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One Creative Class Does Not Fit All! A Case Study of a Belgian Region

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Abstract

Creativity and innovation are vital components for organisations and cities to thrive. Richard Florida proposed a framework for regional development, putting creative individuals (the 'Creative Class') at the centre and linking them with three key elements for success, namely talent, technology and tolerance (the 3Ts). Used by policymakers around the world to develop their regional strategy, the importance of this group of creative individuals cannot be underestimated. Understanding them will help attracting them, which will contribute to regional development. However, knowledge on their characteristics, differences, and perceptions is lacking. Therefore, this study researches the Creative Class, gathering insights on their backgrounds and asking about their satisfaction and perceptions of the 3Ts. Through an online survey in Qualtrics targeting people working in creative occupations in Limburg, Belgium, this study examines possible correlations between intrapreneurship, satisfaction with the job or region and the 3Ts using Spearman's rank-order correlation. Next, this research offers new insights into how different demographic and professional subgroups perceive the 3Ts through running T-tests, ANOVA and their non-parametric equivalents. All analyses were run in SPSS. Quantitative analyses reveal correlations and differences in personal and work contexts linked to differences in perceptions of the 3Ts. Through this comprehensive analysis, a deeper understanding of the interplay between creativity, personal backgrounds, and individual perceptions of the expanded 3T model is achieved. The results highlight the importance of measuring the 3Ts through personal perceptions, revealing distinct differences within the Creative Class. Acknowledging the diversity of the Creative Class, this research aims to show how individual backgrounds and job context may shape perceptions of the expanded 3T framework. By showing their impact on the 3Ts, this study emphasises the value of incorporating personal and work context measures when examining the Creative Class.

Keywords: creativity, creative class, innovation, regional development, talent, technology.

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1 Introduction

> 'Only by understanding the rise of this new class and its values can we begin to understand the sweeping and seemingly disjointed changes in our society and begin to shape our future more intelligently' (Florida, 2012, p. xxi)

Over the past few decades, the realm of entrepreneurship and creativity has undergone a significant evolution in academic research within the field of social sciences. The link between the development of regions or cities and creativity, diversity, or innovation has been studied by many experts in the past, including academics, urban theorists, geographers, and economists (e.g. Cooke and Schwartz (2012), Jacobs (1992), Landry (2008)).

Notably, one pioneering scholar who has played a pivotal role in shaping this discourse is Richard Florida. In his seminal work, "The Rise of the Creative Class", Florida introduced the concept of the Creative Class and its profound impact on economic development and urban revitalisation. Published in 2002, Florida's work highlighted the emergence of the Creative Class, a new socio-economic group composed of a wide range of occupations all involving creative thinking, going from designers to artists, educators, engineers... By emphasizing the critical role of creative talent, technological innovation, and diversity in driving economic growth, Florida's research and his conceptual 3T model (Technology, Talent, Tolerance) opened new avenues of exploration for understanding the linkages between entrepreneurship, creativity, innovation, and urban development. According to Florida (2012), for regions and cities to thrive, they should focus on creating a climate that will attract and retain creative, talented individuals.

In Belgium, 43.8 percent of the workforce belongs to the Creative Class (Florida, 2012). In past research, the Creative Class has been treated mostly as one 'homogeneous' group of creatives, only differentiating between the super creative core, creative professionals and sometimes also the Bohemians. Although they all share their occupational creativity, this group can differ in all other aspects. Within this very diverse group of people with different creative occupations, is it not possible that their backgrounds, characteristics and opinions differ and also impact their perceptions of talent, technology and tolerance? Doing more in-depth research on the diversity of the Creative Class will provide answers to that question.

Finally, Florida explored the relation between creativity (measured by the Global Creativity Index – an aggregated measure of the global Talent, Technology and Tolerance indexes) and overall happiness and satisfaction with life. He found that creativity was closely related to happiness and satisfaction with life. This is a promising statement. When asked at the individual level, do people from the Creative Class feel happy and satisfied? Is there a correlation between satisfaction with the job or region and one of the 3Ts?

Based on the previously mentioned gaps and opportunities, this study focuses on the following research questions.

To what extent can we better understand the Creative Class and the 3Ts by focusing on their perceptions and satisfaction? By targeting the Creative Class itself and linking the 3Ts to satisfaction, we can obtain new and insightful information helping to understand this group better. Next, by combining insights on the perceptions of the 3Ts, satisfaction with the job and region, and intrapreneurship, this research tests a new, expanded 3T model.

