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## Language Diversity Impact on the Self-Efficacy of Members in Multicultural Teams

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# **Language diversity impact on the self-efficacy of members in multicultural teams**

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**Abstract**

This study aims to analyze language diversity in teams, especially in what concerns its impact on each member's self-efficacy. Even though self-efficacy is a traditional concept in organizational behavior literature and there is a growing interest in the impact of language in the organizational context, research about the connections between both sides is lacking. This research deals with this gap, covering as well language fluency, cultural intelligence and extraversion.

The answer to the research questions is based on an on-line survey to 240 university students, having participated in multicultural teams. The statistical analysis conclude that language diversity has no clear impact in self-efficacy, however fluency in the vehicular languages of teams has. Fluency has a bolder impact in self-efficacy of team members, when language diversity is higher, and when each member's cultural intelligence and extraversion levels are higher as well. These conclusions driven by such connections may provide managers with sound enlightenments about the importance of language diversity in their multicultural teams and mainly on fluency in the vehicular languages of these teams.

Keywords: language diversity, language fluency, teams, self-efficacy, cultural competence, extroversion

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## Introduction

There's a noticeable growing presence of multicultural teams in the organizational context. If companies once competed in the world's markets with mostly national workers, nowadays companies are the result of the combination of international minds, sometimes through means of mergers and acquisitions (Louhiala-Salminen et al., 2005) or simple through mean of globalized markets.

Language diversity is then brought to companies by these intercultural groups, as a result of the different backgrounds and countries of each group member and it has made companies think about the importance of a multicultural workforce on the development of new ideas and businesses (Leca et al., 2014). Languages are usually referred to be an obstacle in the communication between multicultural team workers, creating tensions and lack of trust between those who don't speak the same language (Henderson, 2005), and ultimately slowing down and increasing the cost of decision-making (Harzing et al., 2011). Despite this, investigations on the role of language had been relatively occasional (García and Cañado, 2005), if existent at all two decades ago. The role of language is often forgotten in horizontal communication and team building. Conversely, multicultural teams have been more analyzed by broader lens, incorporating cultural aspects besides language. However, Henderson (2005) supports the idea that language factors are bolder at explaining differences and outcomes than the majority of other cultural aspects, whenever it comes to communication in groups. Hence, the decision of focusing on language in this research, which intends at establishing a connection between language diversity and self-efficacy. This linkage also represents a gap found in the literature.

Self-efficacy represents the beliefs of individuals in their capacities used to carry on with different tasks. It is related to the psychosocial sphere of research, covering some of the reasons that bring individuals to have several levels of performance (Bandura, 1997). It is one of the most studied concepts in the modern psychology research (Judge et al, 2007). The importance of this concept in the organizational context lies in the connection between self-efficacy and performance (Stajkovic and Luthans, 1998). The scientific pertinence of covering the gap previously mentioned, is then connected with the aim of managing people in intercultural contexts.

Conversely, in an intercultural context, cultural intelligence has an important role in facilitating interpersonal relationships, as it is defined as the aptitude to function in multicultural settings (Ang et al., 2007). Therefore we believe that language diversity and the perception of self-

efficacy in multicultural teams may not be explained without taking into account cultural intelligence. In the same vein, extraversion, a personality dimension (McCrae and Costa, 1991), may be an important facilitator of interpersonal relationships in every human context, such as those from the professional, personal and international spheres. For these reasons, these two factors, i.e. cultural intelligence and extraversion, are included in the study.

In order to show the degree of connection between language diversity and self-efficacy of members in teams, a survey was conducted to university students. These students are the first generation in the queue to enter the labor market, and usually they experience intercultural settings during their academic lives before entering the professional world.

This introductory part will be followed by the analysis of language diversity, passing through self-efficacy, cultural intelligence and extraversion, reaching the definition of the research hypothesis. The methodology and its results will be then covered and finally a section is dedicated to suggestions on further research, followed by the main conclusions.

## **Language diversity and Management studies**

### **Definition of language diversity**

The definition of language diversity in a team is not a clear-cut issue. The most straightforward definition involves a numerical range, that is, the number of different languages that are spoken by the members in a team, and therefore numerical diversity. However, this term can have a more complex definition, if the relationship between languages is taken into account.

Language relativity, or relativeness between languages, is mostly traced to historical language evolutions (Gooskens, 2007). Today's languages are descendent from proto-languages, which were formerly spoken. These proto-languages expanded geographically and, with time, dialects of each proto-language started to appear in different places, ultimately giving place to different languages, as differences between dialects grew more and more. However, different theories persist enlightening this expansion.

This language relativity is among the three factors explaining language intelligibility, i.e. the capacity of understanding another language by the generality of a language's native speakers. Then, language intelligibility is predicted by the relationship between languages, more specifically by their phonetic distances, but not so much by their lexical similarities. However,

it also depends on people's attitude towards the other language, and on their contact with it (Gooskens, 2007).

The literature's insensibility to the importance of language diversity contributed to choosing language diversity as the main factor of this study, and the focus we are going to adopt here will be based on numerical language. To consider language relativity would ask for other type of language literature, rather distant from management literature, which intends to be more the focus.

### **Language diversity and team dynamics**

Language has historically been a forgotten topic in the generality of multinational management studies (Marschan et al., 1997; García and Cañado, 2005; Tenzer and Pudelko, 2015). These and other authors defend so, due to the fact that, while language covers virtually every single dimension of such companies, there was always little importance given to this particular factor in studies concerning cultural impacts. Such scenario has its foundation on academics' general acceptance of the big impacts of cultural barriers (as a whole) in intercultural issues. Language barriers alone are viewed as an obvious barrier to the team members' integration, thus left behind in the deeper analysis (Harzing et al., 2011). Additionally, the use of English is frequent in the international working context, leading some researchers to forget the real language impact among the spectrum of the cultural factors affecting international or intercultural issues in organizations, especially those with regard to the multicultural teams (Marschan et al., 1999). For instance, the usage of a single language within a group blinds some researchers about the possible miscommunication and misinterpretation possibilities (Henderson, 2005; Tenzer and Pudelko, 2015). Also, García and Cañado (2005) alert to the fact that people speaking a non-native language, shape their speech according to some patterns coming from their native language.

Nevertheless, there is a recent growing number of scientists analyzing the impacts of language in team dynamics. Language has a particular influencing tone in a wide range of factors characterizing team dynamics. There are positive and negative consequences derived from the presence of several cultures in one team, from which specifically arise those related to language diversity. Some authors simultaneously present both advantages and disadvantages of this, illustrating the richness driven from different perspectives and from the variety of task

expertise, but also alerting to possible misfits in team collaboration (Haas and Nüesch, 2012; Moon, 2013).

Will now advance with some specific insight into some team dynamic's features, such as power position, subgrouping and negative emotions, and interpretation. The rather negative illustrations given in each of the following insights are mostly a result of the essentialist and/or negative outlook of literature spotted by Cohen and Henderson (2017).

### ***Power position***

A vehicular language, or lingua franca, is the adopted language between people and/or groups, allowing the communication between the parts, especially when no native language is shared. García and Cañado (2005) advocate that, even if everyone is using the very same vehicular language in a team, often English, members will use it at different fluency levels, bringing grammatical constructions from their native languages. Those speaking the vehicular language natively will automatically outstand during debates. Even if the content of their speeches doesn't blur their colleagues' speeches and ideas, the fact that they use language more clearly is an element, which generally overrates their discourse, and which lets them manage debates at their will. This allocates power position to those being able to manage communication procedures inside teams (Harzing et al., 2011).

