous with difficulties associated with workforce heterogeneity. "Workforces are statistically significantly less

heterogeneous than under simulated benchmark”(Kaiser and Müller, 2015, p. 790).

Also Kaiser and Müller (2015) propose term of “homophily”. It is “people’s inclination to bound with others with similar characteristics, which shows higher benefits to team performance than heterogeneity” (Kaiser and Müller, 2015, p. 787).

Horwitz and Horwitz (2007) in their study suggest team heterogeneity can give competitive advantage but teams should not consider that heterogeneity can be used as uniform effect to success but carefully decide where to develop it.

Studies also distinguish knowledge driven start-ups from other primarily because of heterogeneity level achieved. “Technology start-ups are likely to be more homogeneous in team characteristics as they are founded by technology-oriented individuals” (Kaiser and Müller, 2015, p. 789). It is evident that heterogeneity differs not only on its source, but in type of start-ups as well, since no industry is the same. For the purpose of this Master Thesis start-ups are not segmented based on industries and are considered same without differences.

In this Master Thesis research focus is on ascribed heterogeneity characteristic of age, and achieved heterogeneity characteristics of income (wage) and minutes played (character and experience proxy of a single player).

Intention of Team heterogeneity variable in the research is to compare results with prior research findings on start-ups. Therefore, providing how results correspond would give interesting answers from distant field. It will be possible then to set starting point for further research of transferring best practices from basketball world. It will also be possible for specific elements and behaviour patterns to use in process of achieving satisfactory level of team heterogeneity in start-ups.

### **3.3. Team balance**

We should keep in mind different terms which influence team balance when talking about it. Team balance originates from its members performance,

roles, characters and behaviours. Many researches have been made to show correlations between team performance and team balance (Belbin, 1993, 2010; Batenburg et al., 2013; Van de Water et al., 2008;). Results are mixed and ambiguous, mostly since definition and measurement of team balance variables is subject to different views. Measurements are either focused only on one aspect like behaviour or they develop model that does not fully represents all relevant aspects which occur in a team. Secondly, nature of business can ask for different aspects to be relevant, therefore conclusion can be drawn that no model can fit every team.

Still most widely used concept of team balance is Belbin's theory. Constructed by Belbin (1993, 2010) gives us benchmark for further research on this subject. Belbin's theory is grounded on premise that successfulness of team depends primarily on behaviour of team members, their interaction and how they make decisions (Batenburg et al., 2013). Theory puts higher focus on behaviour of members than intellect or experience (Batenburg et al., 2013). In a cornerstone of Belbin's theory is compatibility of team member roles. These roles are divided in categories: action-oriented, people-oriented, and problem solving-oriented roles (Batenburg et al., 2013). Each role has its own specific behaviours (see Table 4). Further segmenting three categories Belbin creates total of eight different roles with predefined characteristics. If clash of roles occurs, team can be subject to events that lead to unsuccessful results of a company. It is important how formation and identification of roles is done (Batenburg et al., 2013).

Cluster	Role	Description of role
Action-oriented roles	1 Implementer	"Concerned with the practical translation and application of concepts and plans developed by the team. This entails a down-to-earth outlook, coupled with perseverance in the face of difficulties"
	2 Completer/finisher	"Ensures that the team's efforts achieve appropriate standards, and that mistakes of both commissions and omissions are avoided. It also involves searching for detailed mistakes and maintaining a sense of urgency within the team"
	3 Shaper	"Challenges, argues and disagrees. Is achievement motivated, extrovert, impatient, and has a low frustration threshold. Keen on winning the game. Has good insight, especially if loses. A non-chair leader"
People-oriented roles	4 Coordinator	"Organizes, co-ordinates and controls the activities of the team. This involves the clarification of team objectives and problems, assigning tasks and responsibilities, and encouraging team members to get involved in achieving objectives and goals"
	5 Team worker	"Creates and maintains a team spirit. This involves improving communication by providing personal support and warmth to team members and by overcoming tension and conflict"
	6 Resource investigator	"Explores the environment outside the team by identifying ideas, information and resources. Performance of this role involves developing contacts, co-ordination and negotiation with other teams and individuals"
Thinking/problem-solving-oriented roles	7 Monitor evaluator	"Analyses ideas and proposals being considered by the team, to evaluate their feasibility and value for achieving the team's objectives. Points out in a constructive manner the weaknesses of proposals being considered"
	8 Plant	"Concerned with putting forward ideas and strategies for achieving the objectives adopted by the team. Performance of this role requires creativity, imagination and innovation"

**Table 4:** Belbin team roles (Source: Belbin (1993, 2010) cited by Batenburg et al., 2013, p.903)

Against each role team members are tested using interviews and answers to specific questions. Based on each test Belbin assigns score and subsequently examines which roles are represented in a team most and how combination of them relates to success. Results of Belbin's research (Belbin 1993, 2010) show positive correlation between team which had higher team balance score and team performance. Many researches (Batenburg et al., 2013; Van de Water et al., 2008) tried to support Belbin

theory with separate studies without much success. Results of their studies show no correlations of team balance with team performance (Batenburg et al., 2013). Van de Water et al. (2008) tried to explain this is the case because team roles construction varies between studies and scoring system is different. Secondly some scoring systems anticipate that multiple team members occupy same role, while other start with a premise each team member has different role and there should not be abundance of one role (van de Water et al., 2008). Lastly, scoring indexes of most studies are done as descriptive, meaning they describe if existing teams are balanced or not, rather than prescribe how design should be done (van de Water et al., 2008). In existing researches team balance was calculated usually as sum of scores from individual member characteristics. Set of roles similar to Belbin's were established and team members were evaluated based on each role. It was done mainly through questionnaire done by researchers and answered by team members. Based on their answers team members were assigned and graded. As a result, researchers made a final score for each team member. Van de Water et al. (2008) conclude, to answer if team balance corresponds to success, it can be done only if the plan for creating balanced team is defined. Clearly for this approach Belbin theory can be valuable foundation.

Similar approach of mentioned studies in Master Thesis, where definition and scoring of existing team roles should be done from the scratch, will not give relevant results. It should also be stated that Belbin theory is grounded on behaviour and it can be quite tricky to extract data of behaviour, especially from basketball players.

Due to time limitation and nature of observed field, in this Master Thesis different approach was taken. Point of view will be shifted from individual role definition and scoring team members to team performance statistical data. Historic data is observed and there is no possibility to influence team formation. Final performance data already exists. There was also no possibility to extract each team member's personal characteristics or conduct a survey to find players preferences and put them in each category.

Goal will be to explore if statistical data will show difference between teams coming as a result of different team role formation.

For example, if team is doing well both in offense and defense it means both segments are developed equally well and will affect in some sense the end result. Performance data, which is highly correlated with end success, like points scored will not be taken as a measurement. More explanation will be made in Chapter 4.

To summarize examination of which roles are represented in one team will not be of interest. Result of variable is based on team level, not individual member. Data for team balance variable was extracted from one of statistical ranking systems.

## 4. Research

### 4.1. Research methodology

In this chapter I will provide empirical part of Master thesis. First I will describe research design and creation of research model. Following that, data collection for each part of the model, as well as measurement of variables comprising it, will be described in more details.

With the emergence of book "Moneyball" (Lewis, 2003) we see impact of deep analytics and statistics in Sports industry. Basketball is just following trends. Numbers of research studies have been conducted on how analytics can improve level of basketball player valuation. One of it called "Study of stakeholder assessment of basketball player evaluation metrics", by Martinez and Martinez (2011) provides helpful insight on which metrics should be used for most appropriate explanation of basketball player performance. There are more than 200 systems for evaluating player performance in basketball, reviewed by Martinez (2010a). Existing evaluation metrics are not unified. With strong focus on "tangible performance variables", these systems often provide contradictory results. Tangible variables are those strictly oriented on physical performance of player, like points scored, rebounds, etc.

Different results can highly affect decision making process and lead to unwanted outcome. Those can affect players themselves giving them false image of how they are really performing, influence the media or value of players (Martinez and Martinez, 2011). One of issues Martinez and Martinez (2011) addressed in their study was what is the best way and how best to determine player's value. Based on the results from the research (see Table 5) best way to analyse basketball player value is the mixture of quantitative and qualitative methods.