Are there differences in the personal backgrounds or work context of the Creative Class, and can they be linked to differences in the perceptions of the expanded 3T model? As previously mentioned, the Creative Class in itself is very diverse. Testing for differences will highlight which elements from their personal life or work context play a role in shaping these perceptions.

This study measures the 3T model through a survey asking about the individual perceptions of the Creative Class. It expanded the model with three more variables, namely satisfaction with the job, with the region, and intrapreneurship. The sample of n=189 consisted of individuals working in organisations with a high expected ratio of Creative Class occupations in Limburg, Belgium. Quantitative analyses were run to test for correlations and differences in personal or work context

of the Creative Class that can be linked to differences in their perceptions of the expanded 3T model.

Measuring the 3Ts through perceptions provides a new way of obtaining information specific to the Creative Class population. Next, including measures on satisfaction with the job and region was proven useful, as satisfaction with the job was found to be positively related to perceived talent and perceived technology. On top, intrapreneurship and creative talent are closely related in literature, and were found to correlate in our study. Therefore, investigating the link between the 3Ts and other related concepts brings new insights. Finally, comparing perceptions of the expanded 3T model for differences in personal life and work context revealed that multiple factors play a role. Differences in backgrounds such as differences in workplace, belonging to the creative core or creative professionals, and the type of employment you are active in were found to be linked to different perceptions of the expanded 3T model. Accounting for personal life and work context measures into Creative Class research helps majorly in understanding the internal differences within the Creative Class, and their impact on the 3Ts.

This research paper is structured as follows: first, a literature review is presented. After, the research method is discussed. The results follow, and the paper finishes with a discussion.

2 Literature review

2.1 The rise of the Creative Class

Richard Florida (2012) created a new framework for categorising human capital based on occupational creativity. He divides all jobs into the Creative Class, the working class, the service class or the agricultural sector. Furthermore, Florida states that the Creative Class is the driving force behind economic development through innovation in cities in the United States and possibly worldwide. He has achieved great fame in the literature on human capital and economic development. His assumptions and statements are now explained in more detail.

A member of the Creative Class practices a profession in which creative decisions can be made. The Creative Class can be distinguished from the other classes because they are mainly paid to perform creative activities. Members of the working class and service class are primarily paid to do repetitive, mostly physical work. The Creative Class is divided into two subcategories (Florida, 2012).

The super creative core is the most creative group and consists of, for example, occupations in all types of science and engineering, architecture, education, art, sports and media. Their economic function is to create new ideas, new technology, and new creative content (Florida, 2012).

Around this core, the Creative Class also includes a broader group of creative professionals. Creative professionals consist of, for example, management professions, professions in law, business and finance. These people are engaged in solving complex problems that require independent judgment and high levels of education or human capital (Florida, 2012).

Although the service class is currently the largest, the Creative Class has the most economic influence. Individuals in the United States with Creative Class occupations earn, on average, almost twice as much as members of the service or working class. In addition, the Creative Class accounts for more than half of all wages and salaries (Florida, 2012).

Florida's work has been applied and researched broadly. A selection of relevant research can be found in Table 1 - Literature review on the application of the Creative Class. This table contains author(s) and publication year and summarises the research subject, method and findings. This

literature will be discussed further in this paper.

Table 1. Literature review on the the application of the Creative Class.

Author(s), year	Research focus	Method	Findings
Boschma and Fritsch, 2009	Relationship between Creative Class and employment growth	Regression analysis based on secondary data from 7 European countries	Positive relationship between creative class occupations, employment growth, and entrepreneurship at the regional level
Reese, 2012	Impact of the Creative Class or procreative class on regional economic growth	Regression analysis based on secondary data	Creative Class does not reliably drive economic growth
Marlet and Van Woerkens, 2007	Comparison of Florida's creative capital with human capital	Cross-section analyses of secondary data from Dutch cities and towns	Employment growth can be predicted best by a high ratio of the Creative Class, but also by local education
Cattivelli and Stawinoga, 2023	Presence of the Creative Class in peri-urban areas in Northern Italy	Principal component analysis and spatial regression models	More Creative Class in the municipalities closest to the urban centres
Bakowska, 2012	Satisfaction of the Creative Class with living in Szczecin, Poland	Analysing data from a telephone survey sample	The Creative Class in Szczecin is generally satisfied with their living conditions
Zenker, 2009	Understand needs and preferences of the Creative Class	Field study analysing basic needs and preferences of the Creative Class	The Creative Class and non-creative class exhibited structural differences in their ratings of the importance of different needs
Macke and Miri, 2023	Perceived workplace creativity and its link to regional embeddedness	Questionnaire in the Serra Gaúcha region, Brazil and reliability analysis, analysis of variance, and linear regression	Labor mobility and creative work significantly impact the overall perception of quality of life

Several have compared traditional human capital measures based on education as an indicator for regional growth to Florida's creative capital indicator based on occupational creativity. Some research supports the Creative Class as an indicator for regional growth, other studies doubt its reliability, and others highlight similarities between the Creative Class and the traditional human capital measures.