García and Cañado (2005) also stress that not only native speakers have this advantage, but also those, whose native languages are closer to the lingua franca. They gave the example of Dutch and German counterparts, whose languages, by the simple fact that they resemble English at a higher degree, allow them to control the usage of English better than French, Spanish and Italian co-workers do, for instance. This is much related to the language relativeness and to the metacognitive characteristic of language knowledge.

Ultimately, those lacking the language capability in the team's vehicular language, are generally unable to communicate their expertise, even if this expertise would be highlighted, had all team members the same language level (Tenzer and Pudelko, 2017). This creates shifts in the communication flows, which switch directions, according to the language's structure and to each member's capabilities (Marschan et al., 1999).

### ***Subgrouping and negative emotions***

García and Cañado (2005) found out a subgrouping of less proficient members in certain teams. Spanish and Italian colleagues were linked by their own perceived difficulty in speaking the vehicular language. Such subgroupings usually draw on the phenomenon of code-switching,

defined in the team context as the switch of languages between some team members, mostly with the purpose of a better understanding or informal interactions. This imposes its own structure on communication flows and creates language clusters (Marschan et al., 1999). These are viewed as a cause of potential conflict in groups (Khomutova, 2015), making native speakers feel rejected and angry at those colleagues (Tenzer and Pudelko, 2015; Harzing et al., 2011).

Subgroupings play a big role in the fueling of negative emotions. Tenzer and Pudelko (2015) and Von Glinow et al. (2004) highlight many consequences at the emotional level. Emotions, such as anxiety, fear, embarrassment, stress, and frustration, tend to be present in non-native speakers. These latter may perceive native speakers as arrogant (resentment towards others), thinking that native speakers may mistrust them for their inferior skills in the vehicular language. These emotions awake tensions and deteriorate effective communication within teams, leading to a negative emotion cycle and subgrouping, as previously stated.

At a personal level, the presence of high levels of language anxiety in non-native speakers makes them experience a series of negative feelings, which may lead to a certain shift of focus from task-related activities to language-related thoughts. This shift may ultimately deteriorate job performance (Haley et al., 2015).

### ***Interpretation***

More than the existing impacts on speech mastery and its consequences at the power and emotional levels, language structures are regarded in literature as having impacts on interpretation and perception levels (Henderson, 2005). This author defends the existence of different backgrounds' influence in different interpretation mechanisms. Not only the emitter of the message can have difficulties formulating it, but the receptor may also be constrained in certain ways. This can even extend itself to simple time notions. For instance, while Swedes do conceive time as being measured by “length” words, Spaniards do that recurring to “volume” words (Teitel, 2017). Such basic differences are a starting point to deeper dissimilarities and following misinterpretations.

The capacity to interpret (social) meanings, responding adequately in the context of interactions, is named as "sociolanguage competence". Therefore, this ability is a result of the influence of culture and language, through an individual's life, in the interpretation of words and meanings. Still, the capacity to interpret can upgrade when there has been some sort of



individual exposure to the vehicular language before. University programs, such as Erasmus, are a key point on the strengthening of these abilities (Llanes et al., 2016).

Besides this, Henderson (2005) advocates that interpretation is more dependent on the communication skills of the message's emitter, rather than on its language skills. Also, miscommunication doesn't happen because of poor uses of grammar, but rather due to differences in patterns of discourse and to metacommunication styles. However, these differences in patterns of discourse are themselves allied to the native language's grammar, because of the way it makes an individual formulate sentences.

All these mentioned misunderstandings usually happen when English is used as the team's lingua franca, especially because it is usually used as a vehicular language. Cohen and Henderson (2017) say that English as a lingua franca is a multilingual way of speaking English. This way of speaking English is not based on British/American practices, but rather on the interlocutor's own native language (Louhiala-Salminen et al., 2005).

Lastly, a deficient usage of a vehicular language can cause disruptions in trust development. The misunderstandings coming from unmet interpretations may lead the team, or part of it, to the undertaking of wrong decisions, calling into question the task-specific capacities of some members (Cheng et al., 2016).

## **Self-efficacy**

Self-efficacy, sometimes mentioned as "perceived self-efficacy", is a term which appeared in psychology's literature in the latter half of the 20th century, highlighted by its importance in the social-cognitive theory (Judge et al, 2007). It was originally formulated by psychologist Albert Bandura. In one of his works, Bandura (1997) denotes "self-efficacy" as an individual's beliefs in his/her capabilities, derived from the desired control that people want to have over the events, which somehow affect their lives. These beliefs in capabilities are related to the competences used to carry on with tasks with several performance levels.

Self-efficacy is not restricted to a singular definition, since it varies according to different perspectives (Bandura, 1977). The expectations of an individual can take in a bigger or smaller magnitude, depending on the difficulty of the task. They can be more or less generic, reliant on the individual's way of generalizing them to different scenarios. They can also be stronger or weaker, dependent on how individuals stick to their beliefs, when experiences are disconfirmed.

Also, self-efficacy has a significant number of sources. Bandura (1977) affirms that the personal record of performance, vicarious experience, verbal persuasion and emotions, all account for the differences between self-efficacy levels. If experiences are negatively evaluated, self-efficacy is at risk. A negative performance record will attenuate one's expectations over his/her success in performing tasks.

The studies of self-efficacy have led to this term's inclusion as "generalized self-efficacy" into the group of the four "core self-evaluation traits" (Judge et al., 1998; Judge and Bono, 2001). The core self-evaluation traits are defined as conclusions or evaluations that individuals do about themselves. Generalized self-efficacy is an adaptation of Bandura's work, seen as an extension of its scope from a task-level to a global level, where one's capacities of joining motivation, cognitive assets, and actions, to the control of life events, are internally estimated. Harrison et al. (1996) advocate that general self-efficacy is more determinant than task-specific self-efficacy, at least in new, ambiguous and less familiar settings, which in turn are common characteristics of multicultural teams settings.

For the past 20 years, some authors have been hypothesizing possible connections between "self-efficacy" and some job-related variables. The works of Judge and Bono (2001), Judge et al. (1998), Judge et al. (2007) and Stajkovic and Luthans (1998) were four of the analyzed studies, whose focus lied on the outcomes/effects of self-efficacy in job-related contexts, such as job satisfaction and performance. There is a significant correlation between self-efficacy and performance (Stajkovic and Luthans, 1998). This is likely due to the fact that individuals bring with them certain characteristics, related to self-efficacy, into their work environment (Judge et al, 2007). Judge and Bono (2001) showed a better connection between generalized self-efficacy and job satisfaction, as part of a study establishing relationships between the four "core self-evaluation traits" and job satisfaction and performance. From these four traits, generalized self-efficacy was the most correlating trait with job satisfaction, and the second most correlating with job performance, just behind self-esteem.

This explains the usage of self-efficacy as a fundamental piece of this work. It may be regarded as a proxy of job performance and job satisfaction, two important job-related variables with impacts in the organizational context, and very importance to managers.

