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## Cultural Intelligence (CQ) and Cultural Exposure Through Mobility Programs: An Exploratory Study

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### Abstract

As a result of globalisation, a significant proportion of companies operate across borders and in many cases, work communities are also organised from workers with diverse cultural backgrounds. Due to the intensive flow of services, goods and labour, and cultural differences, conflicts can arise, and these tensions can negatively affect people and organisations' well-being and performance. Nowadays, cultural knowledge and intercultural competencies are more appreciated and highly requested by most employers.

The younger generations (Generation Z and Millennials) were born into cultural diversity and have broad mobility possibilities to deepen their intercultural competencies, but the older generations in Hungary had more limited mobility opportunities. Cultural intelligence (CQ), which is the ability to adapt to different intercultural interactions effectively, can be developed effortlessly by spending extended periods abroad. High CQ results in better interpersonal relationships and work performance in culturally diverse environments. Cultural intelligence is a widely researched field within the managerial studies, but most studies focus on international students, young business students and sojourners. Thus, our primary goal was to explore not just the adolescents and young professionals, but the middle-aged and seniors as well.

This quantitative study aimed to explore Hungarian generations' cultural intelligence and find possible connections between cultural intelligence and overseas exposure/mobility program participation. To answer our research questions, we analysed the total and dimensional CQ scores of 329 Hungarian respondents and compared the results based on participation in different mobility programs, length and frequency of cultural exposure.

**Keywords:** cultural competences, cultural exposure, cultural intelligence, CQ, Erasmus, mobility, generations

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## 1. Introduction

Managing cross-border work teams, working effectively in a multicultural environment, or adjusting to a foreign culture while delivering the same work performance is a challenging life situation. Due to the effects of globalisation, more and more international companies employ culturally diverse teams, and due to technological advancements, these groups often no longer even work physically in the same space, making it even more challenging to cooperate (Distefano and Maznevski, 2000; Han and Beyerlein, 2016). Different habits, value systems, or even rules for expressing emotions can make cooperation significantly more difficult and cause many conflicts (Ayoko and Konrad, 2012). However, cultural differences between people can also lead to innovation and creativity based on broad perspectives and problem-solving solutions (Ting-Toomey, 1999). For this reason, it is essential for companies seeking leadership in the global market to pay significant attention to the intercultural skills of prospective leaders in the selection process (Kanter, 1995; Morley et al., 2010). As Gupta defined "cultural competency and cultural adaptability are foundational skills vital to the success of anyone working in a cross-cultural environment, domestically or internationally... (and) all leaders today must possess these skills due to the tremendous diversity found in many working environments" (Gupta, 2019 p.147, cited by Armstrong, 2020). These competencies help leaders function effectively across cultures, collaborate and communicate with people with different cultural backgrounds, and most importantly, think and act appropriately (Leung, Ang and Tan, 2014). As a result, the necessity of Generation Z and Millennials' intercultural skills is unquestionable. Understanding culture and global perspectives are the critical element of their success (Reiche et al., 2017).

Educational institutions encourage students to participate in mobility programs in order to prepare them to culturally complex working environments and develop intercultural competences (Niehaus and Wegener, 2018). These programs do not cause "brain drain" within Europe (Gérard and Senna, 2017; Holicza, 2018); they typically focus on shorter periods (2-6 months) and after the program, the participants come back to their home county. These individuals are called sojourners, who live temporarily abroad and try to achieve satisfactory goals in their academic life or career (Cox, 1988). Mobility programs can be offered by educational institutions (e.g. Erasmus+ semester abroad or internships), volunteering organisations, cultural exchange program sponsors (e.g. US J-1 visa programs such as Camp Counselor, Work and Travel, Traineeship), private cultural exchange agencies (e.g. Work Experience programs or short-term language courses combined with employment) and language schools as well. Based on previous research, these programs have a positive impact on cultural sensitivity and intercultural competences (Medina-Lopez-Portillo, 2004) and willingness to interact with people with a different cultural background (Gaia, 2015); offer "life-changing" transformational experiences (Roman et al., 2018; Nguyen Luu, 2019) and significant development of intercultural effectiveness (Armstrong, 2020). Extended periods abroad (longer than a holiday) help to develop Cultural Intelligence (CQ) as well, which is the ability to successfully adapt to different cultural interactions (Earley and Ang, 2003; Ang and Van Dyne, 2008; Crown, 2008). Cultural exposures can moderate the effect of CQ on cultural adjustment (Lee and Sukoco, 2010). Previous international work experiences also impact the CQ (Moon, Choi and Jung, 2012; Lee and Kartika, 2014), and cross-cultural adaptability (Huff, Song and Gresch, 2014) positively. Cultural intelligence is a widely researched field in managerial studies and intercultural psychology. Most of the studies in Hungary focus on international students (Nguyen Luu, 2019), university students (Balogh, 2011; Balogh, Gaál

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and Szabó, 2011) and university communities, included senior academic staff (Kővári, Pásztor and Raffay, 2021).

Nowadays, students and young professionals can choose from many mobility opportunities to gain work experience, study abroad or strengthen their foreign language skills. Despite this, even twenty years ago, mobility opportunities were limited, which affected the older generation's cultural exposure. Are the representatives of X Generation and Baby boomers less culturally competent due to their historical background? During the era of socialism, Hungarians have not been allowed to travel easily. Studying, working or living abroad was a privilege. In comparison, nowadays, due to the European Union, every individual has the right to work, move to and live in another country. Do free movement, and the increase of cultural exchange and mobility programs help the young generations to expand their cultural competences? This study aims to explore the cultural intelligence of each generation and prove that mobility may help individuals become more culturally competent.