Methods	Response
1. Only quantitative methods	19.51%
2. Only qualitative methods	24.39%
3. Mixture of quantitative and qualitative methods	56.09%
<b>Valid responses</b>	<b>41 (87.23%)</b>

**Table 5:** Responses which methods should be used in analysing players (Source: Martinez and Martinez, 2011).

“Players should be mainly valued in terms of their offensive and defensive contribution on the court, considering “intangible elements” such as leadership, intensity, intimidation, personality” (Martinez Martinez, 2011, p. 177). “Intangible elements” have been widely considered as elements that influence player performance, subsequently team success and determine player’s value. Problem is that there is no index that can measure intangibles in the form (Martinez and Martinez, 2011). Even if we come up with such variable which can explain intangible elements, study shows that 20% of basketball stakeholders consider evaluation of intangibles as unreliable (Martinez and Martinez, 2011).

For this Master thesis I have approached this problem differently. Team intangibles like balance, heterogeneity, alignment can be developed and they easier ways to measure them. Focus is shifted from player to team. Goal of research is to examine team formation elements. Therefore intangible aspects such as each player’s leadership skills will not be needed to measure. What has been done is to analyse aspect for which there is data but it is not commonly used in evaluation metrics. This data is extracted from reports, interviews or combination of existing statistics on team level. Martinez and Martinez study (2011) showed there is no right way to do such analysis; however, having reasonable explanation of variables measures grounded on aspects transferable to start-ups, will contribute to relevance of the Master thesis.

As for tangible valuation metrics the most widely used is ranking system which is deficient system (Martinez and Martinez, 2011). It is the simplest linear one. Due to unfamiliarity of broad basketball stakeholders with more advanced metrics this one remains widely used. It does not include intangibles in its valuations. This is why managers need deeper



understanding of distant field in order to transfer only that knowledge which is useful.

## **4.2. Research design and structure**

Analysis will provide statistically grounded results for further transferring best practice from one field to another. Research has been done using multiple hierarchical regression analysis.

Multiple regression is a way to explain how more than one independent variable explain one dependent variable (Uyanik and Güler 2013). Assumptions of multiple regression are the same as assumptions in linear regression, meaning normal distribution of variances, independence of variables, linear relationship between dependent and each independent variable should all be met (Richardson, 2015). Hierarchical regression is only a variety of multiple regressions where independent variables are split in different blocks and each block is included in analysis periodically.

In this example hierarchical regression analysis is used to explore statistically significant amount of variance in dependent variable after taking into consideration control variable (Univeristy of Virgina, 2016). Control variable in this case is used to distinguish independent variable focused only on physical performance from others. With this framework, multiple regression models can be built, each by adding variables to previous model.

Couple of regression models were built in analysis. First regression model is using control and dependent variable, following regression models done by adding rest of independent variables. Point of interest is to determine whether newly added independent variables improved coefficient of multiple determination ( $R^2$ ) and by how much (Univeristy of Virgina, 2016).

Software package used for analysis was IBM SPSS software. Regression between control variable and dependent variable explains correlation effect based strictly on sport performance level, which is hard to transform to start-up world. We must not neglect the fact that performance aspects

highly influence team success. By making analysis this way, true influence of non-performance oriented variables can be explained.

Second block is using independent variables focuses on  $R^2$  change in regression analysis.

### **4.3. Hypothesis**

Winning percentage of a team in NBA season is primarily correlated with PIE average which represents physical performance of a team. Winning percentage is also correlated with independent variables: Goal Setting Alignment, Team balance, After time out team balance and Heterogeneity of team based on age, income and minutes played by team members.

Simply speaking, hypothesis is set as follows (see Figure 5):

NBA team is more successful if they develop more team formation components manifested in following aspects.

- Higher the team scores in PIE variable, more successful they would be
- Higher the team scores in Goal Setting Alignment variable, more successful they would be.
- Higher team balance variable score, more successful team would be.
- Higher heterogeneity of team based on age, more successful team will be.
- Higher heterogeneity of team based on income, more successful team will be.
- Higher heterogeneity of team based on minutes played, more successful team will be.

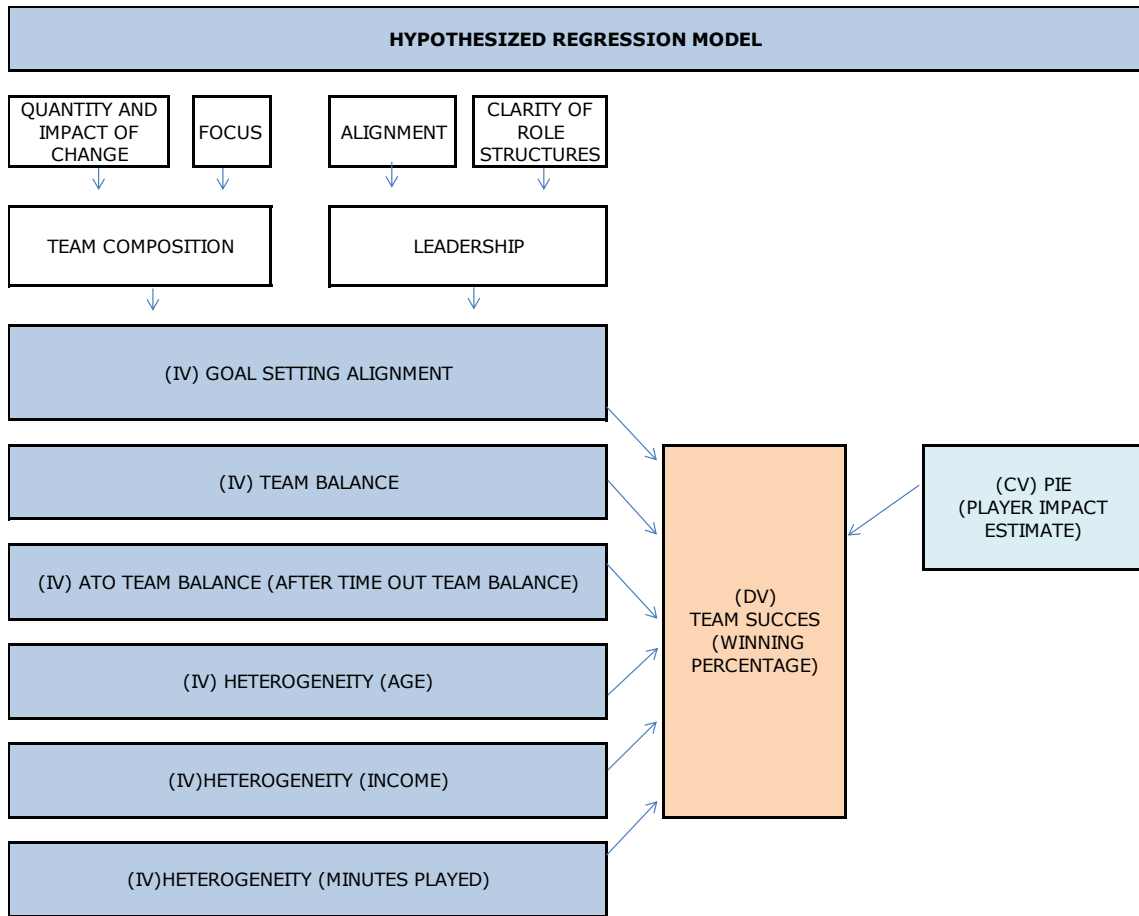


Figure 5: Hypothesized regression model

### 4.4. Data collection

Research is based on data which was gathered for 30 teams in National basketball association (NBA) league in US for period of 3 consecutive seasons: 2015/2016, 2016/2017, 2017/2018. NBA league is the most important professional basketball league in the world. It consists of 30 clubs, 15 in two conferences (western and eastern). 29 clubs are stationed in US and 1 in Canada. Games played are divided between pre-season, regular season and post season games. In pre-season part, only friendly matches are played. Regular season consist of 82 games played by each club, following post season part in which the best 8 clubs per conference play playoffs until one wins a championship. For the purpose of this Master Thesis only regular season games were used for statistical data analysis. NBA league has financial salary cap. It is predefined spending limit set on

league level determining how much can each club spend on players' salaries per year. Club which exceeds limit is subject to extremely high taxes. To some degree it mitigates money influence on player movements and team performance. Luxury taxes restrict richest teams from buying all the best players. It provides opportunity to find different aspects, rather than money, that contribute to winning and it gives all 30 teams similar conditions to compete. For instance this is a reason why club's budget was not included as meaningful variable.