Not only self-efficacy impacts performance at work, but it also has impacts in the performance at school and university. The higher the level of one student's self-efficacy is, the more likely it is for him/her to be integrated in school/university, regarding the academic, social, personal

and career ambition domains (Weng et al., 2010). Finally, it is important to remark that low self-efficacy, even at pre-professional stages, may influence one's future crucial career decisions (Haley et al., 2015).

## **Cultural Intelligence and Extraversion**

Cultural intelligence and extraversion are factors said to have effects in perceived self-efficacy levels of members in multilingual teams, alongside fluency in the vehicular language (Templer et al., 2006; Esfandagheh et al., 2012). While these effects are prone to be discussed right after this chapter, cultural intelligence and extraversion remain to be discussed in detail for now.

### **Cultural Intelligence**

An individual's aptitude to perform and cope within multicultural settings is defined as cultural intelligence, often abbreviated to "CQ" (Ang et al., 2007). This intelligence type isn't wedged to the demonstration of cultural cognitive knowledge, but rather extended to a combination of social, emotional and practical intelligence scopes, when all are applied to multicultural contexts (Ang and Inkpen, 2008). This is why it is also demonstrated as "cultural competence".

According to Earley and Ang's primary work on cultural intelligence (as cited in Ang et al., 2007), CQ comprises four main dimensions: metacognitive, cognitive, motivational and behavioral.

The metacognitive dimension (metacognitive CQ) comprises mental, top-level cognitive processes used by individuals to the acquisition and management of cultural knowledge. Processes, such as the questioning of cultural assumptions or ethnic stereotyping, are part of this dimension. Cognitive CQ, on the other hand, represents what's usually perceived to be cultural intelligence in a simplified way, normally as a demonstration of knowledge of some cultural norms and facts. One example of this is the familiarity someone can have with different ways of addressing people in various countries. Motivational CQ represents one's capability of allocating energy and attention to cultural knowledge acquisition, based on the intrinsic interest and confidence in cross-cultural effectiveness. Lastly, behavioral CQ embodies one's capabilities of displaying appropriate actions when dealing with people of other cultures.

Consequently, the effective demonstration of CQ has its outcomes in three main areas: cultural judgment and decision making, cultural adaptation and task performance in multicultural settings (Ang et al., 2007). Specifically, metacognitive CQ and cognitive CQ predict cultural

judgment and decision making. Motivational CQ and behavioral CQ predicted cultural adaptation, and only metacognitive CQ and behavioral CQ predicted task performance. Task performance will be given more insight in the hypotheses section when the analysis of cultural intelligence and the analysis of self-efficacy get to be crossed.

Alternatively, literature carries a vast amount of definitions and concepts similar to that of cultural intelligence, such as “intercultural competency” (Bird et al., 2010), “global mindset” (Javidan et al., 2016) and “cross-cultural adjustment” (Harrison et al., 1996). Also, literature applies the concept of cultural intelligence to teams and corporations.

Bird et al. (2010) define intercultural competency as one’s capability to function effectively in another culture. This definition is very similar to CQ’s designation, however it differs in its composition. The authors attribute three dimensions to this concept, namely the perception management, relationship management and self-management domains. These domains cover a solid part of those points belonging to CQ’s dimensions, although they do it in a different way.

Harrison et al. (1996) also approaches the term of “cross-cultural adjustment”. These authors define it as the psychological comfort degree of an individual in the host culture, based on his/her adjustment to certain elements, such as the general environment, nationals and the work whole setting.

Moon (2013) applies the concept of cultural intelligence to teams. The author affirms that team’s CQ attenuates some negative effects of cultural diversity in team performance. One reason behind this improvement lies on the direct influence of metacognitive, cognitive and motivational CQ in knowledge sharing, i.e. in the dissemination of acquired knowledge between colleagues (Chen and Lin, 2013).

### **Extraversion**

According to Judge et al. (2007), personal differences are at least as important as self-efficacy in the prediction of job performance. Therefore, a group of personal traits, more specifically extraversion, is chosen as another factor in this work, which we believe to have impacts in self-efficacy in intercultural settings, where interpersonal relationships are crucial.

Extraversion is one of the pieces of the Five-Factor model. This model, also named “Big Five Personality Traits”, is composed by five different dimensions of personality: Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness (McCrae and Costa, 1991). The dimensions are said to be the five major ones accounting for most differences in personality

traits, and this model remains highly claimed by a lot of psychologists, such as Esfandagheh (2012).

According to McCrae and Costa (1991), extraversion is associated with positive energy, talkativeness and attention seeking. The opposite of it best describes those who are distant, solitary and serious.

Summing up the other dimensions, neuroticism denotes the degree of emotional instability and lack of control, normally common to anxious and impulsive people. Openness (to experience) is another dimension of personality. It includes imaginative, sensitive, curious and broad-minded people, who always seek something new. Another dimension is Agreeableness, common to people who are usually cooperative, rather than competing and challenging one another every time. Finally, Conscientiousness refers to organized, yet stubborn people, who tend to follow a specific path.

Extraversion will be the sole personality dimension used as one of the moderating variables in this work's methodology. From the five dimensions, this is the one which we believe to be more related to the impacts driven from the presence of various cultures in working teams, especially when communication is a key essential point. Also, it is associated with positive attitudes towards to the work in multicultural settings (Moon, 2013).

Openness and agreeableness are two other personality dimensions with some regard in the multicultural setting. Open people are seen as able to dive into new experiences and perceived as more tolerant, while people scoring high in the agreeableness dimension are prompt to be sympathetic and cooperative (Hudson and Inkson, 2007). These dimensions were proven by these authors to be more present in aid workers, who dealt with different cultures, however these dimensions don't relate as much with language and communication, as extraversion does.

## **Research hypothesis**

Literature suggests that there are some direct and indirect relationships between some our variables, "language diversity", "self-efficacy", "cultural intelligence" and "extraversion". Those relationships are presented in this section, giving place to the definition of five hypothesis.

### **Language diversity and self-efficacy**

There is no noticeable correlation between these “language diversity” and “self-efficacy” in the literature explored. It is therefore a gap found in the literature, which this work aims to cover. There is however a number of studied elements, which are prone to predict the way these variables may relate to each other.

Much focus here is attributed to the negative impact of language diversity in group dynamics, already presented before. A summary of those negative impacts include: i) native or proficient speakers of the native language will have advantage over others in the team, rising unfair differences of power, as a result of language, and not as a result of technical competences (García and Cañado, 2005); ii) a tendency of subgroups to be formed within teams, due to language connections, which may cause unnecessary conflicts (Harzing et al., 2011); iii) misinterpretations and misperceptions, even when a vehicular language is spoken, leading to a decrease in trust; iv) anxiety, fear, embarrassment, stress, and frustration as a result of the three previously listed.

Even if literature has recently started regarding language diversity as a carrier of advantages to team dynamics (Cohen and Henderson, 2017), the widespread acceptance of the negative impacts in the literature suggest an harmful influence of language diversity in the perception of self-efficacy by members in language diverse teams.

Bandura (1977) views emotions as a regulator and source of self-efficacy. Anxious and frightened people expect to perform worse than what they would expect, if they weren't experiencing those negative emotions. Anxiety may be applied to non-native speakers, derived from the lack of comfort they have with the vehicular language (Haley et al., 2015). However, it may also have roots on phenomena, such as code-switching, which may leave native and proficient speakers apart from the rest of the team, thus angry at them and consequently anxious (Tenzer and Pudelko, 2015).