## **2. The world we live in - through the eyes of individual generations**

The growing number of people born after World War II created the Baby boomer generation born between 1946 and 1964. This age group is accustomed to being surrounded by stable conditions in society and in their workplace, so they are the ones who, at the turn of the century, found it hardest to find their place in the new and increasingly digitalised world. This generation felt these significant changes as a loss of security and predictability. With the emergence of a more global world economy (and the expansion of countries' borders), the necessity to learn and to continually regenerate has gained ground, so this age group experienced the greatest disappointment when they had to face recent changes in the labour market by being quickly replaced by others (Wallace, 2006; Tari, 2010).

People born between 1965 and 1975 were named the Generation X. They were born into an intensely competitive world and discovered, through their parents' example, that job acquiring and retaining is a challenging process in which only the development of their abilities and values can provide relative security (Wallace, 2006; Levickaité, 2010; Tari, 2010). This generation had many new opportunities, but for this reason, has also embraced constant anxiety regarding their performance.

Generation Y or Millennials, are born between 1980 and 1995 into a digitalised world (Cheung, Harker and Harker, 2008). Its members feel at ease with computing and moving freely in the internet world. They are no longer afraid of increased workplace competition, but they have to compete for jobs, and they see it as a venue for their own goals. Workplace security, as known from their grandparents' and parents' stories, does not mean much to them, and they choose opportunities instead of the desire for stability (Tari, 2010; Levickaité, 2010).

Generation Z, also known as Zoomers (born between 1995 and 2010), is the youngest on the labour market. It is the first age cohort with widespread access to smartphones from an early age. They are called digital natives, but it does not mean that they are digitally literate as well. Compared to the previous generation, in some countries, Generation Z seems to be well-behaved, risk-averse and better in gratification delaying, but more prone to mental health problems (Protczko, 2020; Chandler-Wilde, 2020).

The differences between the generations are significant, and technological progress plays a major role. The older generation's experiences are already unimaginable for the younger

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generations (e.g., the drastic change in dating and forming relationships). This phenomenon is called the generation gap in the literature, which faithfully reflects the differences between generations (Ságvári, 2008). The Y and Z generations no longer have the "old world" value system; the "anything you want, everything is available to you" is the new norm. At the same time, these new world's participants are experiencing a paralysing fear.

### **3. Cultural intelligence**

Nowadays, preparing the younger generation for the international labour market, working effectively in a multicultural environment, and often digitally connected (virtual) workgroups, the development of students' cultural skills has become essential. While emotional intelligence (EQ) helps us to recognise, understand, and influence our own and others' emotions, cultural intelligence (CQ) goes one step further by placing every situation in a cultural context and thus aiding interpretation (Pásztor, 2020). Our culture, into which we were born, becomes a part of our lives almost "unnoticed" through the process of socialisation. This process is called enculturation (Berry, Kim and Boski, 1988). We do not question our habits, and our value systems (for example, what is good-bad, moral-immoral, beautiful-ugly) which automatically shape our point of view according to Hofstede, who hypothesised that culture could be perceived as the primary "programming" of the mind. Our cultural patterns can be seen as a kind of scheme of action, as they assign a specific emotional charge and action to our responses to certain environmental stimuli. When we have to thrive effectively in a culture different from ours, our cultural differences become accentuated and cause innumerable difficulties in both communication and the process of integration (Hofstede, Hofstede and Minkov, 2005). Learning, accepting, and integrating another culture is called acculturation. Several indicators have measured the success of this process, one of the best known is Cultural Intelligence (CQ), which first appeared in the literature on intercultural psychology, management and communication. The essence of becoming culturally intelligent is for the individual to be prepared and flexible to learn about cultures and gain knowledge from ongoing interactions (Thomas and Inkson, 2003). In contrast, simple theoretical, cultural knowledge can lead to generalisation and stereotyping. The transformation of thinking is a holistic approach because it includes knowledge and abilities, intention, and behaviour. Accordingly, CQ is also an individual's ability to effectively recognise, understand, and interpret different cultural situations (Karma and Vedina, 2009). Based on Early and Ang (2003), CQ is composed of four dimensions.

The Motivation dimension shows an individual's level of interest and confidence in how well they think they would perform in intercultural situations. Motivational CQ shows the ability to direct attention and energy to learn/experience something new from cultural differences and function appropriately in intercultural situations. Those with a high motivational CQ have an intrinsic, natural interest in other cultures, accompanied by intercultural self-confidence (Bandura, 2002). These individuals are not only interested but also confident that they will function effectively in the new culture.

The Cognitive dimension indicates the extent to which an individual knows cultural differences. Cognitive CQ shows the level of knowledge we have about the norms, values, legal and social systems, practices of cultures other than our own, either through learning or personal cultural experiences. Those with high cognitive CQ find it easier to understand any cultures' similarities and differences (Brislin, Worthley and MacNab, 2006). Its subdimensions: general cultural

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knowledge and specific cultural knowledge (Rockstuhl et al., 2011). General cultural knowledge covers a macro-level body of knowledge that promotes an understanding of how cultures work and the existence of cultural norms. Specific knowledge helps the individual to identify the foundations of intercultural differences (Hofstede, 2001).

The Metacognitive dimension shows the level of awareness and planning ability. Metacognitive CQ helps to apply existing cultural knowledge. It includes planning, control, and the ability to overwrite our cultural knowledge when we interact with a new cultural medium. Individuals with high motivational CQs consciously pay attention to others' cultural preferences before and during interactions and seek to adjust their way of thinking accordingly (Brislin, Worthley and MacNab, 2006).