Data collection was split in two segments.

First segment was collecting interviews and reports made by long time experienced NBA league reporters and analysts such as Steve Aschburner, Sekou Smith, Fran Blinebury, Shaun Powell, etc. Reports are made before each season, as intention of analyst and reporter to examine what each team has done in offseason. During this period clubs transfer players and staff in process called offseason movements. Redefinition of plan and goals is made. During this period new players enter league through NBA Draft where clubs are acquiring new team members. Two types of reports were collected, one focused more on general level of team status and one oriented more on player movements and their characteristics. Reports can be found on web page [www.NBA.com](http://www.NBA.com) in KIA season preview and 30 teams in 30 days sectors and are free of charge.

Second segment was collection of statistical team data using publicly available web pages like [www.NBA.com](http://www.NBA.com), [www.basketballinsiders.com](http://www.basketballinsiders.com), [www.espn.com](http://www.espn.com) and using web portal [www.synergysportstech.com](http://www.synergysportstech.com) which requires subscription payment. Statistical data can be found inside different ranking systems on team level. As this is the best league in basketball world, data points provide helpful insight for this work. Availability of data is much higher than in any other basketball league.

## 4.5. Measurements of variables

In following section each variable will be explained in more detail, what they represent and how process of data measurement was done. Theoretical background of variables and their importance for this purpose was explained in Chapter 3.

As already mentioned in Chapter 2.3, success of basketball team is winning percentage they achieve during season. Starting with the idea that basketball success comes as a result of players' physical performance, control variable describes exactly that aspect.

Decision to include remaining independent variables is made considering their importance to team formation in start-ups explained in Chapter 2 and their relevance in explaining success (see Chapter 4.1.). Therefore, set of variables can be seen in Table 6.

VARIABLES		
INDEPENDENT	CONTROL	DEPENDANT
Goal setting alignment	PIE (Player impact estimate)	Team success (winning percentage)
Team balance		
ATO team balance		
Heterogeneity-age		
Heterogeneity-income		
Heterogeneity-minutes played		

**Table 6:** Variables taken in regression analysis

### 4.5.1. Goal setting alignment - independent variable

NBA basketball offseason is a time when teams are revising and updating their formation, leadership and goals for each season over again. Depending on which stage teams/clubs are, measures can be strong, harsh or just simple upgrading. Analysts and reporters, who follow teams, publish their reviews, interviews and articles for each of 30 teams playing in NBA.

For each team two reports have been analysed. Before analysis, coding scheme structure in two levels or cycles is created (see Table 7). First level is used to extract small paragraphs and sentences from reports which using descriptive codes (Saldana, 2009), describe each segment. Why exactly this descriptive code segments are used? As explained in Chapter 3.1 they describe stakeholders' behaviour in the best sense.

Second level, using focus coding scheme (Saldana, 2009), reconsiders segments and develops more detailed or focused categories out of extracted text. More focused categories in this research are called segment characteristics, since they are highly connected with first level.

Second level of coding structure is then further analysed using Likert scale where each characteristics is scored against scale of 1 to 5.

LEVEL	CRITERIA			
1st level (segments)	TEAM COMPOSITION		LEADERSHIP	
2nd level (characteristics)	Quantity of change	Focus of change	Alignment	Clarity of role structures
Scoring	Likert scale (1-large, 5-small)	Likert scale (1-redefinition of team, 5-upgrading existing team)	Likert scale (1-unclear.5-high)	Likert scale (How clear is what is expected from each player and coach 1-unclear. 5-high)

**Table 7:** Coding scheme structure

One could argue segments and characteristics seem to explain overall team culture. I am confident this is not the case. Team culture is more complex matter and for sure more criteria have influence on it. For instance, number

of leaders in a team, personalities of team players, fans expectations, media scrutiny, past success, etc., may have impact. Goal setting alignment variable can be observed as one of the pillars from which culture arises.

#### 4.5.1.1. *First level*

Let's imagine we are starting a new team. No matter if it is in sports, business or hoops with friends. On general level we have two main line of thoughts. Who will be in our team or which members our team will be comprised of and how leadership is formed within or who will be in charge? It is the same in start-up world as well as in basketball. Therefore, two main segments, Team composition and Leadership, are first level.

#### 4.5.1.2. *Second level*

Further focusing on extracted text each segments has its own more focused characteristics. Point of interest is what quantity of players moving in and out was, does this change highly impact team composition, what the main stakeholders focus was during this process and how good team alignment is. Why some player is traded as well as how good his skills are was not the focus.

Team composition segment:

- Quantity and impact of change --- Point of interest was to see how many players or front office members have come in or out of a team. On Likert scale "1" describes large quantity of change and high impact while "5" describes small quantity of change or low impact. Large quantity and high impact implies low stability of team. I was guided by the fact that stability of organization matters (McKinsey & Company, 2016).
- Focus --- What was main front office focus with players' movement? Was it upgrading a team or total redefinition? Redefinition of a team can be done using only couple of players or lots of them. It depends on their importance in existing team. Deeper understanding of NBA basketball team is needed to make it right. How well changes will be

implemented in a game plan was not part of this research. On Likert scale "1" describes focus on redefinition of a team while "5" describes small changes, mainly upgrading existing team. Redefinition implies low stability of a team.

#### Leadership segment

Leadership criteria have been divided between Alignment and Clarity of role structures.

- Alignment --- It shows how well team members (front office, players, back office) are aligned with end goal. It does not matter if end goal is just rebuilding a team in next 5-6 years. Important is to see how clear it is set. Emphasis was on player collaboration descriptions and relationship description between members. Specific relationship description between owners, GM, coaches and players highly contribute to this characteristic. On Likert scale "1" describes unclear alignment while "5" describes highly developed and evident alignment. It could also be that alignment is developed but it is not evident in reports. For the purpose of this Master Thesis assumption is made that unclear description of alignment means it is not sufficiently developed.
- Clarity of role structures --- Do team players and coaches know what their place in a team is or not? How good they feel about it? Maybe some frustration is evident from the text. Conducting interviews would be the best way to gather this data, yet due to limited time and resources I have used reports analysis for this purpose. Reporters who follow teams for over three decades have more than relevant knowledge on whether team members will know their place. For instance if one team has five point guards there is high possibility something will go wrong. Important is to see how clearly this aspect is set. On Likert scale "1" describes clarity of role structures is unclear while "5" describes clarity of role structures is clear. It could also be that clarity of role structures is developed but it is not evident from reports. For the purpose of this Master Thesis assumption is



made that unclear description of clarity of role structures means it is not sufficiently developed.

Question can arise why decision is to sum up all scores rather than analyse them separately. Answer is in purpose of variable, which is structural stability and alignment of team as one variable, rather than each characteristic itself.

#### 4.5.1.3. *Data example*

Provided in Table 8 is an example how data for Goal Setting Alignment variable was extracted and scored. The example provided is for Chicago Bulls team in season 2017/2018. Reports are done by Steve Aschburner and Shaun Powell (NBA.com, 2017). In bullet points there are sentences extracted from reports which are put in segments Team formation and Leadership, based on what they describe. In this example team had done a lot of changes in terms of player movement. Still, some important players remained in a team, therefore score is "2" not "1". Reading bullet points it is clear that focus is on redefinition of team rather than keeping things same. Therefore, score is "1".

In second characteristic text clearly shows lack of clarity in alignment between players and front office. Some issues are not resolved and questions if structure of team formation is good enough are raised. Score is "2" only because of successful past performance of front office members.

Team lacks leadership ability and it isn't clear which player is foundation player and which player should fill different roles. There is no clarity whether young players should play this role or not, and which player should play it. Destiny of main role player is unclear as well. Therefore, scores on this characteristic is low or "1". The rest of scores from report analysis for all 30 clubs in 3 season can be found in Appendix I.