Boschma and Fritsch (2009) explored the relationship between the Creative Class and employment growth in regions in seven European countries, including Belgium. Although they found some evidence of a positive relationship between creative occupations and employment growth and entrepreneurship in some regions, it cannot be confirmed that Florida's creative occupations measure has a greater impact than traditional human capital based on education levels.

2.2 The Creative Class as driver for regional development

How is the Creative Class the main driver for economic growth? Through time, conventional reasoning formed that the key to economic growth in cities or regions was to attract companies, and talent would follow. Florida states that in recent years, people no longer simply follow work. Many more factors play a role when choosing where to live, such as the atmosphere, culture and diversity of a place (Florida, 2012).

Instead of cities focusing on attracting companies, they should focus on attracting creative talented people. He found that companies move to or establish where skilled people are. A high ratio of creative talented people in a city or region will likely attract companies, which leads to entrepreneurship and innovation. This ultimately drives economic and regional growth (Florida, 2012).

Due to Florida's focus the role of the Creative Class in fostering regional development, a lot of research focuses on their geography, satisfaction with the region or place and preferences. Cattivelli and Stawinoga (2023) explored the presence of the Creative Class in peri-urban areas in Northern Italy. They found that the Creative Class was concentrated near urban centers and less so in regions further away.

Bakowska (2012) researched the satisfaction of the Creative Class with living in Szczecin, Poland. The study revealed that 82% of respondents rated their satisfaction with living in Szczecin high, as well as their satisfaction with their current work. Work satisfaction reflects entrepreneurship and reinforces the belief in contributing to the city's growth. This highlights the Creative Class's strong motivation to empowering Szczecin's economic and social potential. Moreover, high satisfaction with current work suggests a low likelihood of leaving the city.

Zenker (2009) analysed the basic needs and preferences of the Creative Class through a field study and compared with the non-creative class. Results highlighted differences in preferences between the Creative and non-creative class, and furthermore within the Creative Class. For example, the Creative Core found the energy and open-mindedness of a place more important in choosing where to live than their financial situation or job opportunities.

Macke and Miri (2023) looked at the perception of quality of life based on talent, tolerance and technology. They found that challenging work, task control, and a supportive work environment had a positive influence on perceived workplace creativity.

2.3 The creative mindset

According to Florida (2012), the Creative Class and its creativity are not bound by their occupation. Rather, the creative mindset is found in elements from work culture to values and within communities. It reshapes the way people see themselves as economic and social actors. Understanding the values, preferences and motives of the Creative Class is therefore the key to creating a climate that will attract them.

Since the Creative Class is driving prosperity in regions and cities, they should be considered when developing city and regional policies. Florida historically described the Creative Class as a 'moving' class, meaning that if they are not satisfied in their job or environment (if not all 3Ts are present), they will move to another region, city or organisation where those 3Ts can more visibly be found (Florida, 2012). Therefore, taking into account satisfaction with the job and region can be very insightful, as it has implications on future regional development.

2.4 Competitive advantage through innovation and intrapreneurship

Although Florida (2012) argues that creativity is key for companies to gain a competitive advantage, other authors cite intrapreneurship as crucial for organisations to survive and maintain a competitive

advantage (Ireland et al., 2003; Morris et al., 2011). Intrapreneurship is seen as a key driver of organisational success, highlighting the important role of the employee in the company's success.

In Limburg, where small and medium-sized enterprises (SMEs) represent 65.0 percent of the Belgian working population and contribute significantly to employment and the economic value added (Katsinis et al., 2024), fostering employee-driven innovation is particularly critical. However, the innovation level in SMEs is lower than required, largely due to elements typical for innovation such as uncertainty, complexity, and high risk (Griffiths-Hemans & Grover, 2006; Parida et al., 2012). Therefore, enhancing employees' capacity for innovative work behaviour through intrapreneurship is essential to obtain competitiveness, specifically for SMEs (Stoffers et al., 2019). Getting insight into the perceived intrapreneurship of the Creative Class is original and opens many avenues for new research.