The Behavioral dimension captures practical adaptability to intercultural situations. Individuals with high behavioural CQ can adapt their verbal communication (speech tempo, intonation) to the situation and can apply nonverbal signals appropriately. Behavioural CQ shows how well an individual can communicate with an appropriate set of verbal and nonverbal tools in intercultural situations. Accordingly, cultural knowledge and the intention to apply it alone are not enough; the behavioural dimension must also be associated with it in order to succeed. Behaviour is successful if we can respond to culture-specific situations with appropriate verbal and nonverbal tools. Those with a high behavioural CQ can adapt their verbal communication to the situation (change the tempo of speech, intonation) and use their nonverbal cues appropriately (use gestures and facial expressions appropriate to the situation and culture). Behavioural CQ is one of the most critical elements, as verbal and non-verbal behaviour is one of the best observed in social collaboration (Ang and Van Dyne, 2008).

Motivation is the basis that leads to the acquisition of knowledge and then its organisation, and later manifested as appropriate behaviour in intercultural situations. The cognitive dimension is knowledge itself, the metacognitive dimension is the strategic use (planning) of this knowledge, and then the behaviour dimension is the action itself. CQ dimensions do not necessarily correlate with each other, but through their combination, we can get an excellent picture of the individual's level of cultural intelligence, which is otherwise excellent as a unidimensional construct. Overall, the development of each dimension can contribute to an increase in an individual's CQ level. As one of the essential elements of cultural intelligence, motivation impacts employment, workplace adjustment and job performance (Chen et al., 2010). CQ also has an impact on the integration opportunities of foreign workers into the host society. The cultural intelligence of people living in the host country shows how they can accept workers from foreign countries (Dagher, 2010).

CQ levels are higher in those who have been exposed to more foreign experience. It is most significantly developed by more ongoing foreign activities (such as studying or working), while holidays or shorter trips abroad do not significantly impact it. Researchers have observed that staying abroad increases cultural intelligence (CQ), but the number of trips abroad is more important than the length of stay (Takeuchi, Tesluk and Marinova, 2006; Kim, Kirkman and Chen, 2008). Crowne (2008) emphasised that superficial knowledge can be easily expanded by reading or travelling, but a deeper understanding of cultures requires a closer examination of values and norms. He found that CQ is higher in those who have travelled abroad and can be improved primarily by studying and working abroad, i.e., vacation or shorter travel, for example, does not have such a strong effect on cultural intelligence. Cultural intelligence can

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be related to global leadership skills and how well a leader can work effectively and efficiently in a multicultural environment (Alon and Higgins, 2005). The interaction of CQ and emotional intelligence (EQ) affects the so-called development of a global mindset and plays a role in developing a sense of global citizenship (Lovvron and Chen, 2011). Several studies have found that multicultural experiences significantly influence certain aspects of cultural intelligence (Tay, Westman and Chia, 2008; Lee and Sukoco, 2007). Stereotyping, leadership problems, and conflicts perceived in diverse cultural groups can be traced back to low cultural intelligence levels (Alon and Higgins, 2005); hence, CQ development is also a priority from a management perspective.

Regarding CQ, the following research questions have been formulated:

1. What is the level of cultural intelligence in Hungary?
2. Is there any difference between the cultural intelligence of generations?
3. Is there any difference between the cultural intelligence of males and females?

#### **4. International mobility and the "Erasmus phenomenon"**

For members of the Y and Z generation, crossing a border is already a part of everyday life, it does not have the same sensation as for the generations before them, since they have virtualised the world several times, and global information is continuously streaming from the internet. They use foreign languages confidently and are not afraid of cultural differences, as through the media (including social media) they have access to others' everyday lives and receive information about other countries. Young people are more courageous, tolerant and understand the specialities resulting from the internet's penetration (Yi et al., 2015). They need new experiences and novelty, and their experiences are advertised on social media platforms (Pendergast, 2010). Their common feature is to enjoy life, escape from constraints, the "boring daily robot" and more and more they want to experience the world. Because their purpose is cognition, therefore, their need for mobility is essential. A visited destination becomes one of the personality building symbols, as they can "check it off from their bucket list" and it can influence their social judgment as well. Travel is also a community experience for them as they can easily handle relationships abroad through technology development and community media usage.

Europe is the most diverse continent of the world if we take cultural, economic or geographical differences (Lazányi, Holicza and Baimakova, 2017). However, with their language skills and easy-to-understand information, young people are more likely to visit the EU Member States to extend their horizons. The Erasmus program launched in 1987 has given an enormous impetus to the target group's mobility, with more than 3 million students in higher education being awarded scholarships to support travel and learning abroad. The purpose of the Erasmus program is to nurture the intercultural skills of participating young people (understanding different cultures) and thereby strengthen the sense of community involvement in the EU. The program has been structured to encourage participants to return to their home country. It does not cause "brain-drain" and does not animate well-trained young workers to migrate within the continent (Feyen and Krzaklewska, 2014).

Through the Erasmus program, the feeling of travel and freedom, which is one of the Y generation's basic needs, has become a combination of studies and socialising (Holicza and Fehér-Polgár, 2017). For the majority, this is the longest time spent abroad when they leave the parental home or their usual comfort zone (Málovics, Prónay and Kincsesné, 2015). During the

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semester, they work at their own pace, adapt to the host environment and culture, develop their lifestyle, cultural and communication skills, perform job tasks or subjects and projects in English or the host country's language, gain international experience, build friendships and useful links between nations. (EC, 2014; Van Mol, 2014). Erasmus + regulations were adopted at the end of 2013 and set a budget of almost € 17.7 billion. This new program has already combined existing European education, training, culture and sports programs (Erasmus Mundus, Tempus, Alpha, Edulink). Within the Erasmus + program framework, more than 4 million Europeans can participate in mobility opportunities through transnational partnerships (education, training, student organisations) that connect the worlds of education and internships (EC, 2016). The EU's budget for 2021 through 2027 is € 26 billion (EC, 2020).