TEAM	SEASON	TEAM COMPOSITION	Quantity and impact of change	Focus
CHICAGO BULLS	17/18	<ul style="list-style-type: none"> <li>Major additions: Kris Dunn (trade), Zach LaVine (trade), Justin Holiday (free agency), Quincy Pondexter (trade), Lauri Markkanen (Draft)</li> <li>Major subtractions: Jimmy Butler, Michael Carter-Williams, Rajon Rondo" (<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> <li>No team in the NBA saw its fortunes make a reversal this summer more than the Bulls, a reeling franchise that saw its lone evidence of credibility disappear with the trading of Jimmy Butler to Minnesota."(<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> <li>In a sense, the Bulls put themselves in a good position by trading Butler. They can push the reset button, fall into the lottery and pray for help in next summer's Draft. Plus, they'll have money to spend."(<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> <li>Most of the rest of the offseason was spent on adding quantity rather than quality to the roster for training camp." (<i>Steve Aschburner, NBA.com, 2017, p.1</i>)</li> </ul>	2	1
		<p style="text-align: center;"><b>LEADERSHIP</b></p>	Alignment	Clarity of role structures
		<ul style="list-style-type: none"> <li>They're approaching training camp with the unsolved issue regarding Wade: Will the Bulls buy him out? Wade is obviously a poor fit to a rebuilding program and it would be best for him and the organization to move on." (<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> <li>Are GM and owner Gar Foreman and John Paxson the right tandem to oversee the rebuilding process? To be fair to Foreman and Paxson, they built a solid team several years ago, only to see it crumble once Rose suffered a knee injury. That wasn't their fault, and anyway, the Bulls stayed competitive for a few years during Rose's recovery." (<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> <li>It doesn't take all that much leadership to lose on a nightly basis, but these guys at least need a pecking order for when they make dinner plans on the road."(<i>Steve Aschburner, NBA.com, 2017, p.1</i>)</li> <li>The Butler trade will probably decide their fate. If Dunn and LaVine become foundational players, Chicago will proceed to the next era." (<i>Shaun Powell, NBA.com, 2017, p.1</i>)</li> </ul>	2	1

**Table 8:** Example of Goal Setting Alignment measurement (Source: Steve Aschburner and Shaun Powell, NBA.com, 2017, Sources: <http://www.nba.com/2017-18-season-preview-chicago-bulls>, <http://www.nba.com/article/2017/09/05/30-teams-30-days-chicago-bulls>)

### 4.5.2. Team balance- independent variable

In order to understand measurement of this variable we will have to look at following aspects of one basketball team. Performance of each team can be split between their offense and their defense performance. Best way to observe how well each team behaves in each aspect is to look at how many point each team scores or receives. Adding on that, we know that in

basketball each possession can result with outcome of 1 point, 2 points or 3 points. Also some teams play faster than others and have more possessions. Since number of points is highly related to winning success, it downsizes team balance effect. In order to cope with this, performance is segmented on points and success of outcome. Amount of points scored part should not be considered. This leaves us with a measure of possession outcome success whether it is positive or negative. Plainly speaking it is measured how many times team scores a point and how many times team gets a point from opponent, not amount of points. Therefore only percentage of possessions ended with the score has been observed because it represents team ability to come up with positive result.

Team balance variable is difference between performance in offense and performance in defense. There are four possible scenarios. a) If team has high offense and defense performance; variable result will be positive. b) If team has high offense and low defense performance; variable result will be around zero. c) If team has low offense and high defense performance; variable result will be around zero. d) If team has low offense and low defense performance; variable result will be negative.

Variable shows difference between balanced team versus an unbalanced team that is either much better in defense or in offense.

#### **4.5.3. After time out (ATO) team balance - independent variable**

Duration of basketball game is often fragmented with external effects, such as when ball goes out of bounds, foul is called or time-out is called. During each interception of game continuity, layout of team members on the court is changed. Players switch their positions to match or cope with different circumstances that have occurred or will occur. However, only during time outs players have enough time to discuss tactics with their coach. In situations like this coach will either change tactics or change players to boost performance. Other team should match that or maybe do better, depending on the game situation. I find this relevant because it shows how

each team is balanced in situations that need fast response to circumstances, after having quick discussions.

Similar with team balance variable, performance is split between offense and defense and similar with team balance variable only whether successfulness of possession was measured. Difference is that in this case I observe only one offense and defense possession after time out. Possessions after half time are also considered here.

Again similar with team balance, ATO team balance variable is created as the difference between performance in offense and performance in defense after time outs.

There are four possible scenarios as a result of performance outcomes. a) If team has high offense and defense performance; variable result would be positive. b) If team has high offense and low defense performance; variable result would be around zero. c) If team has low offense and high defense performance; variable result would be around zero. d) If team has low offense and low defense performance; variable result would be negative.

#### **4.5.4. Heterogeneity of age - independent variable**

Based on study done by (Kaiser and Müller, 2015) start-ups tend to be more homogenous at the beginning of their business life and develop heterogeneity over time, primarily during employing periods or in need for different specialists. "Compared to team heterogeneity before new team members joined the firm, all heterogeneity measures we consider increase by around 50 percent" (Kaiser and Müller, 2015, p. 796). There are number of different ways to calculate heterogeneity as Kaiser and Müller (2015) suggest. However, continuity of each variable is not the main focus, but which category each player falls in. "Continuous distances are not meaningful under a conceptualization of diversity as variety; qualitative distinctions are" (Harrison and Klein, 2007, p. 796). That is why Blau Index (Blau, 1977) will be used for this purpose. Blau index splits participants in categories. It is calculated as one minus sum of squares of percentages of each category. Kaiser and Müller (2015) point out the need to normalize

each heterogeneity index, since number of elements is not the same in each team and Blau Index is dependent on number of team members. Therefore normalized Blau index is as formula shows:

$$B = \frac{n}{n-1} \left( 1 - \sum_{j=1}^n p^2 \right)$$

**Equation 1:** Normalized Blau index of heterogeneity (Kaiser and Müller, 2015 p.792)

N is number of team members while p represents percentage of each category. Higher the Blau index is, the more heterogenic team is.

Each team was observed based on age of its players. Players were put in 6 different categories:

- a) Younger than 18 years old,
- b) 19-21 years old,
- c) 22-25 years old,
- d) 26-29 years old,
- e) 30-34 years old,
- f) and older than 34 years old.

These categories represent relevant qualitative distinctions of a team. Average contract duration in NBA is around 3-4 years. Secondly, players often enter NBA league with age 18-21 and are considered rookies at that period.

Apart from rookies, NBA league as the most advanced competition in basketball, attract players with already significant professional experience gained either in NCAA or International competitions. Therefore, there is possibility that player at his 26<sup>th</sup> year has less NBA experience than some 19 year old player, but on the other hand has more overall relevant experience in his career. Age can be seen as proxy for experience of team players, even this is not the main purpose in this research. As described in Chapter 3, age aspect is affective characteristic and it could lead to misinterpretation if it is used as proxy for achieved characteristics.

Goal with this variable was to observe how age diversity affects each team and does different set up have influence on end success.

#### **4.5.5. Heterogeneity of income- independent variable**

Income is achieved heterogeneity characteristic. Each player has different salary and same as it is in business world. Only difference is that amounts are much higher. Top star players earn amounts unthinkable to any person working in business world, especially start-ups. Lowest payed players still earn much higher salaries than start-up employees. Point of view is not on absolute amounts but on their relative relations and representation within different categories. Players are segmented in 6 different categories:

- a) players earning less than 1 MM\$ per year,
- b) 1-2 MM\$,
- c) 2-5 MM\$ per year,
- d) 5-10 MM\$ per year,
- e) 10-20 MM\$ per year,
- f) more than 20 MM\$ per year.

Decision why these categories have been used is their relevance with past player's performance. It is assumed better player will have better contract. For instance new players (rookies), depending how high they were positioned on a Draft scale, will not earn more than 5 MM\$ per year no matter how good they are. Majority rookies fall into segment 2-5 MM\$ per year. Of course this assumption is very theoretical since number of different aspects affects how much one player earns per year. For the purpose of this Master Thesis I did not go into deep research of this problem.

Based on data normalized Blau Index of heterogeneity income is calculated for each team. Result indicates that higher the index, higher the diversity of team based on income is.

#### **4.5.6. Heterogeneity of minutes played- independent variable**

It can be seen as a proxy for employee engagement in a team as well. More people contribute to end success more they will feel engaged. If a basketball team has only 5 players, out of 20, playing ninety percent of minutes in one season there is reasonable doubt something is wrong with that team. One can ask simple question: "Why other 15 players get payed at all if they don't contribute". Similar is with start-up environment. Minutes played are therefore achieved heterogeneity characteristic. Players are segmented in 5 different categories:

- a) players playing less than 5 minutes on average per game,
- b) 5-15 minutes on average per game,
- c) 15-25 minutes on average per game,
- d) 25-30 minutes on average per game,
- e) more than 30 minutes on average per game.