Since literature indicates this bad influence of language diversity in the development of emotions in members, which may negatively source their self-efficacy perceptions, we suggest the very first hypothesis:

***H1** – The higher the language diversity in a team, the smaller the level of self-efficacy perceived by its members is;*

### **Fluency in the vehicular language and self-efficacy**

While the first hypothesis tries to test the connection between language diversity and self-efficacy, the second hypothesis assesses the influence of the fluency in the vehicular language in the perception of self-efficacy.

Non-native speakers have more language anxiety than natives at work (Haley et al., 2015). According to these authors, the more intense language anxiety is, the less intense are self-efficacy levels.

Concurrently, García and Cañado (2005), as previously mentioned, affirm that those mastering the vehicular language tend to have more power in multicultural teams, while Tenzer and Pudelko (2017) say that those lacking capabilities in the lingua franca, will struggle to express their knowledge, becoming more anxious.

In short, literature advocates that fluency has an impacts in the members' self-efficacy, therefore the second hypothesis comes as follows:

*H2 – The higher the fluency of a member in the team's vehicular language, the higher the level of self-efficacy perceived by that member is;*

### **Fluency, language diversity and self-efficacy**

We believe that language diversity has a moderator effect between fluency in the vehicular language and self-efficacy. While members of monocultural teams may not struggle to speak the vehicular language, since it is the same as their own mother tongue, members who are not fluent in their team's lingua franca may struggle more.

In order to test this assumption, which is a complement to the previous hypothesis, the third hypothesis states:

*H3 – The relationship between a member's fluency in the vehicular language of the team and the level of self-efficacy perceived by that member, is moderated by that team's language diversity.*

### **Fluency, cultural intelligence and self-efficacy**

Besides language diversity, fluency is another important language factor affecting team dynamics (García and Cañado, 2005). However, unlike language diversity, fluency regards the individual level, such as the factors of cultural intelligence and extraversion. For that reason, the fourth and fifth hypothesis of this work deal with fluency, and not directly with language diversity.

To begin with cultural intelligence, some authors say that it has been found to have direct linkages with self-efficacy (Templer et al., 2016; Harrison et al., 1996; Moon, 2013). The two factors are generally shown to be connected.

Templer et al. (2016) have tested and concluded that self-efficacy predicts cross-cultural adjustment and actual task activity. Behind this lie findings on how motivational CQ holds a self-efficacy component, which is allied to intrinsic motivation to foretell cultural adjustment. Twenty years before Templer et al., Harrison et al. (1996) also showed that people, who demonstrated higher levels of general self-efficacy, presented better cross-cultural interaction and work adjustment.

This impact of cultural intelligence in self-efficacy may be an indicator of the moderator effect of cultural intelligence in the relationship between fluency and self-efficacy. All of this leads us to the fourth hypothesis:

***H4** – The relationship between a member’s fluency in the vehicular language of the team and the level of self-efficacy perceived by that member, is moderated by that member’s cultural intelligence.*

### **Fluency, extraversion and self-efficacy**

It has been stated that extraversion is associated with positive attitudes towards to the work in multicultural settings (Moon, 2013). Extraverts are associated with positive energy, talkativeness and attention seeking (McCrae and Costa, 1991), therefore they are more exposed to communication with other team members.

For instance, according to Esfandagheh et al. (2012), training is one of the processes in teams, which can boost team and corporation performance. Training can be also a state of intensive communication between two or more colleagues. With this, these authors further state that extraversion is positively related to pre and post-training self-efficacy, because a more powerful



communication, proper to extroverts, allows their energy levels to boost their self-efficacy degree.

Also, as stated before, vicarious experience is one of the sources of self-efficacy (Bandura, 1977). In other words, the experience of others may influence one's self-efficacy. Mischel et al. (1973) advocate that either positive or negative experiences increase attention to positive or negative personality info about the self, respectively. Furthermore, success not only increases own positive reactions, but it also seems to facilitate benign reactions toward other people. When a proper communication is established, the message of success or failure can be fully transmitted. Extroverts are usually better at communicating, thus they may enhance this source of self-efficacy towards others and themselves. This communication may even be better, if they are fluent in the vehicular language. So, the formulation of the fifth and last hypothesis is as follows:

*H5 – The relationship between a member's fluency in the vehicular language of the team and the level of self-efficacy perceived by that member, is moderated by that member's extraversion levels.*

## **Methodology**

We used a quantitative methodology and a survey made available online for university students. This section presents a detailed explanation of the survey's measures and the procedures taken to collect the data.

### **Measures**

The measuring of the variables present in the survey is traced to the works on the language fluency assessment (Council of Europe, 2001), on the General Self-Efficacy (Schwarzer and Jerusalem, 1995), on Cultural Intelligence (Van Dyne, 2005), and on Extraversion from NEO-FFI (McCrae and Costa, 1991) questionnaires. These authors have originally developed the correspondent scales to measure each variable, with some adjustments over the years. Each measure/scale will be presented individually, totalizing four scales. The last three scales of this chapter had already been adapted for the Portuguese population, which is relevant for this study, since Portuguese respondents form the majority of answers of the survey.

### ***Language diversity***

The survey's item relative to the language diversity of the participant's team was the sole not to have roots in any reviewed work. It is based on a simple numeric integer scale, representing the number of languages of the participant's referred team.

### ***Language fluency***

The European Union has been putting efforts on language and all of its implications in the community's everyday life. Within that effort's scope, the Council of Europe (2001) created a document entitled "Common European Framework of Reference for Languages" (CEFR), enabling a standardized description of foreign language's learners' achievements in the following language activities: listening, reading, spoken interaction, spoken production and writing. It is now widely used as an indicator of people's language abilities, even outside Europe (Mainichi Japan, 2017). This framework crosses the mentioned language activities with six performance levels, two for each language-ability stage, namely "Basic User", "Independent User" and "Proficient User". While "basic users" may speak the language to a certain degree, "proficient users" are able to master the idiom, even when it is presented in various, non-expected ways (Council of Europe, 2001). This framework is used in this research to evaluate the fluency of the team member in the team's vehicular language, by analyzing his/her self-assessment in CEFR.

### ***Self-efficacy***

The measuring of self-efficacy is made through the General Self-Efficacy scale (Schwarzer and Jerusalem 1995). According to Harrison et al. (1996), general self-efficacy is more determinant than task-specific self-efficacy in ambiguous and less familiar situations. Since multilingual teams are characterized by diverse sets of cultures and languages, communication suffers some impact from misinterpretations at various levels, leading to a degree of ambiguity in teams (Henderson, 2005). Therefore, the present scale was used. The scale included 10 items and was slightly adapted to fit the experience in teams, by rewriting the sentences in the past tense, such as "*If a colleague opposed me, I could find means and ways to get what I wanted*" and "*I could always manage to solve difficult problems, if I tried enough*".

This General Self-Efficacy Scale was validated to the Portuguese population by Araújo and Moura (2011), with a sample of 536 respondents and a Cronbach's Alpha of 0.870, which is higher than the reference value of 0.700 defined by Cortina (1993).