2.5 Creative Class critiques

Although Florida's theory has gained worldwide attention and is applied to shape regional strategy in numerous countries, his Creative Class and 3Ts have also faced criticism. Some of these critiques are summarised.

Several state that creative capital is not substantially different from human capital (e.g. Marlet & Van Woerkens, 2007), or that Florida's ideas are not new or innovative (Glaeser, 2005).

In their research in the Netherlands, Marlet and Van Woerkens (2007) found that both education levels and the presence of the Creative Class can predict employment growth in Dutch cities. However, the Creative Class was the better measure. Glaeser (2005) highlights similarities of Florida's ideas with existing theories, such as the importance of idea generation, the role of creativity in urban areas and the human capital theory of city growth.

Second, some scholars have not been able to support Florida's statement on the role of the Creative Class in fostering regional or economic development (Krätke, 2010; Reese, 2012). According to Reese (2012), the Creative Class does not reliably drive economic growth. Instead, economic growth is improved by initiatives and policies that focus on places where communities and people spend time.

Another point of critique is that context and history matter and should be accounted for. The role of the past and its influence on the present and economic environment cannot be forgotten (Storper & Scott, 2009). Peck (2005) states that before applying the Creative Class theory, certain preconditions need to be checked. Florida's framework has been applied for strategic planning within the United States and Europe without accounting for these preconditions or mapping the regional context beforehand. Similarly, O'Callaghan (2010) argues that the role of the geographical context is ignored and that Florida oversimplifies complex urban dynamics.

3 Methods

3.1 Questionnaire design

The research design was composed based on the 3T model from Florida and a new conceptual framework, where satisfaction with the job and region were also included (Macke & Miri, 2023). Intrapreneurship was added because of regional relevance and a strong link with innovation.

Traditionally, the 3T model has been assessed by measuring Technology, Talent, and Tolerance through indicators calculated by secondary data on a city or regional level. The disadvantage of this method is that it relies on the availability of extensive secondary data necessary to calculate each of the 3Ts to draw conclusions. Next, even more important, measuring the 3Ts at the

regional or city level does not provide insights into the perceptions of the Creative Class population itself, therefore this offers opportunities for further research.

Do we truly understand the Creative Class and their values? As Florida puts them at the centre of his framework, getting insights into the minds and backgrounds of the Creative Class population seems crucial. Therefore, this study focuses on perceptions of the Creative Class by gathering individual data. This approach is original and innovative, as it broadens our understanding of this powerful group from their perspective.

By looking into the Creative Class and their differences in backgrounds, this research provides new, valuable information about the internal diversity of the Creative Class. This is another original contribution to literature.

The research addresses a specific regional context, namely Limburg, Belgium. Targeting one specific region is useful since results can be directly applied by local governments, policymakers and entrepreneurs from the region. Additionally, it creates opportunities for future research by replicating this study in other regions and comparing the results.

Intrapreneurship is key to helping employees drive innovation and improve the competitiveness of SMEs, especially in regions like Limburg where they play a major economic role. Because of the specific relevance for the Limburg region, this study includes intrapreneurship as an extra variable.

Figure 1 presents the conceptual framework applied in this research.