In terms of internships and work experience, the Erasmus + program enhances the value of young people in the labour market, while allowing them to gain work experience in an international environment, get to know another culture, develop their language skills, and acquire new skills. The preparation itself is an integral part of the process of cultural and linguistic preparation in practice (via Erasmus + Online Linguistic Support) (EC, 2016). According to Parey and Waldinger (2008), young people in the Erasmus program increase subsequent employment abroad by 15–20%. This result shows a strong interaction between international labour market mobility and the student mobility that preceded it. Qualitative evidence suggests that, in addition to career plans, so-called soft factors (such as an individual's attractiveness to foreign cultures) are both important drivers of employment abroad and are likely to have the same motivations behind study abroad plans.

Other mobility programs, such as the American J-1 Cultural Exchange Programs allows full-time students to gain professional experience at an American company (typically in the hospitality sector) during the summer break (Bowman and Bair, 2017). This program has strict entry requirements, and just a few agencies have the legal background in Hungary to recruit students to the program. Adolescents and young adults can spend a semester (or more) outside the EU (with Campus Mundi scholarship or another grant), can apply to language schools around the world (which comes with strict visa restrictions as well), or sign up for volunteering. Erasmus+ semesters help students study at another European university, while Erasmus+ internship program offers 2-12 months long professional experience placements (Holicza and Pásztor, 2016). Within the EU, due to the right to free movement and employment, thousands choose to work abroad and apply for seasonal or permanent positions.

Regarding the mobility programs, the following research questions have been formulated:

1. Is there any connection between CQ and the cumulative time spent abroad?
2. Is there any connection between CQ and participation in mobility programs?
3. Is there any connection between the CQ and the frequency of participating in mobility programs?

## **5. Methodology**

To reach the most comprehensive age range within the shortest possible time, an online questionnaire in Hungarian was shared on Facebook. This nonprobability sampling technique is called virtual snowball sampling (Baltar and Brunet, 2012). Due to the lack of financial means and the research's exploratory focus, the online survey was not promoted as a Facebook Ad.

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The questionnaire contained 95 items grouped into four main blocks. The respondents' age, gender, nationality, educational and employment background were asked in details in *the first, demographic block*, which contained ten questions. The *second block* measured the level of cultural intelligence with the Cultural Intelligence Scale (CQS). The scale contained 20 items (Ang et al., 2007) and was adapted into Hungarian in 2011 (Balogh, 2011). Respondents had to decide regarding each statement whether it was applicable for them, or not. A seven-point agreement scale was used, where 1 = totally disagree, 7 = totally agree. The internal consistency (Cronbach's alfa) of CQS was .909. The behavioural dimension ( $\alpha = .879$ ) contained five statements (e.g., "I change my verbal behaviour (e.g., accent, tone) when a cross-cultural interaction requires it."), the cognitive dimension ( $\alpha = .879$ ) contained six items (e.g., "I know the rules for expressing nonverbal behaviours in other cultures."). Metacognitive dimensions ( $\alpha = .816$ ) contained four statements (e.g., "I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds."). The motivation dimension ( $\alpha = .853$ ) contained five items (e.g., "I am sure I can deal with the stresses of adjusting to a culture that is new to me."). The *third block* included fifteen questions regarding the respondents' cultural exposures and their frequencies. Seven dichotomous questions examined the type of mobility programs (Erasmus+ semester, Erasmus+ internship, J-1 American Cultural Exchange, Volunteering, Summer job, Language school, Non-EU semester). Respondents were asked about participation (e.g. "Have you ever participated in Erasmus+ Internship program?", "Have you ever studied at a language school abroad?"). They were asked how long they have been abroad altogether in their lives and the purpose of these travels (holiday, business, studies, employment). The *fourth block* contained 50 items based on Malota and Berács's research on ethnocentrism (2007). This part examined the following latent factors: patriotism, superiority, nationalism, cosmopolitan identity, national identity, alienation and additional variables about cultural attitudes. Due to the space limitations, the results related to this part will not be analysed in this paper.

423 respondents started to fill in the questionnaire, but 15% ( $n = 64$ ) dropped out before its end because they did not answer the fourth block's questions. The total number of filled in questionnaires was 359 (84.8%) before data cleaning. From these 359 answers, careless responses (2.5%,  $n = 9$ ) were excluded due to the answers' pattern, which painted straight vertical lines on the seven-point Likert scale of CQS. It is called "straight-lining" (Meade and Craig, 2012; Schonlau and Toepoel, 2015). These respondents chose the same score for each item; in this case, only 1 or 7. Thus, their CQ score's standard deviation was zero. Individuals younger than 14 years of age were also excluded due to the lack of parental consent (5.8%,  $n = 21$ ). After cleaning the database, which resulted in the removal of 21 answers (8.3%), the final (not representative) sample contained 329 persons.

Different statistical tests and methods have been applied (correlation and analysis of variance) to answer the research questions with SPSS 26 software. Due to the need for robust techniques, ROPStat software also helped the analysis (Varga, Torma and Bergman, 2015).