### ***Cultural intelligence***

We used Van Dyne (2005)'s scale to measure cultural intelligence. This scale is composed by 20 items, distributed by the four dimensions of cultural intelligence. The metacognitive dimension includes 4 items, such as "*I am conscious of the cultural knowledge I apply to cross-cultural interactions*"; the cognitive or knowledge dimension includes 6 items, such as "*I know the rules (e.g., vocabulary, grammar) of other languages*"; the motivation dimension includes 5 items such as "*I enjoy living in cultures that are unfamiliar to me*"; the behavior dimension includes 5 items, such as "*I vary the rate of my speaking when a cross-cultural situation requires it*".

This Four Factor Cultural Intelligence Scale is validated to the Portuguese population by Sousa et al. (2015), based on a sample of 275 respondents and on a Cronbach's Alpha of 0.930, also higher than the 0.700 reference value.

### ***Extraversion***

Extraversion was based on the personality inventory of McCrae and Costa (1991), known as NEO-FFI. Based on what is known as the Big Five theory of personality, this list of items is used in many psychology studies and covers the big five traits of personality already mentioned, from which extraversion was implemented in this survey for the previously stated reasons. Extraversion includes 12 items, such as "*I enjoy having a lot of people around me*". The Extraversion Scale was also validated to the Portuguese population by Pedroso-Lima et al. (2014), in a study of the psychometric properties of the NEO-FFI, counting on a sample of 1178 respondents and on a Cronbach's Alpha of 0.800.

All the three last mentioned measures are based on Likert-type scales, used to let participants tell their agreement level to each statement. General self-efficacy used a five-point Likert scale, while the other two (extraversion and cultural intelligence) scales used a seven-point Likert scale.

The survey included 20 support/sociodemographic questions, in order to enrich the final analysis, and two open questions were added, which let each participant leave comments/suggestions, as well as his/her email address, should the participant wish to receive a summary of this work's results.

## **Data collection procedures**

The data collection used a survey made available to university undergraduate and master-level students of the various faculties of University of Porto, in Portugal. This is in line with the author's proposition, stating that university students are the next generation to enter the labor market, and that they are experiencing international academic contexts before arriving in said labor market.

The University of Porto has nearly thirty thousand students, fourteen faculties and more than six hundred courses. Foreign students make up more than 12% of the total number of this university's students. Thus, this university has a considerable international characteristic. The emailing platform, common to most University of Porto's faculties, was used as the launch pad of the survey to the academic population. The survey was open from the 2<sup>nd</sup> May 2017 to the 26<sup>th</sup> June 2017, and it was sent to the same population four times. A Portuguese and an English version of the survey were emailed in the same message, so that both Portuguese and foreign students could answer the survey with negligible language barriers.

## **Results**

### **Sample**

The sample was composed of 240 respondents. 246 respondents took part in the survey, however six questionnaire responses needed to be eliminated due to excessive missing values. The largest proportion of respondents were female (69%), representing more than the double of the number of male respondents. Most of the respondents were under 25 years old, totalizing nearly two thirds of the sample ( $M = 25.67$ ;  $SD = 7.92$ ;  $Min = 18$ ;  $Max = 65$ ). Concerning the respondents' language diversity, it is important to note that seven different language families are present in the sample (Indo-European – 96,7%; Turkic - 0.8%; Niger-Congo – 0.8%; Uralic - 0.4%; Sino-Tibetan – 0.4%; Tai Kaidai – 0.4%; Austronesian – 0.4%), but also that Portuguese is by far the most common language of the participants (85.8%).

Regarding the completed academic level of the participants, most had completed highschool (37.9%). A considering number of participants, have completed the master degree (30%) and doctorate (4.6%), which indicates that the sample included also workers, as it is also clear from the high age of some members in the sample. Most participants come from the languages (21.3%), economics fields (17.9%) and health sciences (15%).

It is also important to show the different vehicular languages of the sample's groups. The majority of the answers referred Portuguese (57,5%) and English (37,1%) as the vehicular languages of the respective groups. However, other eight vehicular languages, belonging to the Indo-European language family, figured out in this sample: Catalan- 0,4%, Dutch – 0.8%, French- 0.8%, German – 0.8%; Greek – 0,4%, Luxembourgish – 0.4%, Spanish – 1.3% and Swedish – 0,4%.

### **Instrument validity and reliability**

The four instruments used in this study were all subject to internal reliability tests, and three of them to validation procedures.

In terms of internal consistency, Cronbach's Alpha ( $\alpha$ ) was calculated for each measure (table 1). All the used scales show very good reliability, higher than the mark of 0.700 (Cortina, 1993).

**Table 1 – Internal Cronbach's Alphas for each one of the used instruments**

<b>Instrument/Scale</b>	<b><math>\alpha</math></b>	<b>Items</b>
<b>CEFR (Language fluency)</b>	0.975	5
<b>Generalized Self-Efficacy</b>	0.876	10
<b>Cultural Intelligence</b>	0.928	20
<b>Extraversion</b>	0.824	12

Previous works had already indicated good psychometric properties of most instruments chosen as mentioned earlier. The work of Araújo and Moura (2011) was applied to the validation of the Generalized Self-Efficacy scale with a sample of 536 respondents, the one of Sousa et al. (2015) for the validation of the Cultural Intelligence scale with a sample of 275 respondents, and the work of Pedroso-Lima et al. (2014) for the validation of the NEO-FFi scale, from which the elements of extraversion's measure come from, with a sample of 1178 participants.

Regarding the instruments' validity, a confirmatory factor analysis was conducted, that confirmed the previous dimensions found in the different instruments.

### **Tests and hypothesis results**

In order to test the hypothesis, five models were designed and statistically tested.

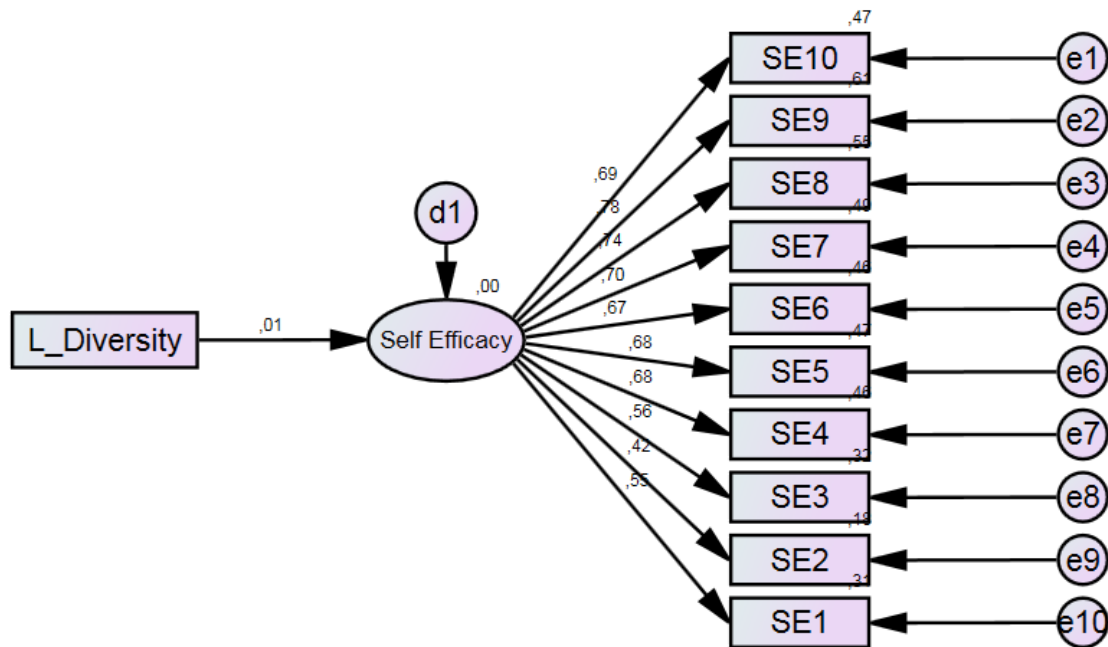
#### ***1<sup>st</sup> model - Language diversity and self-efficacy***