Based on data Blau Index of minutes played heterogeneity is calculated for each team. Result indicates that higher the index, higher the diversity of team based on minutes played is.

#### **4.5.7. Player impact estimate (PIE) - control variable**

"Managers often look to sports for inspiration and useful examples for working with a group, but they should be aware of the risks involved" (Guenzi and Ruta, 2013, p. 5). Even though similarities have been explained between two distant fields in Chapter 2, it is important to consider major differences which cannot be transferred to start-up world. Basketball is a sport and therefore majority of success rely within physical performance and talent the team players have for this game. It is specific for sports. Therefore, control variable should represent simple comprehensive aspects of physical performance and talent which correlates to end success giving us opportunity to see if remaining independent variables have influence or not.

Basketball statisticians enhanced a lot their products in last years. More advanced stats have been used to explain performance. One of these is PIE (player impact estimate). Simply explained it is statistical number which shows as a result everything a single player does in a game (NBA, 2018) (see Equation 2). It uses all aspects shown in Equation 2 and weighs that number against the same stats generated by everyone in that game (NBA, 2018). It is a percentage value of positive things attributable to one player in one game he played (NBA, 2018). Based on this data season PIE value for each player is calculated.

$$PIE = \frac{PTS + FGM + FTM - FGA - FTA + DREB + (0,5 * OREB) + AST + STL + (0,5 * BLK) - PF - TO}{(GmPTS + GmFGM + GmFTM - GmFGA + GmFTA + GmDREB + (0,5 * GmOREB) + GmAST + GmSTL + (0,5 * GmBLK) - GmPF - GmTO)}$$

**Equation 2:** Player Impact Estimate formula (NBA, 2018)

Still only one player cannot win a game himself. There is large variety in number of played games by team members across teams and the whole league. Also each player does not contribute significantly to a team. For instance if player played only 5 minutes in 5 games and he was good, he would have high end PIE value which does not represent his contribution to season team PIE value in the right sense. That is why assumption is made, that only players who played more than 40 games per year and 12 minutes or more, on average, are considered as relevant contributors to a team. If one team member played well and has high PIE it does not mean team has won a game. Adding up all season PIE values of players per team and dividing it by number of contributing team members, we have mean season team PIE value.

#### **4.5.8. Team success (winning percentage) - dependent variable**

How to determine what is the success of one team? What is success for one may be failure for another. In order to simplify, as already explained in Chapter 2.3, winning percentage, as measure of team success, is a number of games won divided by number of games played in one regular season for one team.



## 5. Results

### 5.1. Sample size

Out of potential 90 data points, 88 were included in the analysis. Two of them had missing values. Table 9 is presenting descriptive statistics of each variable including mean value, standard deviation and number of data points. In included data set no outliers (3 times standard deviation measure) were found.

Descriptive Statistics			
	Mean	Std. Deviation	N
Winning_percentage	50.064	15.236	88
PIE	9.777	0.617	88
Goal_setting_alignment	13.000	3.857	88
Team_balance	-0.014	1.942	88
ATO_team_balance	-0.013	2.956	88
Heterogeneity_age	73.105	6.397	88
Heterogeneity_min_played	75.779	5.710	88
Heterogeneity_income	80.843	4.108	88

**Table 9:** Descriptive statistics of variables

### 5.2. Findings

Analysis was done using hierarchical multiple regression. Before construction of regression models, correlations between independent variables and dependent variable are calculated and are shown in Table 10. Each correlation is significant with one tailed significant factor of  $p < 0.05$ .

Correlations			
	Winning_ percentage	Sig. (1tailed)	N
Winning_percentage	1.000		88
PIE	.731	.000	88
Goal_setting_alignment	.577	.000	88
Team_balance	.862	.000	88
Pearson Correlation ATO_team_balance	.606	.000	88
Heterogeneity_age	.228	.016	88
Heterogeneity_min_played	.395	.000	88
Heterogeneity_income	.203	.029	88

**Table 10:** Pearson correlations between variables

In the first step linear regression model was created to explore if control variable (PIE) explains dependent variable (winning percentage of a team) and can it be concluded that PIE predicts winning percentage. Significant regression equation was found ( $F(1, 86) = 98,496$ ,  $p < .000$ ), with adjusted  $R^2$  of .528. Standardized beta coefficient is .731 with significant value of  $p < .000$ .

In the second step, additional regression models are created in which independent variables were included using stepwise method.

Stepwise method in SPSS examines which of independent variables contribute significantly to predicting winning percentage of team and excludes all of those which don't. It is to expect result would be fewer variables in model. Variables which remained included tend to have meaningful significant coefficients in predicting dependent variable. Result is inclusion of two independent variables Team balance and Goal setting Alignment in the model as addition to control variable (see Table 11).

Variables Entered/Removed <sup>a</sup>			
Model	Variables Entered	Variables Removed	Method
1	PIE <sup>b</sup>		Enter
2	Team_balance		Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).
3	Goal_setting_alignment		Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100).

a. Dependent Variable: Winning\_percentage  
 b. All requested variables entered.

**Table 11:** Independent variables included in regression analysis

Significant regression equation was found in model 3 stating ( $F(3, 84) = 109,940, p < .000$ ) with adjusted  $R^2$  of .790 (see Table 12). Since hierarchical regression analysis was done, it is possible to observe  $R^2$  change which is .263. Adding two independent variables, regression model, consisting only of control variable, is enhanced and stronger chance in predicting winning percentage of team is established. Standardized beta coefficient in model 3 are ( $\beta$  (PIE variable) = .223,  $p < .005$ ), ( $\beta$  (Team balance variable) = .619,  $p < .005$ ), ( $\beta$  (Goal setting alignment variable) = .173,  $p < .005$ ). Standardized beta coefficients were used rather than unstandardized, because standard deviations of variables vary as seen in Table 9. This way it is possible to compare the magnitude of the coefficients to see which one has more of an effect (UCLA, 2018).

Model Summary <sup>d</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	,731 <sup>a</sup>	.534	.528	10.46263	.534	98.496	1	86	.000	
2	,880 <sup>b</sup>	.775	.770	7.31478	.241	90.945	1	85	.000	
3	,893 <sup>c</sup>	.797	.790	6.98602	.022	9.188	1	84	.003	1.364

a. Predictors: (Constant), PIE  
 b. Predictors: (Constant), PIE, Team\_balance  
 c. Predictors: (Constant), PIE, Team\_balance, Goal\_setting\_alignment  
 d. Dependent Variable: Winning\_percentage

**Table 12** Summary of regression models

Tolerance of variables (see Table 13) shows us what is independence of variance associated with independent variable, independent of other variables. In other words, it tells us if variables in models are unique. In this case it is evident that variables are unique. Lowest number is for Team balance variable which shows 45.7 % of variance being unique. Conclusion can be drawn that multicollinearity effect is not included in the model.

Coefficients									
Model 3	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics
	Beta	Std. Error	Beta			Zero-order	Partial	Part	Tolerance
(Constant)	-12.725	16.708		-.762	.448				
PIE	5.519	1.715	.223	3.218	.002	.731	.331	.158	.501
Team_balance	4.857	.570	.619	8.516	.000	.862	.681	.419	.457
Goal_setting_alignment	.684	.226	.173	3.031	.003	.577	.314	.149	.740

**Table 13:** Statistic measures of coefficients

Reason why rest of variables are not included in the model is mainly because their betas fail to pass t-test and associated 2-tailed p-values. Tests examine if given coefficients are significantly different from zero (see Table 14), which in excluded variables is not the case.