## 6. Results

The average age of the 329 Hungarian respondents was 49.22 ( $SD = 18.770$ ,  $min = 14$ ,  $max = 86$ ). The gender distribution was quite unbalanced, males represent 26.1% of the sample ( $n = 86$ ,  $M_{age} = 51.41$ ,  $SD = 18.806$ ), while females 73.9% ( $n = 243$ ,  $M_{age} = 48.31$ ,  $SD = 18.819$ ). 14.3% belongs to Generation Z ( $n = 47$ ,  $M_{age} = 20.28$ ,  $SD = 2.998$ ), 25.2% Millennials ( $n = 83$ ,

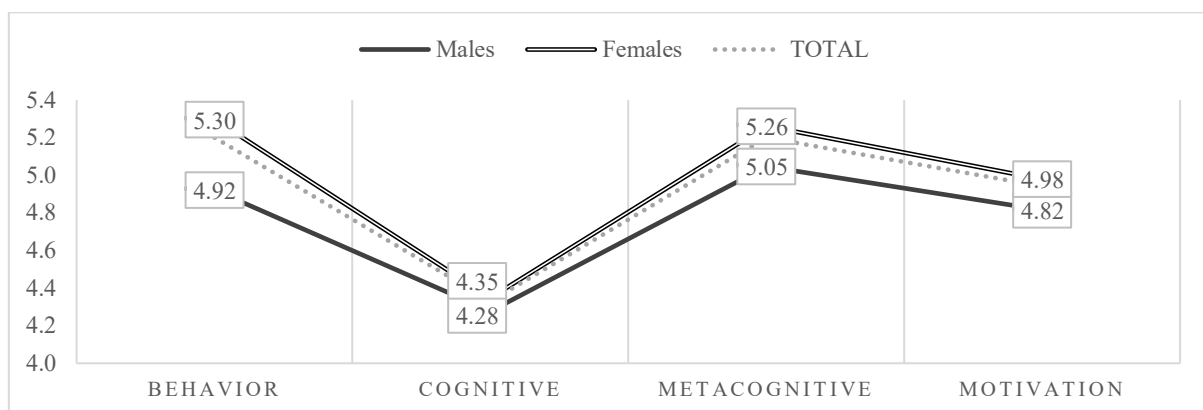


$M_{age} = 32.69$ ,  $SD = 4.381$ ), 22.2% Generation X ( $n = 73$ ,  $M_{age} = 53.22$ ,  $SD = 5.633$ ), 38.3% Baby boomers ( $n = 126$ ,  $M_{age} = 68.33$ ,  $SD = 4.803$ ). In regard to the social status of the respondents, 37.4% reached the retirement age, 12.2% had part-time or full-time student status, 74.2% had part-time or full-time job. Every respondent lives in Hungary, 37.4% in Budapest ( $n = 123$ ), 42.6% in a county seat ( $n = 140$ ), 16.4% in town ( $n = 54$ ) and 3.6% in a small village ( $n = 12$ ).

## 6.1 General CQ results

The CQ total score can range between 20 and 140. The respondents' average CQ score was 97.47 ( $SD = 20.004$ ,  $min = 39$ ,  $max = 140$ ). The four dimensions of CQ are shown in Figure 1. The respondents' weakest CQ dimension was the cognitive dimension ( $M = 4.33$ ,  $SD = 1.270$ ), which indicates that the respondents' cultural knowledge causes the most uncertainty, but this dimension can be developed easily. The second strongest dimension was motivation ( $M = 4.94$ ,  $SD = 1.224$ ), which shows a good willingness to get to know other people with different cultural backgrounds and be open about living in other cultures. The metacognitive and the behaviour dimensions were similar ( $M = 5.20$ ,  $SD_{behavior} = 1.44$ ,  $SD_{metacognitive} = 1.224$ ). They represented the respondents' strongest CQ dimensions, which indicates that they can modify their behaviour in intercultural situations most of the time and can utilise the cultural knowledge to succeed in intercultural interactions.

FIGURE 1. STRENGTH OF CQ DIMENSIONS



Note. The mean score of each dimension ranged from 1 to 7

Source. Own data

In order to test the CQ score differences between males and females, an independent t-test was conducted. This test results indicate that males ( $M_{CQ} = 94.53$ ,  $SD = 18.847$ ) and females ( $M_{CQ} = 98.51$ ,  $SD = 20.33$ ) do not differ significantly,  $t(326) = -1.586$ ,  $p = .114$ . Regarding the CQ dimensions, Welch t-test was conducted. This test was statistically significant at the behavioural dimension,  $W(140, 8) = -2.010$ ,  $p = .046$ ,  $\omega^2 = .013$ , which means females have higher behaviour CQ scores than males. The effect size for this analysis was small (Cohen, 1988).

## 6.2 Generational differences in CQ

Table 1. displays the average age of each generation, their total and dimensional CQ scores. No significant differences have been found regarding the total CQ scores of the generations,  $W(3, 151.4) = 2.585$ ,  $p = .0553$ , except the behaviour dimension,  $W(3, 150.4) = 2.714$ ,  $p = .0470$ ,  $\omega^2 = .011$ , where generation Z had a significantly higher score than Baby boomers ( $p < .05$ ).

No significant correlation has been found between age and CQ; thus, correlations were checked by conditional grouping as well. No significant correlations have been found regarding the age and CQ level of Millennials, Generation X and Baby boomers. Within Generation Z (minage = 14, maxage = 25) the older the individual, the higher their total CQ score ( $r = .368, p < .05$ ) the metacognition dimension score ( $r = .331, p < .05$ ) and motivational dimension score too ( $r = .424, p < .01$ ).