The first hypothesis is tested with the first model, which analyzes the impact of language diversity in self-efficacy. The physical representation of the structural equations model (SEM) is shown in Figure 1, while the regression estimates are shown in Table 2. Each self-efficacy's component is also depicted with each error of its own.

**Table 2** – Regression estimates of the SEM model for self-efficacy and language diversity

	Path	$\beta$	SE	$p$
Self-efficacy	<--- Language diversity	0.003	0.023	0.906

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p \leq 0.001$



**Figure 1** – Structural equations model for self-efficacy and language diversity

$\chi^2 = 157.286$ ,  $DF = 44$ ,  $\chi^2/DF = 3.575$ ,  $GFI = 0.887$ ,  $CFI = 0.883$ ,  $RMSEA = 0.104$

The resulting values of this model proved a clear lack of relationship between language diversity and self-efficacy, as seen in Table 2. Therefore, the first hypothesis is not verified.

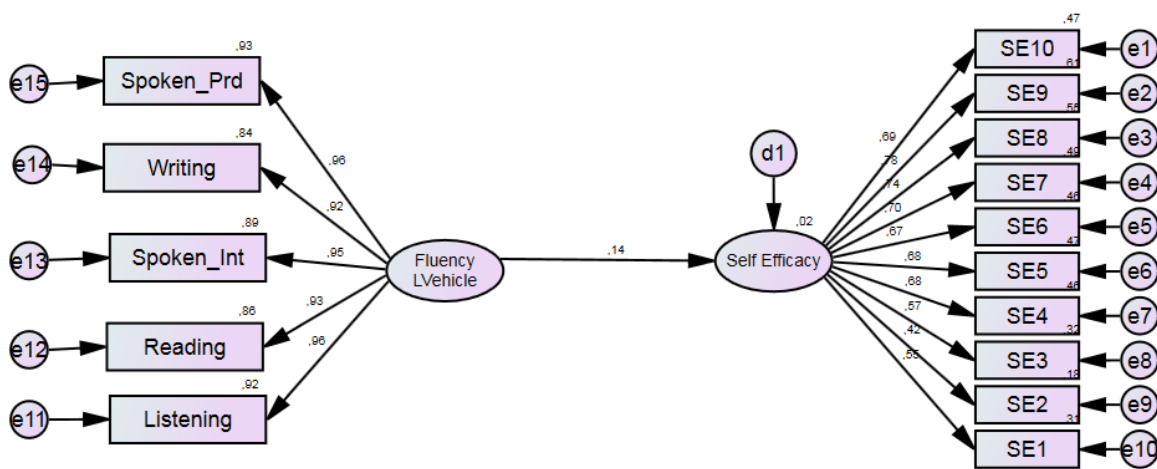
**2<sup>nd</sup> model – Fluency in the vehicular language and self-efficacy**

The second model depicts the relationship of the second hypothesis, namely the impact of the fluency in the vehicular language in self-efficacy, shown in Figure 2. Table 3 shows the regression estimates for the same model.

**Table 3** – Regression estimates of the SEM model for self-efficacy and fluency in the vehicular language

	Path	$\beta$	SE	$P$
Self-efficacy	<--- Fluency Vehic. Language	0.075*	0.037	0.046

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p \leq 0.001$



**Figure 2** – Structural equations model for self-efficacy and fluency in the vehicular language

$\chi^2 = 304.852$ ,  $DF = 89$ ,  $\chi^2/DF = 3.425$ ,  $GFI = 0.857$ ,  $CFI = 0.924$ ,  $RMSEA = 0.101$

The model's results show a positive and significant impact of fluency in the vehicular language in self-efficacy. Also, the goodness of fit of the model is acceptable, according to Marôco (2014) reference values. So, the second hypothesis is accepted.

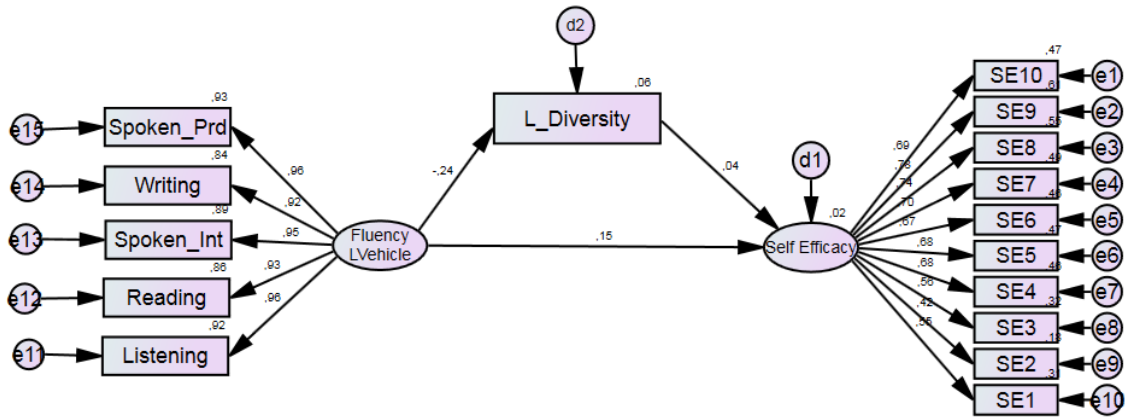
### ***3<sup>rd</sup> model – Fluency in the vehicular language, self-efficacy and language diversity***

This model was created to test the moderating impact of language diversity in the relationship between fluency and self-efficacy, as the following Table 4 and Figure 3 represent.

**Table 4** – Regression estimates of the SEM model for self-efficacy and fluency in the vehicular language, with the moderating impact of language diversity

	Path	$\beta$	SE	$p$
Self-efficacy	<--- Fluency Vehic. Language	0.080*	0.039	0.037

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p \leq 0.001$



**Figure 3** – Structural equations model for self-efficacy and fluency in the vehicular language, with the moderating effect of language diversity

$$\chi^2 = 316.348, DF = 102, \chi^2/DF = 3.101, GFI = 0.860, CFI = 0.925, RMSEA = 0.094$$

The relationship between fluency in the vehicular language and self-efficacy is strengthened with the impact of language diversity. The estimate of the regression is 0.080, higher than the one in the second model, and the  $p$ -value is 0.037, lower than the one in the same referred model. The goodness of fit of this model is also acceptable (Marôco, 2014). Consequently, the third hypothesis is accepted.