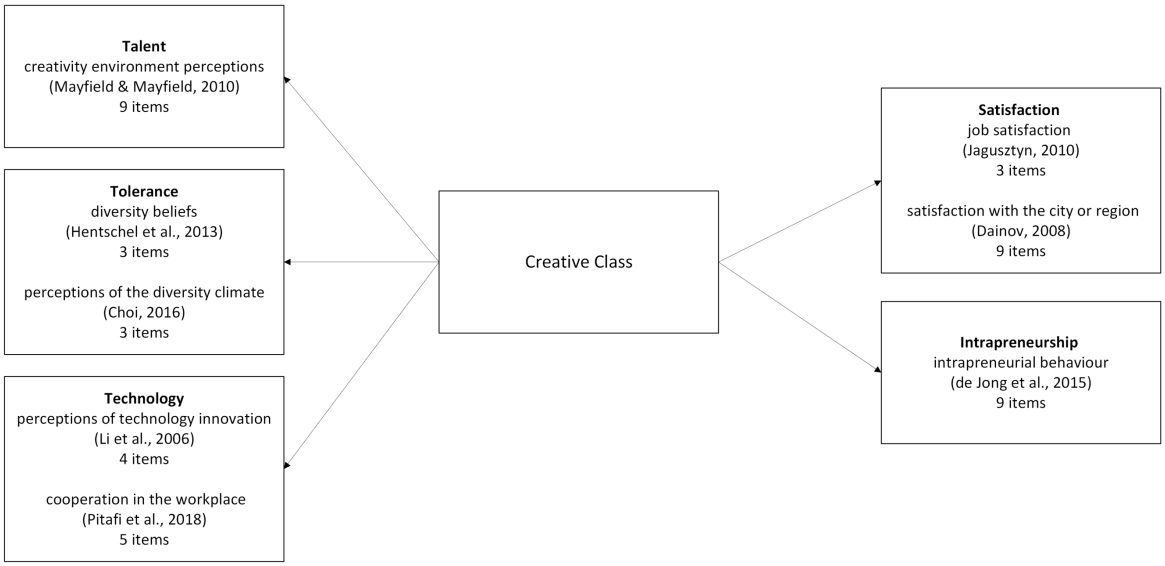

Figure 1. Conceptual framework

The survey consisted of two parts. In the first part, the aim was to get respondents' perceptions regarding the 3Ts, satisfaction with the job and region, and intrapreneurship. The second part consisted of demographic questions regarding personal life and work context.

As Talent, Tolerance, Technology, Satisfaction, and Intrapreneurship are all constructs, they cannot be measured directly. Per construct, one or more scales were chosen based on their former uses in literature as indicators for the construct. The first construct 'Talent' was measured by nine questions tackling creativity environment perceptions (Mayfield & Mayfield, 2010). 'Tolerance' was questioned via six items, with three concerning diversity beliefs (Hentschel et al., 2013) and three about perceptions of the diversity climate (Choi, 2016). 'Technology' formed the third construct and was assessed through nine items: four tackling perceptions of technology innovation (Li et al., 2006) and five dealing with cooperation in the workplace (Pitafi et al., 2018). Three

questions were asked about 'Job satisfaction' (Jagusztyn, 2010), and nine about 'Satisfaction with the city or region' (Dainov, 2008). Lastly, 'Intrapreneurship' was measured through nine items checking intrapreneurial behaviour (de Jong et al., 2015). Respondents were asked to indicate the extent to which they agreed with the statements using a 5-point Likert scale. Options ranged from one (totally disagree) to five (totally agree). All constructs, their scales and items can be found in Table 2.

The second part of the survey comprised eleven demographic multiple choice questions about personal background and work context. Personal questions involved questions about gender, age, education, marital status, and kids. Questions dealing with work context asked about respondents' personal income, professional activity, size of the organisation, workplace (which Higher Education Institution (HEI) or incubator they worked in), and finally their type of employment. All demographic questions and their answer options can be found in Table 2.

3.2 Obtaining and preparing data

After all questions were gathered and structured, an online survey was created in Qualtrics. As this study wanted to investigate the Creative Class in Limburg, organisations with a high expected ratio of Creative Class occupations were considered as the target audience. Ultimately, it was decided to focus on a combination of people working in incubators and HEIs in Limburg, as they are an accurate representation of (part of) the Creative Class population in Limburg.

The survey was distributed via email to a total of 307 companies in incubators. This resulted in contacting 214 companies located at Corda Campus, 20 at BioVille, 32 at IncubaThor, and finally 41 at C-mine Crib.

The second target group are people working in HEIs in Limburg. The three main institutions present in Limburg are Hasselt University (Hasselt), University College PXL (Hasselt), and University College UCLL (Diepenbeek). The survey was distributed to all email addresses found on the internet on the one hand, and shared on the intranet and internal channels of University College PXL and Hasselt University on the other hand. For University College UCLL, however, no access to the intranet, nor personal information on the website was available. Therefore it was further excluded from this research.

Both for the incubators and for the HEIs, data was gathered from 17/01/2022 to 26/03/2022. During this period, three follow-up emails were sent to increase the response rate. After data collection, the data was imported into SPSS for further analysis. All variables were labeled and coded and finally 25 respondents that didn't work in either a HEI or incubator were deleted from the sample.

3.3 Preliminary statistics

Since this study contains the dependent variables talent, tolerance, technology, satisfaction with job and region, and intrapreneurship, which are constructs measured by scales, it is necessary to analyse their reliability. All constructs had a $\alpha > 0.65$, indicating they are reliable measures for the constructs. Only Tolerance had a value of $\alpha < 0.65$. For this variable, items 4-6 were deleted iteratively until $\alpha > 0.65$. This resulted in only using the scale for diversity beliefs (Hentschel et al., 2013) to measure tolerance.

After construct validity was checked for all variables, factor variables were computed as the mean value of all accepted items per construct. These are the base for further analysis. For each dependent variable, the mean scores per item and in total per factor are shown in Table 3.