TABLE 1. CULTURAL INTELLIGENCE CHARACTERISTICS OF EACH GENERATION

Generations	<i>n</i>	Age	CQ	Behaviour	Cognitive	Metacognitive	Motivation
Generation Z	47	20.28	103.85	28.26	27.59*	21.54*	26.49
Millennials	83	32.69	97.41*	25.39*	26.69	20.67	24.66*
Generation X	73	53.22	97.04	26.38	25.42	20.62	24.62
Baby boomers	126	68.33	95.48	25.33	25.25	20.76	24.14

Note. \* indicates significant ( $p < .05$ ) differences between males and females. Total CQ score range: 20-140, Behaviour CQ: 5-35, Cognitive CQ: 6-42, Metacognitive CQ: 4-28, Motivation CQ: 5-35

Source: own calculations

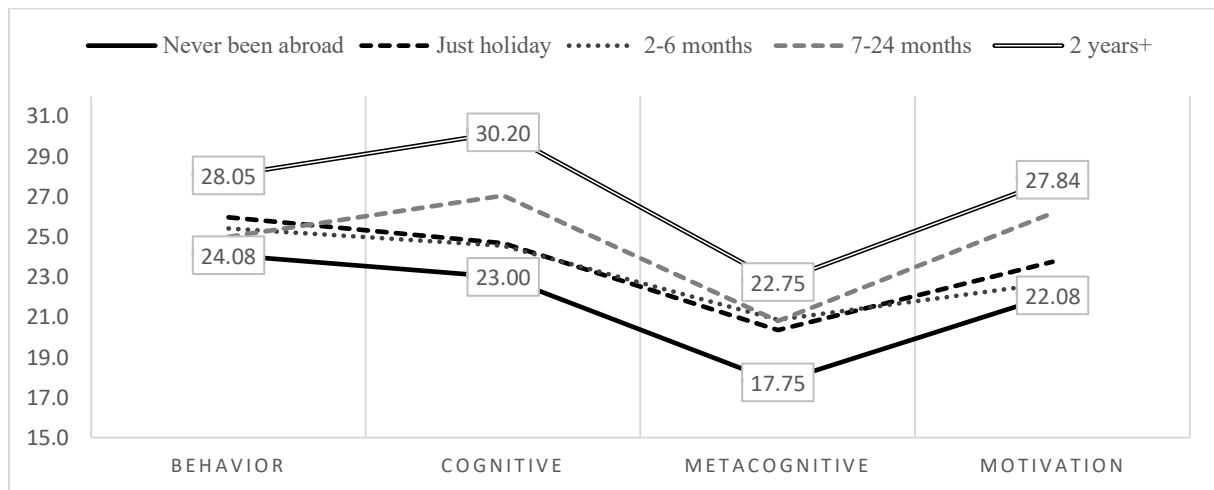
In order to identify possible significant total CQ score differences between males and females of each generation, Welch t-test was conducted. No significant differences were found, except in case of the Millennials,  $W(34, 6) = -2.055, p = .0475, \omega^2 = .037$ . It indicates that 25-40 years old females have higher total CQ scores than males at the same age. Millennial females had significantly higher behavioural and motivational dimension scores too ( $p < .05$ ), than the males. The size effect was medium ( $\omega^2_{behaviour} = .042, \omega^2_{motivation} = .065$ ). In Generation Z, significant differences have been found as well; 14-25 year old females had higher cognitive and metacognitive scores ( $p < .05$ ) than males. The effect size was large in case of the metacognitive dimension ( $\omega^2 = .114$ ) and medium in the case of cognitive dimension ( $\omega^2 = .067$ ).

### 6.3. Connection between cultural intelligence and overseas exposure

Previous findings prove that individuals who have been exposed to more foreign experiences have higher CQ (Crowne, 2008). Based on our sample ( $n = 328$ ), the amount of foreign experience significantly correlated with CQ ( $r = .252, p < .001$ ). At the dimensional level, a similar pattern has been found, the more time spent abroad, the higher the score of each dimension ( $r_{cognitive} = .258, p < .001, r_{metacognitive} = .179, p < .001, r_{motivational} = .251, p < .001$ ) except for the behaviour dimension which did not correlate to overseas exposure ( $r = .073, p = .187$ ).

Based on the summarized time spent abroad, significant differences have been found in the respondents' total CQ score,  $W(5,67.3) = 5.718, p < .001, \omega^2 = .067$ . Respondents who spent more than two years abroad ( $n = 55, M_{CQ} = 108.84, SD = 18.43$ ) have significantly higher total CQ than those who have never been abroad ( $n = 12, M_{CQ} = 86.93, SD = 23.10, p < .01$ ), those who had just holidays ( $n = 153, M_{CQ} = 94.75, SD = 18.79, p < .01$ ) and those who spent less than 6 months abroad ( $n = 46, M_{CQ} = 93.54, SD = 17.74, p < .01$ ). The dimensional scores are displayed in Figure 2.

FIGURE 2. DIMENSIONAL CQ SCORES COMPARED BY THE INTENSITY OF OVERSEAS EXPOSURE



Source. Own data

Welch's *t*-test has been applied for the CQ dimensions as well, and there were significant differences between the dimensional CQ of the respondents, except in the *Behavioural dimension*,  $W(5, 69.2) = 2.300, p = .0542$ .

In the *Cognitive dimension*, significant differences have been found,  $W(5, 68.9) = 5.980, p < .001, \omega^2 = .067$ . Post-hoc tests show that respondents who spent more than two years abroad have significantly higher Cognitive CQ scores ( $M_{CognitiveCQ} = 30.20, SD = 6.932$ ) than anyone who spent less than six months abroad ( $p < .05$ ). There were no significant differences in the cultural knowledge of those who have never been abroad, who make international holidays or spent less than half a year abroad.