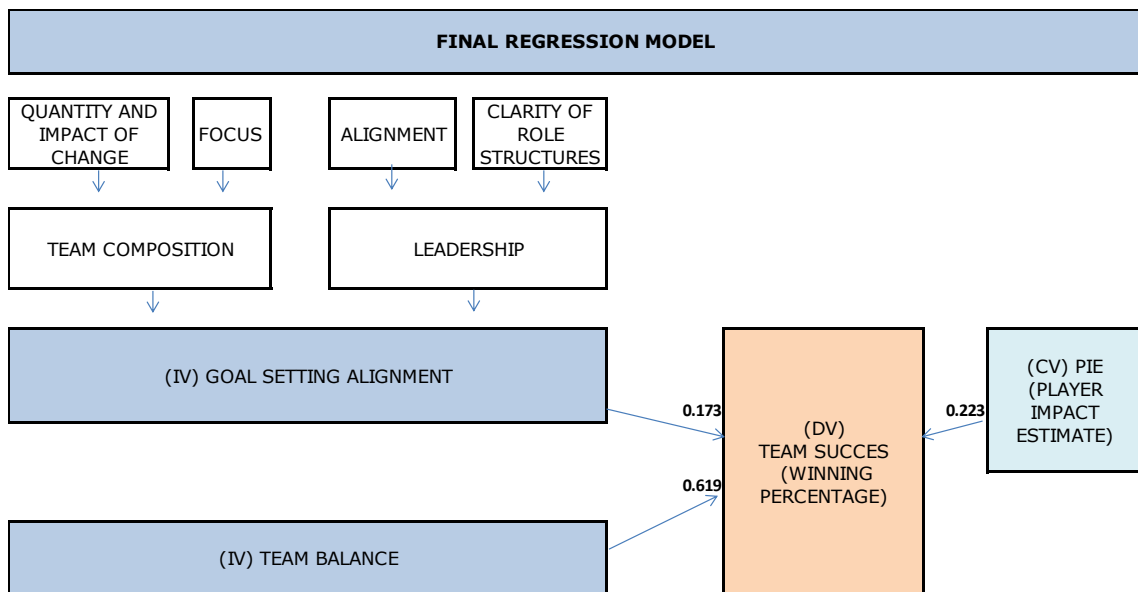
Excluded Variables						
	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	VIF
ATO_team_balance	0,104	1.574	.119	.170	.544	1.839
Heterogeneity_age	-0.007	-.130	.897	-.014	.857	1.162
Heterogeneity_min_played	0.000	-.002	.998	.000	.797	1.235
Heterogeneity_income	0,029	.555	.581	.061	.900	1.095

**Table 14:** Statistics of excluded variables

## 6. Discussion

Purpose was to examine if variables in hypothesized model significantly explain success of basketball team. In other words, having in mind performance oriented control variable I examined if included independent variables enhance prediction capability of the model.

Results of regression analysis show there are significant coefficients between two independent variables and team success. Those are Goal Setting Alignment and Team balance variable. Rest of variables were excluded from the model during analysis, since their coefficients in regression model are not significantly different than zero. Therefore, hypothesized regression model should be reviewed, resulting with final regression model in Figure 6.



**Figure 6:** Final regression model

Proposed hypothesis can be semi-confirmed.

- Hypothesis premise stating higher team scores in PIE variable, more successful they would be; is accepted.
- Hypothesis premise stating higher team scores in Goal Setting Alignment variable, more successful they would be; is accepted.

- Hypothesis premise stating higher team balance score is, more successful team would be; is accepted.
- Hypothesis premise stating higher heterogeneity of team based on age, more successful team will be; is rejected
- Hypothesis premise stating higher heterogeneity of team based on income, more successful team will be; is rejected
- Hypothesis premise stating higher heterogeneity of team based on minutes played, more successful team will be; is rejected

### TEAM HETEROGENEITY

Results from basketball partly correspond with prior researches of (Forbes et al., 2006; Kaiser and Müller, 2015) who conclude that team heterogeneity in start-up teams do not correspond to end performance. Different characteristics of heterogeneity were included in the research, both ascribed and affected. If basketball teams have higher diversity it does not give them competitive advantage. On the other hand Kaiser and Müller (2015) found aspect of homogeneity in start-up teams. This cannot be confirmed nor rejected, since results don't show negative coefficient and correlations. No confirmation can be made if one highly diverse team has less success than one more homogenous.

Insights on team heterogeneity and its connection to success may not be drawn from basketball example. Still one remark should be made. Heterogeneity variables still correlate to winning percentage. Further research might be conducted with larger sample.

### TEAM BALANCE

One of two balance variables relates to end success while other does not. Results correspond to Belbin's theory (Belbin 1993, 2010) which shows that team balance explains team performance. My results are different from researches done by (Batenburg et al., 2013; Van de Water et al., 2008) who say there are no significant correlations between team balance and team performance.

Regression results should be taken with caution. There was no way to measure in detail team members' behaviour preferences as Belbin theory suggests. Due to inability of access players' behaviour characteristics only focus was set on statistical data. Therefore, only end value of measurement was used in the research. Second balance variable (After Time out team balance) shows some explanation of team success but without significance.

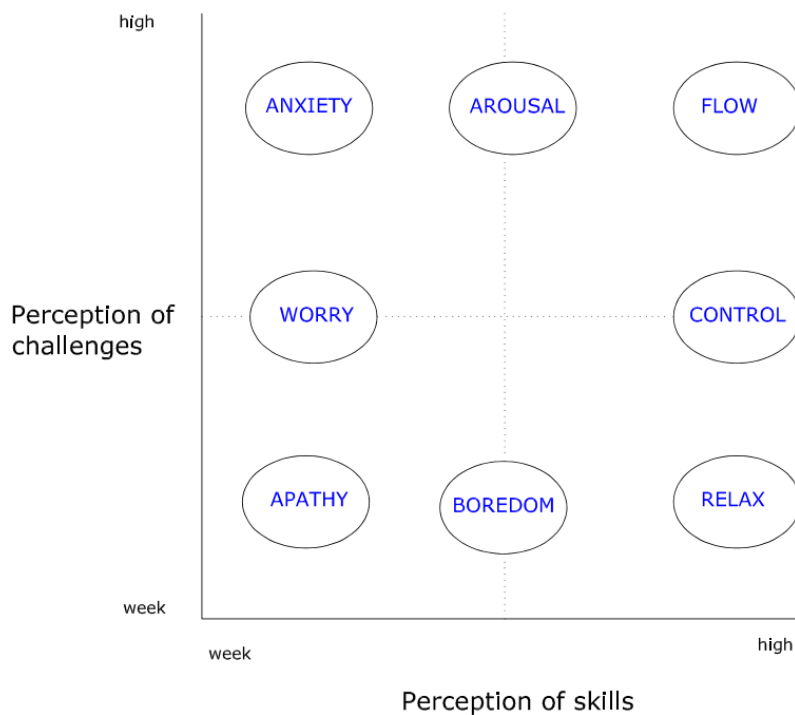
Results give us confidence that abandoning idea of finding insights in basketball, when it comes to team balance, is not fully viable. Significant correlation exists but it requires further exploration. It should go in the way of clearer examining specific roles of team members. These roles should be set using Belbin theory as benchmark, which suggests orientation on behavioural characteristics, not players' positions on the court (see Table 4). Having said this, Team balance variable cannot support specific insight transfer; rather it shows that relation exists. It gives us opportunity to develop framework around how balance should be established as Van de Water et al. (2008) suggest.

#### GOAL SETTING ALIGNMENT

Goal setting alignment variable significantly contributes in explaining team success. Results point out: higher goal setting alignment variable, higher is a chance team will be successful. Results are aligned with McKinsey & Company (2015) study showing stable organizations outperform others when it comes to returns and satisfaction of their shareholders. Results also meaningfully point why connection with a distant fields can be done and in which direction. It is possible now to say there is statistically grounded relevance in transferring knowledge of goal setting alignment aspects from basketball team to start-up environment.

Coaches in the NBA outline the culture of accountability which is aligned with role clarity management practice shown in Table 3. One of the greatest coaches of all time Phill Jackson (2013) wrote that in basketball you can do all technical segments right, have right strategy and tactics but if team is not aligned to common goal then it will be fragile. Coach Mike Krzyzewski

focuses more on open and warm communication and caring support (Silverthorne, 2006) but still outlines right players at right position are important for a win. Other coaches might have different leadership characteristics, but key is to establish team alignment through putting players in their right positions. Players should know exactly what their task is. Guenzi and Ruta (2013) outline the importance of optimal experience coming from flow theory developed by Csikszentmihalyi (1998). Theory suggest that people perform better if they feel task challenges their abilities, but not above it (Guenzi and Ruta, 2013) (see Figure 7). For example if player perceives his skills are not up to task, he will experience anxiety or arousal, which will affect his perception of status in a team and, subsequently, the alignment to common goal.



**Figure 7:** The flow model (Own illustration based on flow model of Csikszentmihalyi (1998))

Emphasis on communication, clarity of the roles and constant feedback, as Coach Krzyzewski suggest, prevents player from playing for himself and being in his own zone (Guenzi and Ruta, 2013). During team management



segment “good coaches should try to raise the level of ambitions and abilities of their athletes” (Guenzi and Ruta, 2013, p.85).