#### **4<sup>th</sup> model – Fluency in the vehicular language, self-efficacy and cultural intelligence**

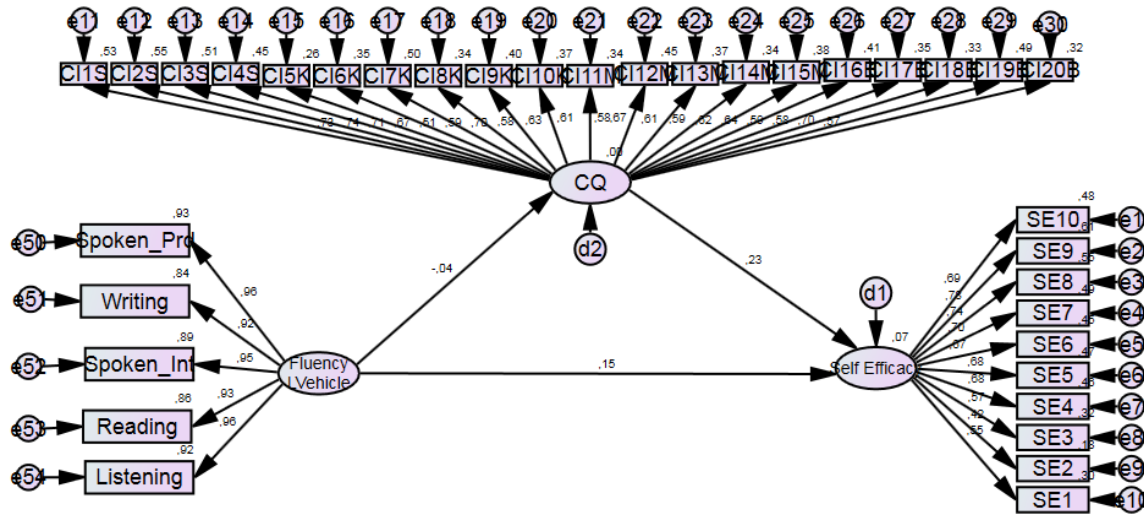
This fourth model is also an adaptation of the second model, but now with the moderating factor of cultural intelligence. Figure 4 physically shows the model and respective errors, while Table 5 shows the regression estimates for this model.



**Table 5** – Regression estimates of the SEM model for self-efficacy and fluency in the vehicular language, with the moderating impact of cultural intelligence (CQ)

	Path	$\beta$	SE	$p$
Self-efficacy	<--- Fluency Vehic. Language	0.080*	0.037	0.030

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p \leq 0.001$



**Figure 4** – Structural equations model for self-efficacy and fluency in the vehicular language, with the moderating effect of cultural intelligence

$$\chi^2 = 3633.852, DF = 1671, \chi^2/DF = 2.175, GFI = 0.685, CFI = 0.821, RMSEA = 0.050$$

The relationship between fluency in the vehicular language and self-efficacy is strengthened with the impact of cultural intelligence, which is higher than the impact of language diversity. The regression’s estimate is 0.080, the same as the one in the third model, but the  $p$ -value is 0.030, lower than the one in the third model. The goodness of fit of this model is also acceptable, expect for the GFI indicator, according to Marôco (2014). Therefore, the fourth hypothesis is accepted.

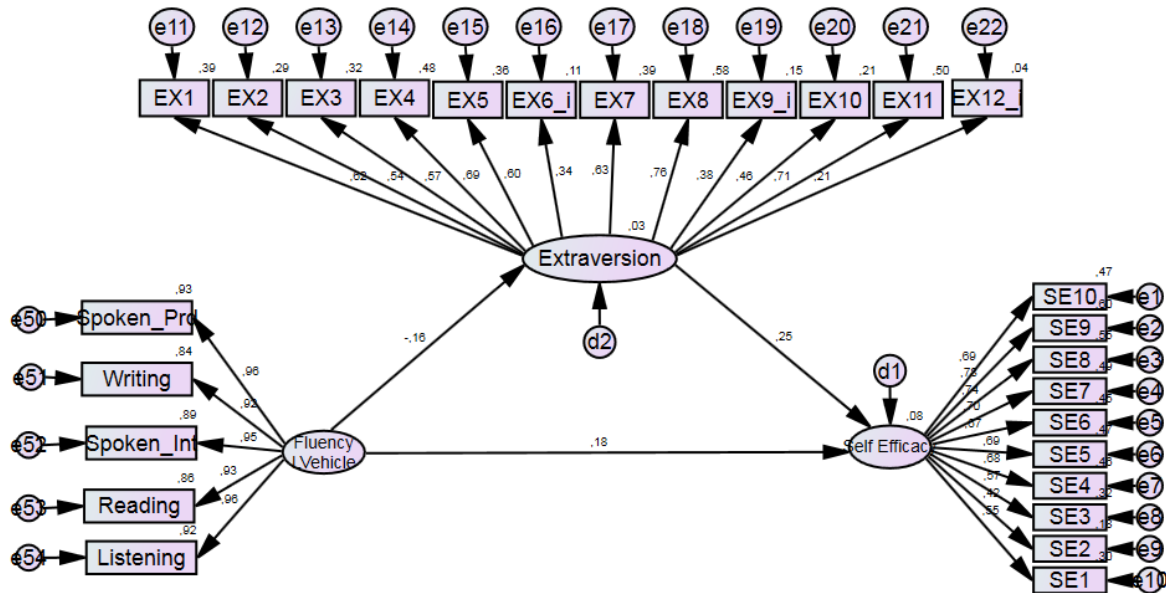
**5<sup>th</sup> model – Fluency in the vehicular language, self-efficacy and extraversion**

Extraversion’s moderator effect is due to be tested in the model, in what regards the same relationship shown in the second to fourth models. Figure 5 represents this last model, while Table 6 shows the regression estimates for the same model.

**Table 6** – Regression estimates of the SEM model for self-efficacy and fluency in the vehicular language, with the moderating impact of extraversion (CQ)

	Path	$\beta$	SE	$p$
Self-efficacy	<--- Fluency Vehic. Language	0.095*	0.037	0.010

\* $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p \leq 0.001$



**Figure 5** – Structural equations model for self-efficacy and fluency in the vehicular language, with the moderating effect of extraversion

$\chi^2 = 2195.400$ ,  $DF = 963$ ,  $\chi^2/DF = 2.280$ ,  $GFI = 0.747$ ,  $CFI = 0.845$  and  $RMSEA = 0.052$

The relationship between fluency in the vehicular language and self-efficacy is even more strengthened with the impact of extraversion, which is higher than the impact of language diversity and cultural intelligence. The regression’s estimate is 0.095, the highest of all models, and the  $p$ -value is 0.010, the lowest of all models too. The goodness of fit of this model is also acceptable, given the reference values of Marôco (2014). Finally, the fifth hypothesis is accepted.

## Discussion

Language diversity does not seem to impact self-efficacy. Literature had indirectly suggested a negative influence of language diversity in self-efficacy, given the many negative impacts of language diversity in teams (García and Cañado, 2005; Harzing et al., 2011; Henderson, 2005;

Tenzer and Pudelko, 2015) and the regulation characteristic of emotions as a source in self-efficacy (Bandura, 1977).