3.4 Assumptions and analyses

Two types of statistical tests were run. On the one hand, correlation analysis was done to understand the relationship between the 3Ts and satisfaction and intrapreneurship. Next, to compare scores of the dependent variables between groups, t-test and ANOVA were run.

Correlation analysis

To understand if there is a relationship between satisfaction with the job or region and one or more of the 3Ts, correlations were run. The relation between intrapreneurship and perceived talent was also explored. Normality is required to run a Pearson correlation. Since this assumption was not met (Table 5), correlation is evaluated using Spearman's rho instead. Assumptions for this were further checked.

T-test, ANOVA, Mann-Whitney U, and Kruskal-Wallis tests

To compare the means of perceptions of the 3Ts, satisfaction with the job and region and intrapreneurship between two groups of respondents with a difference in personal life or work context, the independent samples t-test for normally distributed variables, and Mann-Whitney U test for non-normally distributed variables were used.

For comparing differences between more than two groups, ANOVA and Kruskal-Wallis tests were run for normally and non-normally distributed variables respectively. Post-hoc tests were run for significant differences between groups. When an ANOVA revealed a significant difference, the effect size was checked.

Before running the t-test or ANOVA test, a few assumptions were evaluated. First, the number of observations per group is sufficiently large (n=10). The independent variables and their number of observations per group can be found in Table 2. Second, each observation in the data is independent. Third, normality of the dependent variables is required in all groups. Talent, technology, tolerance, and satisfaction with the job were not normally distributed (Table 5, Table 6). For those, non-parametric tests were run. Next, data was measured on a continuous scale, which is appropriate. Finally, homogeneity of variance was verified (Table 7, Table 9).

4 Results

4.1 Sample

The final sample consisted of one hundred and eighty-nine respondents. Variables about personal life showed that 45% of the respondents were female (n=84). Ages started from 21 and were more or less equally distributed, with 30-41 years old having the biggest proportion of respondents (34%). 48% (n=91) had a master's degree and 28% obtained a PhD (n=53). 69% (n=130) was married or living with a partner.

Questions on work context revealed that 65% of the respondents worked in a very large organisation with over 250 employees (n=122). Regarding workplace, 72% worked in a HEI, and 28% in an incubator company. Only 5.3% indicated that they did not belong to the Creative Class. Looking further into the Creative Class, 72.9% belonged to the super creative core, whereas 27.1% were creative professionals. Looking at the type of employment, 60% of respondents worked as an employee, 25% as a civil servant, and 15% was an entrepreneur. All descriptives can be found in Table 2.

4.2 Correlation

To understand if there is a relation between satisfaction with the job and talent, satisfaction with the job and technology, and talent and intrapreneurship, Spearman's rank-order correlation was run.

Satisfaction with the job and perceived talent showed a strong, positive relationship, which was statistically significant ($r_s(187) = 0.620$, $p < .001$). Satisfaction with the job and perceived technology also showed a strong, positive relationship, which was statistically significant ($r_s(187) = 0.507$, $p < .001$). Finally, talent and intrapreneurship showed a medium, positive relationship, which was statistically significant ($r_s(187) = 0.342$, $p < .001$).

4.3 T-test

Independent samples t-tests were performed to compare the means of the dependent variables satisfaction region and intrapreneurship between two groups of the independent variables gender, marital status, kids, HEI, Creative Class and workplace. Results can be found in Table 7 and Table 8.

One significant difference was found between groups for satisfaction with the region, namely between the two groups of the Creative Class ($t(153) = 3.171$, $p = 0.002$). The creative professionals ($M = 3.788$, $SD = 0.424$) reported significantly higher satisfaction with the region than the super creative core ($M = 3.544$, $SD = 0.428$). The effect size was moderate, with a Cohen's d of 0.573. No statistically significant difference was found for satisfaction with the region between males or females ($t(185) = 0.288$, $p = 0.774$), respondents being married or not ($t(187) = -0.895$, $p = 0.372$), having kids or not ($t(187) = 1.274$, $p = 0.204$), working at Hasselt University or University College PXL ($t(132) = 0.243$, $p = 0.809$).

One significant difference was found between groups for intrapreneurship, namely between the two workplaces ($t(187) = -3.686$, $p < .001$). Respondents working in a HEI ($M = 3.454$, $SD = 0.583$) scored lower on intrapreneurship than those working in an incubator ($M = 3.793$, $SD = 0.520$). The effect size was moderate, with a Cohen's d of -0.597. No statistically significant difference was found for intrapreneurship between respondents being married or not ($t(187) = 1.327$, $p = 0.186$).