Goal setting alignment variable can be used by investors during process of start-up evaluation as well. Simple framework (Figure 8) can be a helpful tool in determining whether chances for success are high or not. Framework is adapted to start-ups and it is similar to report analysis coding scheme (see Table 7). A “Quantity of change and impact” characteristic is replaced with “Collaboration” characteristic, focusing whether team has collaborated before or not. “Focus” characteristic remained the same, with change done in what scores represent. From redefinition and upgrading a team shift is on what type of innovation is in company’s product. Other characteristics remained the same.

For early stage companies investors often lack the relevant information primarily because of the lack of data from the company. In this way, simply by grading start-ups against 4 different characteristics, data can be created. It gives opportunity to compare start-ups. No matter what industry they operate in, it can be used as benchmark tool.

COMPANY	<b>1.Collaboration</b> 1-no previous collaboration between team members 5-team members already collaborated	SCORE	<b>NOTES:</b> TEAM COMPOSITION
	<b>2.Focus</b> 1-Disruptive innovation 5-Incremental innovation		
	<b>3.Alignment</b> 1-unclear 5-clear		<b>NOTES:</b> LEADERSHIP
	<b>4.Clarity of role structures</b> 1-unclear 5-clear		

**Figure 8:** Framework for analysing alignment of teams

## 7. Conclusion

Master Thesis provides innovative way of approaching the problem of “Not the right team” in early stage companies. It looks into distant analogous field of basketball for the solution. Using general level and specific level similarities and differences, relevant connections have been established.

I have found that problem related connection can be established on three levels: Goal Setting Alignment, Team balance and Heterogeneity of team. Multiple regression analysis research has shown that Goal Setting Alignment variable, which describes stability and alignment of team and Team balance variable significantly predict team success.

Relevance of this research is in the fact it proves these variables enhance prediction of success previously done by physical performance and talent of players. Results also show team heterogeneity does not have any influence on team success which is aligned with prior researches (Forbes et al., 2006; Kaiser and Müller, 2015).

Due to limitations in measuring team balance variable, conclusion is that only Goal Setting Alignment variable represents relevant aspect which can be transferred to start-ups. Looking back to behaviour of coaches in this manner, I recommend that founders use flow model of Csikszentmihalyi (1999) to develop optimal experience for team members. With it they will develop optimal experience, alignment of members and subsequently stability of organization. It will also help in defining roles for team balance structure as Van de Water et al. (2008) suggest. Presented framework for evaluating Goal Setting Alignment can be used by founders and investor as a benchmark tool.

Basketball gives great source in finding relevant knowledge that could help start-up founders in multiple ways. Further research should focus on exploring applicable approaches from coaches and team players in team management segment, such as impact on coach behaviour or various leadership types of team success.

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# Appendix I

TEAM	REGULAR SEASON	GOAL SETTING ALIGNMENT					HETEROGENEITY		
		QUANTITY AND IMPACT OF ROSTER CHANGE	FOCUS	ALIGNMENT	CLARITY OF ROLE STRUCTURE	SUM GOAL SETTING ALIGNMENT	BLAU INDEX-AGE	BLAU INDEX-MINUTES PLAYED	BLAU INDEX-INCOME
HAWKS	17/18	1	1	2	2	6	65.80%	70.13%	81.82%
	16/17	3	3	3	3	12	76.32%	77.89%	79.74%
	15/16	2	3	5	3	13	77.21%	74.26%	83.81%
CELTICS	17/18	1	3	4	4	12	73.68%	78.42%	84.76%
	16/17	3	4	4	4	15	78.10%	75.24%	80.83%
	15/16	2	3	5	5	15	67.50%	82.50%	76.47%
NETS	17/18	2	2	4	4	12	71.00%	71.43%	72.06%
	16/17	1	4	1	2	8	64.76%	60.00%	81.39%
	15/16	2	2	1	1	6	73.53%	70.59%	80.15%
HORNETS	17/18	4	5	3	2	14	61.76%	74.26%	85.71%
	16/17	3	3	5	3	14	72.79%	80.88%	75.74%
	15/16	3	3	3	2	11	74.26%	80.15%	80.00%
BULLS	17/18	2	1	2	1	6	63.81%	67.62%	66.84%
	16/17	1	1	1	2	5	64.71%	70.59%	0.00%
	15/16	5	1	3	3	12	81.67%	59.17%	86.67%
CAVALIERS	17/18	3	2	4	4	13	79.65%	73.59%	83.33%
	16/17	5	5	5	5	20	75.71%	79.05%	76.67%
	15/16	5	5	4	5	19	76.47%	79.08%	87.91%
MAVERICKS	17/18	4	2	3	3	12	73.52%	74.31%	83.82%
	16/17	3	5	1	3	12	68.48%	74.28%	78.36%
	15/16	3	4	2	2	11	69.17%	75.00%	81.70%
NUGGETS	17/18	3	4	3	4	14	79.08%	73.86%	75.00%
	16/17	5	5	5	5	20	82.46%	82.46%	80.53%
	15/16	5	3	3	2	13	78.36%	76.61%	79.47%
PISTONS	17/18	4	3	4	2	13	62.34%	82.68%	86.03%
	16/17	3	2	3	3	11	75.24%	82.86%	85.00%
	15/16	3	3	2	3	11	72.79%	74.26%	77.94%
WARRIORS	17/18	5	5	5	5	20	77.94%	75.74%	82.50%
	16/17	3	3	5	5	16	81.62%	70.59%	71.90%
	15/16	5	4	5	5	19	72.50%	77.50%	82.50%
ROCKETS	17/18	3	4	4	4	15	76.45%	80.80%	82.46%
	16/17	3	3	3	4	13	73.86%	81.05%	79.53%
	15/16	3	5	3	3	14	73.86%	73.20%	85.29%
PACERS	17/18	1	1	4	4	10	78.36%	83.04%	84.97%
	16/17	1	3	1	2	7	74.17%	80.83%	80.15%
	15/16	2	3	2	2	9	71.67%	72.50%	83.09%
CLIPPERS	17/18	1	3	2	3	9	67.14%	78.57%	79.53%
	16/17	2	5	3	5	15	80.95%	84.76%	81.70%
	15/16	4	5	4	5	18	73.86%	82.35%	81.05%
LAKERS	17/18	2	2	4	2	10	73.19%	77.17%	81.67%
	16/17	2	1	4	2	9	79.74%	69.93%	80.15%
	15/16	4	4	1	2	11	82.86%	71.43%	78.33%
GRIZZLIES	17/18	3	2	3	2	10	71.38%	63.77%	78.43%
	16/17	2	4	3	4	13	81.62%	63.24%	83.63%
	15/16	4	5	5	4	18	77.25%	76.46%	78.95%
HEAT	17/18	5	4	5	4	18	78.95%	80.12%	75.83%
	16/17	1	2	3	2	8	78.10%	79.05%	84.56%
	15/16	4	4	3	2	13	77.78%	82.46%	78.02%
BUCKS	17/18	5	5	5	4	19	69.93%	77.17%	85.26%
	16/17	3	5	4	3	15	73.68%	82.46%	84.56%
	15/16	2	4	3	3	12	77.21%	72.06%	84.17%
TIMBERWOLVES	17/18	3	3	3	3	12	77.50%	79.17%	81.67%
	16/17	3	4	5	4	16	70.83%	75.00%	75.82%
	15/16	4	1	2	3	10	84.17%	75.83%	83.82%
PELICANS	17/18	3	4	3	3	13	74.70%	79.84%	85.29%
	16/17	2	2	2	2	8	66.77%	62.77%	0.00%
	15/16	4	4	4	3	15	56.67%	79.52%	85.00%
KNICKS	17/18	3	3	1	2	9	70.95%	73.81%	81.05%
	16/17	2	3	2	3	10	74.17%	69.17%	83.82%
	15/16	2	3	2	2	9	78.33%	82.50%	84.76%