The *Metacognition dimension* shows differences regarding the scores,  $W(5, 68.2) = 2.972, p = .0174, \omega^2 = .030$ . The respondent with two years foreign experience has significantly higher Metacognition CQ scores ( $M_{MetacognitiveCQ} = 22.75, SD = 4.419$ ) than the group who have never been abroad ( $M_{MetacognitiveCQ} = 17.75, SD = 5.594, p < .05$ ) and who spend only the holidays abroad ( $M_{MetacognitiveCQ} = 20.35, SD = 4.918, p < .05$ ).

Welch's *t*-test proved significant differences in the *Motivation dimension* too,  $W(5, 67.2) = 5.056, p < .001, \omega^2 = .061$ . Individuals with two or more years foreign experience have significantly higher Motivational CQ ( $M_{MotivationalCQ} = 27.84, SD = 6.330$ ) than those who spent just a holiday abroad ( $M_{MotivationalCQ} = 23.74, SD = 6.198$ ) and those who spent less than six months abroad ( $M_{MotivationalCQ} = 22.72, SD = 6.642$ ). Previous research found a significant correlation between CQ and openness to experience (Ang, Van Dyne and Kohl, 2006) and CQ is a determinant of the perceived value of a destination (Frías-Jamilena et al., 2018).

#### 6.4 Connection between mobility programs and cultural intelligence

Two independent groups have been compared regarding each mobility program (participants and non-participants). One respondent has been excluded from this analysis because her age did not fit to the maximum age limit of the Erasmus program she has chosen. The groups' results are displayed in Table 2. To compare two independent samples, researchers commonly used Student's *t*-test, which can be severely biased because of the assumptions of normality and homogeneity of variance. Welch's *t*-test provided better control of Type 1 error rates and

preferred in case of small sample sizes (Derrick, Toher and White, 2016; Delacre, Lakens and Leys, 2017); thus this test has been applied.

TABLE 2. PARTICIPANTS' AVERAGE CQ TOTAL SCORES COMPARED BY MOBILITY PROGRAMS (N = 328)

Mobility program	Participants			Non-participants			$\omega^2$
	<i>n</i>	<i>M<sub>CQ</sub></i>	<i>SD</i>	<i>n</i>	<i>M<sub>CQ</sub></i>	<i>SD</i>	
Erasmus+ semester	13	107.38*	14.93	315	97.06	20.10	.007
Erasmus+ internship	10	113.10**	13.20	318	96.97	20.00	.016
J-1 American Cultural Exchange	4	115.50*	8.89	324	97.24	20.01	.007
Volunteering	16	110.44***	8.60	312	96.8	20.20	.019
Summer job	71	103.38**	20.37	257	95.83	19.63	.021
Language school	21	109.62**	19.39	307	96.64	19.81	.022
Non-EU semester	9	113.89**	12.42	319	97.00	19.99	.016

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$  (significant differences between participants and non-participants)

Source: own calculations

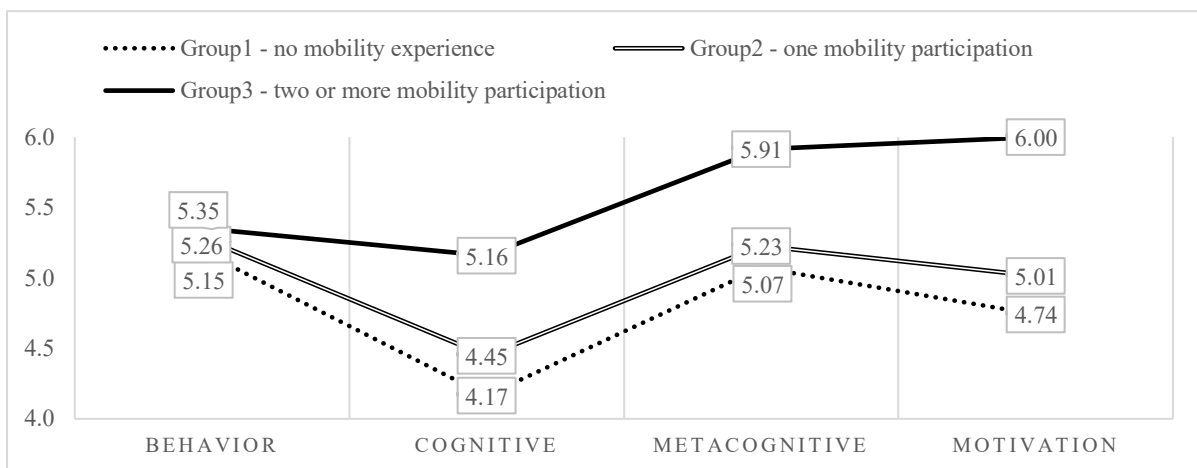
Omega squared estimates which proportion of variance in the CQ total score is accounted for by an effect in the entire population, and it is a less biased estimator than eta squared (Winkler and Hays, 1975). The effect size of each analysis ( $\omega^2$  between .007 and .022) was not found to be exceeded for medium effect. Thus, the  $\omega^2$  is small but makes the different mobility programs' size effects comparable.