4.4 ANOVA test

A one-way ANOVA was performed to compare the means of the dependent variables satisfaction region and intrapreneurship across different groups of the independent variables incubator, age, education, employment type, and company size. Results of the ANOVA tests can be found in Table 9 and Table 10.

For satisfaction with the region, no statistically significant difference was found between the different incubators ($F(2, 50) = 1.420$, $p = 0.251$), age groups ($F(3, 185) = 0.310$, $p = 0.818$), levels of education ($F(3, 185) = 1.144$, $p = 0.332$), and ranges of income ($F(2, 159) = 2.360$, $p = 0.098$).

Several significant differences in the mean scores of intrapreneurship were found between groups. A one-way ANOVA revealed that there was a statistically significant difference in intrapreneurship between at least two groups of age ($F(3, 185) = 3.686$, $p = 0.013$). The effect size, eta squared (η^2), was 0.056, indicating a small effect. Tukey's HSD Test for multiple comparisons found that the mean value of intrapreneurship was significantly lower for respondents of 21-30 years old ($M = 3.411$, $SD = 0.613$), compared to respondents of over 50 years old ($M = 3.743$, $SD = 0.571$); $p = 0.049$, 95% C.I. = -0.663, -0.001. Next, there was a statistically significant difference in intrapreneurship between at least two groups of income ($F(2, 159) = 8.819$, $p < 0.001$). The

effect size, eta squared (η^2), was 0.100, indicating a medium effect. Tukey's HSD Test for multiple comparisons found that the mean value of intrapreneurship was significantly higher for respondents earning over 7500 euros (M = 4.222, SD = 0.444), compared to respondents earning up to 5000 euros (M = 3.451, SD = 0.578); p < 0.001, 95% C.I. = -1.209, -0.333, and respondents earning 5001-7500 euros (M = 3.571, SD = 0.537); p = 0.003, 95% C.I. = -1.109, -0.193. There was also a statistically significant difference in intrapreneurship between at least two groups of company size (F(3, 185) = 3.437, p = 0.018). The effect size, eta squared (η^2), was 0.053, indicating a small effect. Tukey's HSD Test for multiple comparisons found that the mean value of intrapreneurship was significantly higher for respondents working in a company with 1-10 employees (M = 3.830, SD = 0.521), compared to respondents working in a company with over 250 employees (M = 3.466, SD = 0.599); p = 0.012, 95% C.I. = 0.060, 0.667. No statistically significant difference was found between the different incubators (F(2, 50) = 0.159, p = 0.853) and levels of education (F(3, 185) = 0.180, p = 0.910).

4.5 Mann-Whitney U test

Non-parametric Mann-Whitney U tests were performed to compare scores on the dependent variables talent, technology, tolerance, satisfaction job, satisfaction region, and intrapreneurship between two groups of the independent variables gender, marital status, kids, HEI, Creative Class, and workplace. The Mann-Whitney U test results are presented in Table 11 and Table 12.

Several significant differences in the scores of the talent were found between groups. There was a difference in talent between the two groups of gender (z = -2.579, p = 0.010). Males (MR = 103.20) scored significantly higher on talent than females (MR = 82.72). Next, there was a difference between the two groups of workplace (z = -3.473, p < 0.001). Respondents working in an incubator (MR = 117.08) scored significantly higher on talent than those working in a HEI (MR = 86.39). Finally, there was a difference in talent between the two groups of the Creative Class (z = -3.226, p = 0.001). The creative professionals (MR = 97.04) scored significantly higher on talent than the super creative core (MR = 70.92). No statistically significant difference in talent was found between respondents being married or not (z = -1.555, p = 0.120), having kids or not (z = -0.750, p = 0.453), and working at Hasselt University or University College PXL (z = -0.284, p = 0.776).

Several significant differences in the scores of technology were found between groups. There was a difference in technology between the two groups of workplace (z = -2.604, p = 0.009). Respondents working in an incubator (MR = 111.56) scored significantly higher on technology than those working in a HEI (MR = 88.55). Next, there was a difference between the two groups of the Creative Class (z = -2.685, p = 0.007). The creative professionals (MR = 93.83) scored significantly higher on technology than the creative core (MR = 72.12). No statistically significant difference in technology was found between males or females (z = -1.265, p = 0.206), respondents being married or not (z = -1.953, p = 0.051), having kids or not (z = -0.944, p = 0.345), and working at Hasselt University or University College PXL (z = -1.362, p = 0.173).