Although this first and critical result is not in line with most of the collected works, there are recent developments in literature refuting these negative impacts of language in team dynamics (Cohen and Henderson, 2017). These authors state that language must be regarded as a resource in teams, rather than a barrier. They view language competences as a spectrum between languages, i.e. the language competences are not independent from language to language. This knowledge spectrum may be a factor partially explaining this result. Overall, language diversity does not necessarily affect self-efficacy of team members.

Also, the language composition of each multicultural team may account for the impact of language diversity on self-efficacy. According to García and Cañado (2005), the power position of a member is increased, when that member is fluent in the vehicular language. However, this does not count with all the possible different group arrangements. For instance, there may be groups where no member is fluent in the vehicular language, despite the diversity of native languages in those groups being high, while other groups may be not too languageally diverse, but they may suffer from the reported phenomena in group dynamics, such as code-switching. The different language arrangements in teams and its impacts may represent an important aspect to be studied in further language and management studies.

Unlike language diversity, fluency seems to impact self-efficacy, which is a confirming result of the literature. It suggests that the source of conflicts may happen due to the lack of fluency of team members, rather than to the language diversity itself. This connection had been indirectly shown by Haley et al. (2015), who advocated that people lacking fluency in the vehicular language sometimes demonstrated higher levels of anxiety, consequently showing lower degrees of self-efficacy. According to Tenzer and Pudelko (2017), the anxiety comes from the difficulty perceived by these members to express their thoughts and knowledge in the vehicular language.

In order to enlarge the understanding about the impact of fluency on self-efficacy, a third model was designed and tested. The impact of fluency in the vehicular language and self-efficacy became stronger with the moderator effect of language diversity. This means that the fluency in the vehicular language becomes more determinant in a member's self-efficacy levels, as language diversity increases. This is much related to conclusions taken by García and Cañado (2005). Taking an English speaker as an example, his/her power may be similar to his

colleagues' power, if the team is only composed by English speakers. However his/her power may increase in multicultural teams, whose vehicular language is English. An increase in power may result in an increase in the perceived self-efficacy: a proposition that these authors suggest as a topic worth of further studying.

Lastly, the moderator effects of cultural intelligence and extraversion were also tested, showing positive and more determinant results than those of language diversity. This means that the impact of fluency in the vehicular language on self-efficacy is higher when participants demonstrate higher levels of cultural intelligence and extraversion.

These results are in tune with Templer et al. (2016), Harrison et al. (1996) and Moon (2013), who had all studied and proved the existence of positive relationships between cultural intelligence and self-efficacy. Also, Esfandagheh et al. (2012) showed positive connections between extraversion and self-efficacy, based on the communication abilities proper of extroverts, which let them express themselves better, strengthening their self-efficacy levels. Another justification for these results come from Ang et al. (2007), who commented on the motivational dimension of cultural intelligence, which can be an explaining dimension of the motivation for language learning. On the other side, extraverts are better at communicating (McCrae and Costa, 1991), becoming fluent in the vehicular language quicker, or at least apparently. Consequently, the positive correlations and the existence of these moderator effects are a reinforcement of the indirect connections found in the literature.

## **Limitations and further research**

Language related limitations are, by far, the biggest ones in this work. Firstly, this work analyzed language diversity through a numerical lens, putting the relationship between languages aside. The choice of the numerical option was greatly due to statistical constraints. Future research may sum up the relation between languages into a number, reflecting the lexical and phonetic distances between languages in each group (Gooskens, 2007). However, this number must be conjugated with the number of languages in each groups, as well as with the language structure of each group, i.e. the number of people speaking each language in a group. This may require wider samples.

Secondly, regional differences in languages were not taken into account, meaning the lack of consideration of accents and dialects. This is an important limitation, as monolanguage teams

may also suffer from the impacts in team dynamics indicated earlier, just as multicultural teams do at a bigger scale.

Thirdly, there is a general essentialist view on languages skills, which are regarded as language-specific, instead of as language-general skills. Other than the vehicular language, specific languages may be spoken between some members of the group, which can also affect the team's communication process. However, for the same statistical constraints mentioned above, this metacognitive component of language knowledge is not considered in this work. Future research may include this, by interconnecting the language portfolios of members. This suggestion leads us to the fourth point.

This work was done through the individual lens, with factors, such as fluency, cultural knowledge and extraversion. Nevertheless, the impact of language diversity may be susceptible to have bigger impacts at the group level (García and Cañado, 2005). Further research may follow the analysis of the impacts of language diversity in group dynamics.

Also, the survey was only applied to academic contexts. Different results may come up, if the tested models are applied in other contexts, such as those from the professional world. However, those works must take a deeper look to other aspects, such as hierarchies.

Finally, a sixth limitation regards the survey that only recorded past academic experiences of respondents, which are kept, memorized and interpreted by them. The interpretation and memories of those experiences may not correspond to what participants necessarily lived. Therefore, a longitudinal study may be crucial in analyzing impacts of other variables in team dynamics together with language diversity, such as time.

## **Conclusions**

Language aspects had been overlooked in management literature (García and Cañado, 2005). Only in the past two decades a number of scientists started devoting their time to the study of language implications in the organizational context. However, this regard of literature still confers a negative vision of those language implications, mainly in team dynamics. This negative vision is considered as a result of the essentialist way people and researchers view language aspects, such as fluency (Cohen and Henderson, 2017).

Therefore, this work aimed at verifying whether that literature's negative outlook was factual, by analysing the impacts of language diversity in self-efficacy of team members. Self-efficacy

is believed to predict job performance and, to a lesser degree, job satisfaction, two factors of relevance to people management (Judge and Bono, 2001; Judge et al., 1998; Judge et al., 2007; Stajkovic and Luthans, 1998). The results clearly show the lack of influence of language diversity on self-efficacy. This way, an important gap was covered in literature, as no other paper was found to directly correlate language diversity and self-efficacy.

The further hypothesis and respective models showed a significant positive relationship between fluency in the vehicular language and self-efficacy. This relationship is positively moderated by language diversity, suggesting the higher importance of fluency in diversity contexts, which confirms the propositions of García and Cañado (2005).

Also, the connection between fluency in the vehicular language and self-efficacy was positively moderated by the cultural intelligence and extraversion levels of team members. These factors were found in literature to have connections with people's self-efficacy levels, and this work aimed and managed to confirm their moderation effect in the mentioned relationship, mainly due to the motivational, cognitive and behavioral dimensions of cultural intelligence, and to the communication characteristic proper of extroverts.

Despite this work's contribution to literature, confirming the lack of impacts of language diversity alone in self-efficacy, the moderator effect of language diversity in the relationship between fluency and self-efficacy needs further research, as it is subject to a considerable number of limitations. Those limitations are related the statistical difficulty to interpret a number of language aspects. These aspects cover other possible estimations of language diversity, such as coefficients indicating the relativeness between language (Gooskens, 2007), but also regional differences in languages and the metacognitive dimension of language knowledge, which should give more complexity to language-related variables in further studies.

Finally, this work intends to foster a deeper and more critical insight of people management researchers to language aspects. As mentioned throughout the whole work, especially in the limitations presentation, language aspects are rich, and bring important analysis dimensions to people management research. This not only covers group dynamics phenomena, but also other corporate world scopes, such as recruitment and selection of professionals, or even training of multicultural team members, as to improve cultural and communication competences.

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