TEAM	REGULAR SEASON	GOAL SETTING ALIGNMENT				HETEROGENEITY			
		QUANTITY AND IMPACT OF ROSTER CHANGE	FOCUS	ALIGNMENT	CLARITY OF ROLE STRUCTURE	SUM GOAL SETTING ALIGNMENT	BLAU INDEX-AGE	BLAU INDEX-MINUTES PLAYED	BLAU INDEX-INCOME
THUNDER	17/18	3	4	4	3	14	78.68%	83.82%	85.00%
	16/17	1	1	2	4	8	64.33%	62.57%	79.41%
	15/16	4	5	4	5	18	78.68%	83.09%	80.00%
MAGIC	17/18	2	3	2	2	9	70.76%	73.68%	83.81%
	16/17	1	2	2	2	7	73.10%	81.29%	80.88%
	15/16	2	2	1	2	7	72.06%	72.79%	79.41%
76ERS	17/18	4	5	5	5	19	73.12%	77.47%	81.05%
	16/17	3	5	5	3	16	62.38%	68.57%	80.48%
	15/16	3	3	4	2	12	55.56%	75.16%	69.20%
SUNS	17/18	3	3	3	2	11	71.86%	71.43%	77.78%
	16/17	2	2	4	3	11	82.35%	77.12%	71.24%
	15/16	3	2	3	2	10	71.94%	66.80%	80.39%
BLAZERS	17/18	5	5	4	3	17	67.50%	82.50%	86.93%
	16/17	4	5	4	4	17	56.19%	76.19%	85.00%
	15/16	2	1	3	3	9	66.67%	83.33%	75.82%
KINGS	17/18	1	1	3	2	7	67.97%	67.97%	76.32%
	16/17	3	3	2	2	10	80.12%	66.08%	81.70%
	15/16	2	4	1	1	8	69.52%	74.29%	82.50%
SPURS	17/18	4	5	4	5	18	80.15%	71.32%	76.47%
	16/17	3	3	4	4	14	80.00%	75.83%	80.15%
	15/16	3	4	5	5	17	72.06%	75.00%	79.08%
RAPTORS	17/18	4	5	5	5	19	59.48%	75.16%	76.19%
	16/17	4	5	4	4	17	72.06%	80.15%	84.76%
	15/16	4	5	4	4	17	68.33%	81.67%	83.33%
JAZZ	17/18	1	2	3	3	9	76.19%	80.95%	84.17%
	16/17	3	5	4	4	16	78.10%	69.52%	81.90%
	15/16	5	5	4	5	19	58.82%	77.94%	75.74%
WIZARDS	17/18	4	5	5	5	19	75.24%	81.90%	87.62%
	16/17	3	4	4	4	15	71.24%	78.43%	84.97%
	15/16	3	5	3	3	14	71.93%	74.85%	81.70%



TEAM	REGULAR SEASON	BALANCE		CONTROL VARIABLE	SUCCESS
		TEAM BALANCE	ATO TEAM BALANCE	PIE	WINNING PERCENTAGE
HAWKS	17/18	-2.00	-2.30	9.37	29.30%
	16/17	1.10	-0.20	9.98	52.40%
	15/16	2.00	3.60	10.71	58.50%
CELTICS	17/18	0.80	-0.80	10.02	67.10%
	16/17	0.40	3.70	10.01	64.60%
	15/16	0.60	-3.40	10.40	58.50%
NETS	17/18	-3.00	-6.50	9.74	34.10%
	16/17	-2.20	-2.20	8.83	24.40%
	15/16	-2.40	-1.70	8.82	25.60%
HORNETS	17/18	0.10	2.90	9.00	43.90%
	16/17	0.70	0.60	9.87	43.90%
	15/16	0.90	1.60	10.15	58.50%
BULLS	17/18	-3.20	1.10	8.84	32.90%
	16/17	0.00	-0.50	9.48	50.00%
	15/16	-0.80	0.80	9.61	51.20%
CAVALIERS	17/18	0.60	0.90	9.74	61.00%
	16/17	0.90	4.00	9.49	62.20%
	15/16	0.60	0.20	10.08	69.50%
MAVERICKS	17/18	-1.50	-0.80	9.83	26.80%
	16/17	-1.60	-0.40	9.63	40.20%
	15/16	0.10	1.10	10.26	51.20%
NUGGETS	17/18	-0.60	-0.10	10.74	56.10%
	16/17	-1.70	0.70	9.91	48.80%
	15/16	-1.80	-3.20	10.16	40.20%
PISTONS	17/18	0.30	1.30	9.79	47.60%
	16/17	-1.30	-4.40	9.32	45.10%
	15/16	-1.70	-5.20	9.46	53.70%
WARRIORS	17/18	3.50	0.50	10.58	70.70%
	16/17	4.70	4.60	11.09	81.70%
	15/16	3.30	1.66	10.64	89.00%
ROCKETS	17/18	1.00	-1.10	10.65	79.30%
	16/17	0.40	7.90	10.03	67.10%
	15/16	-0.20	3.70	9.23	50.00%
PACERS	17/18	1.70	1.40	10.49	58.50%
	16/17	1.10	1.20	9.76	51.20%
	15/16	1.10	-0.80	10.13	54.90%
CLIPPERS	17/18	1.40	2.40	8.93	51.20%
	16/17	2.30	0.90	10.77	62.20%
	15/16	3.00	5.70	9.61	64.60%
LAKERS	17/18	-0.60	-0.80	9.88	42.70%
	16/17	-3.30	-5.00	9.12	31.70%
	15/16	-4.80	-6.10	8.71	20.70%
GRIZZLIES	17/18	-2.60	-2.80	9.31	26.80%
	16/17	-0.70	0.40	9.71	52.40%
	15/16	-0.10	2.20	10.02	51.20%
HEAT	17/18	-0.30	1.40	10.97	53.70%
	16/17	-0.20	-3.90	9.90	50.00%
	15/16	2.20	0.60	10.33	58.50%
BUCKS	17/18	1.40	0.40	9.20	53.70%
	16/17	1.50	-1.80	9.92	51.20%
	15/16	0.60	0.30	8.81	40.20%
TIMBERWOLVES	17/18	2.00	3.30	10.39	57.30%
	16/17	-0.20	-3.10	9.29	37.80%
	15/16	0.60	1.10	10.00	35.40%
PELICANS	17/18	2.00	2.60	10.06	58.50%
	16/17	0.60	1.40	9.39	41.50%
	15/16	-1.90	-1.90	9.03	36.60%
KNICKS	17/18	-1.00	-3.60	9.64	35.40%
	16/17	-1.60	0.80	9.53	37.80%
	15/16	-1.10	0.20	9.60	39.00%

TEAM	REGULAR SEASON	BALANCE		CONTROL VARIABLE	SUCCESS
		TEAM BALANCE	ATO TEAM BALANCE	PIE	WINNING PERCENTAGE
THUNDER	17/18	0.80	4.50	8.85	58.50%
	16/17	-0.90	0.10	9.33	57.30%
	15/16	2.20	1.40	10.09	67.10%
MAGIC	17/18	-1.80	-7.80	9.45	30.50%
	16/17	-2.50	-1.10	9.09	35.40%
	15/16	-0.50	-2.10	10.12	42.70%
76ERS	17/18	1.40	3.80	10.97	63.40%
	16/17	-2.60	-7.00	9.13	34.10%
	15/16	-4.10	-6.70	8.49	12.20%
SUNS	17/18	-3.30	-0.60	8.65	25.60%
	16/17	-1.70	-1.10	9.18	29.30%
	15/16	-4.00	-3.70	9.13	28.00%
BLAZERS	17/18	0.10	-1.00	9.58	59.80%
	16/17	-0.60	0.10	9.20	50.00%
	15/16	-1.10	-1.50	9.58	53.70%
KINGS	17/18	-2.50	0.20	9.15	32.90%
	16/17	-0.70	1.40	9.26	39.00%
	15/16	0.20	1.50	9.19	40.20%
SPURS	17/18	1.20	1.10	10.33	57.30%
	16/17	2.80	1.30	10.67	74.40%
	15/16	4.90	4.50	11.21	81.70%
RAPTORS	17/18	1.70	0.40	10.32	72.00%
	16/17	2.50	1.20	9.95	62.20%
	15/16	2.10	5.60	10.20	68.30%
JAZZ	17/18	1.50	1.70	10.41	58.50%
	16/17	1.60	1.10	9.93	62.20%
	15/16	0.00	-0.50	9.89	48.80%
WIZARDS	17/18	0.40	-1.90	9.95	52.40%
	16/17	1.00	1.60	9.62	59.80%
	15/16	0.20	-1.30	10.36	50.00%