Participants who studied a minimum of 2 months long at a *language school* abroad had higher CQ ( $M_{CQ} = 109.62$ ,  $SD = 19.39$ ) than that respondents who did not ( $M_{CQ} = 96.64$ ,  $SD = 19.81$ ),  $W(22;9) = -2.965$ ,  $p = .007$ ,  $\omega^2 = .022$ . These language courses have culturally diverse students who have to work effectively together on different team assignments. Based on the literature findings, teachers regularly create culturally diverse groups and avoid mono-cultural grouping (Rienties, Alcott and Jindal-Snape, 2014). In the case of *working abroad during the summer* (Work and Travel and Work Experience programs), significant differences have been found. These programs focus on professional training, and the participants work for a company during their summer break and have to work together effectively with colleagues with a culturally diverse background. The challenges of internships and summer jobs lie in the parallel requirement of quick cultural adaptation and work performance. Many companies provide onboarding for the new starters, but generally, the intern has to face most of the adversities alone due to the lack of social support from the same nationalities. Participants have higher CQ scores ( $M_{CQ} = 103.38$ ,  $SD = 20.37$ ) than non-participants ( $M_{CQ} = 95.83$ ,  $SD = 16.63$ ),  $W(108, 6) = -2.786$ ,  $p = .0063$ ,  $\omega^2 = .021$ . *Volunteering abroad* is an emerging way for Hungarians to gain cultural and work experiences abroad; the number of participants is growing each year. During these programs, volunteers work together to implement a project while cooperating with culturally diverse workgroups. Respondents with volunteering experience have significantly higher CQ scores ( $M_{CQ} = 110.44$ ,  $SD = 8.602$ ) than others ( $M_{CQ} = 96.80$ ,  $SD = 20.20$ ),  $W(24, 6) = -5.598$ ,  $p < .001$ ,  $\omega^2 = .019$ . Respondents who spent one or more *semesters outside the EU* have significantly higher CQ than non-participants,  $W(9, 2) = -3.936$ ,  $p = .0033$ ,  $\omega^2 = .016$ . Erasmus interns have higher cultural intelligence scores as well,  $W(10, 3) = -3.730$ ,  $p = .0037$ ,  $\omega^2 = .016$ . The elevated CQ is proven in case of *J-1 cultural exchange programs*,  $W(3, 4) = -3.985$ ,  $p = .0225$ ,  $\omega^2 = .007$ , and *Erasmus+ semesters* as well,  $W(13, 9) = -2.406$ ,  $p = .0306$ ,  $\omega^2 = .007$ . Based on the size effect, the two last groups had the weakest differences.

28.9% of the respondents have a mobility program experience. Three groups have been made based on the frequency of participation. *Group1* contained participants with no mobility program experiences ( $n = 234$  (71.1%),  $M_{CQ} = 94.75$ ,  $SD = 19.86$ ), *Group2* contained respondents who have been partaken in mobility programs once ( $n = 54$  (16.4%),  $M_{CQ} = 98.94$ ,  $SD = 18.86$ ) and *Group3* contained respondents who partook in mobility programs twice or more ( $n = 41$  (12.5%),  $M_{CQ} = 111.35$ ,  $SD = 16.43$ ). The total CQ score of the groups differs significantly,  $W(2, 87.025) = 16.883$ ,  $p < .001$ ,  $\omega^2 = .067$ . The respondents who were involved more than once in mobility programs have significantly higher CQ than who tried the experience just once ( $p < .05$ ).

Figure 3 displays the differences regarding the mean of each CQ dimension for these three groups. The Cognitive dimension is the weakest, followed by Motivational and Metacognitive dimensions, while the Behavioural has a higher mean in each group's case. The significant increase in each dimension between the respondents with one mobility experience and those who joined in more programs was also proved on the dimensional level (except the *Behavioural dimension*,  $W(2, 77.2) = 0.419$ ,  $p = .659$ ,  $\omega^2 = .003$ ).

FIGURE 3. CQ DIMENSIONAL SCORE COMPARISON BASED ON MOBILITY PROGRAM PARTICIPATION



Source: Own data

The *Cognitive dimension's* score differs significantly,  $W(2, 88.9) = 14.047$ ,  $p < .001$ ,  $\omega^2 = .057$ . The respondents who partook in more mobility programs (*Group3*) have 6.49 point higher Cognitive CQ than *Group1* ( $p < .01$ ), and 3.77 points higher than *Group2* ( $p < .05$ ). The *Metacognitive dimension* shows significant differences as well,  $W(2, 86.5) = 11.55$ ,  $p < .001$ ,  $\omega^2 = 0.047$ ). *Group3* is 6.01 points higher in Metacognitive CQ than *Group1* ( $p < .01$ ) and 4.06 point higher than *Group2* ( $p < .05$ ). The *Motivational dimension's* score shows the strongest differences,  $W(2, 84.2) = 21.319$ ,  $p < .001$ , its effect size is the medium ( $\omega^2 = .08$ ). *Group3* is 7.96 points higher than Motivational CQ compared to *Group1* ( $p < .01$ ) and 5.08 points higher than *Group2* ( $p < .01$ ). Based on these results a slight increase can be seen on the three dimensions with the first mobility program participation, but those respondents who partook more times in such programs have significantly higher scores especially for the Cognitive Metacognitive and Motivation dimensions (with stronger size effect).

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## 7. Conclusion

The aim of this study was to fill in the gap in the research regarding the average CQ level of each Hungarian generation. The Cognitive dimension was found to be the least strong, which indicates that each generation should deepen their cultural knowledge. No significant differences were found between the total CQ score between the genders, except in the behavioural CQ dimensions, where the females scored higher. Regarding the generations, no significant differences were found. There was no correlation between the age and CQ, except at the generational level. Within Generation Z (14-25 years old adolescents), CQ and age are positively related. The results proved a significant positive connection between the length of cultural exposure and CQ. The respondents who spent two years or more abroad have higher CQ, while regular international holidays did not affect the CQ level. The frequency of participation in mobility programs significantly correlates to high CQ, and each kind of mobility program resulted in higher CQ. The effect sizes were small but made the different programs comparable. The study has limitations due to the sample size of the mobility program participants and was not representative regarding the Hungarian population, but confirmed our previous assumptions, that developing CQ depends more on cultural exposure than age.

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