For tolerance, no statistically significant difference was found between males or females (z = -0.304, p = 0.761), respondents being married or not (z = -0.571, p = 0.568), having kids or not (z = -0.315, p = 0.753), working at Hasselt University or University College PXL (z = -0.084, p = 0.933), working at an incubator or HEI (z = -0.426, p = 0.670), and belonging to the creative core or creative professionals (z = -0.790, p =0.430).

One significant difference in the scores of job satisfaction was found, namely between the two groups of workplace (z = -2.180, p = 0.029). Respondents working in an incubator (MR = 108.52) reported a significantly higher satisfaction with the job than those working in a HEI (MR

= 89.73). No statistically significant difference in satisfaction with the job was found between males or females (z = -1.175, p = 0.240), respondents being married or not (z = -1.267, p = 0.205), having kids or not (z = -0.274, p = 0.787), working at Hasselt University or University College PXL (z = -0.059, p = 0.953), and belonging to the creative core or creative professionals (z = -1.900, p =0.057).

One significant difference in the scores of satisfaction with the region was found between groups, namely between the two groups of workplace (z = -2.802, p = 0.005 z = -2.802, p = 0.005). Respondents working in an incubator (MR = 112.80) reported a significantly higher satisfaction with the region than those working in a HEI (MR = 88.06).

Several significant differences in the scores of intrapreneurship were found between groups. There was a difference in intrapreneurship between the two groups of gender (z = -5.041, p < 0.001). Males (MR = 111.98) had significantly higher reported intrapreneurship than females (MR = 71.95). There was a difference between the two groups of the Creative Class (z = -3.814, p < 0.001). The creative professionals (MR = 100.51) had significantly higher reported intrapreneurship than the creative core (MR = 69.63). No statistically significant difference in intrapreneurship was found between respondents having kids or not (z = -0.662, p = 0.508) and working at Hasselt University or University College PXL (z = -1.447, p = 0.148).

4.6 Kruskal-Wallis test

Kruskal-Wallis tests were performed to compare the effect of the independent variables incubator, age, education, employment type and company size on the dependent variables talent, technology, tolerance, satisfaction job, satisfaction region, and intrapreneurship. Finally, the non-parametric results of the Kruskal-Wallis tests are shown in Table 13 and Table 14.

A Kruskal-Wallis test revealed a statistically significant difference in talent between at least two groups of company size (H(3) = 12.057, p = 0.007). The post-hoc pairwise comparison test showed that the mean rank of talent was significantly different between people working in organisations with 1-10 employees (MR = 119.90) and over 250 employees (MR = 85.40) (p = 0.012). Next, the test also revealed a statistically significant difference in talent between at least two groups of type of employment (H(2) = 12.849, p = 0.002). The post-hoc pairwise comparison test showed that the mean rank of talent was significantly different between employees (MR = 82.47) and entrepreneurs (MR = 122.72) (p = 0.001), and also between civil servants (MR = 92.4) and entrepreneurs (MR = 122.72) (p = 0.050). No statistically significant difference was found for talent between the different incubators (H(2) = 0.988, p = 0.610), age groups (H(3) = 5.573, p = 0.134), levels of education (H(3) = 1.384, p = 0.709), and ranges of income (H(2) = 4.005, p = 0.132).

For technology, no statistically significant difference was found between the different incubators (H(2) = 1.445, p = 0.485), age groups (H(3) = 5.989, p = 0.112), levels of education (H(3) = 3.110, p = 0.375), ranges of income (H(2) = 0.488, p = 0.783), company sizes (H(3) = 6.169, p = 0.104), and employment types (H(2) = 3.262, p = 0.196).

Focusing on tolerance, the Kruskal-Wallis test revealed a statistically significant difference between at least two groups of income (H(2) = 6.803, p = 0.033). The post-hoc pairwise comparison test showed that the mean rank of tolerance was significantly different between people earning up to 5000 (MR = 76.94) and people earning over 7500 (MR = 116.40) (p = 0.030). No statistically significant difference was found for tolerance between the different incubators (H(2) = 0.442, p = 0.802), age groups (H(3) = 4.310, p = 0.230), levels of education (H(3) = 1.267, p = 0.735), company sizes (H(3) = 0.313, p = 0.957), and employment types (H(2) = 5.915, p = 0.052).

Next, for satisfaction with the job, the Kruskal-Wallis test revealed that there was a statistically significant difference between at least two groups of type of employment ($H(2) = 14.445$, $p < 0.001$). The post-hoc pairwise comparison test showed that the mean rank of in satisfaction with the job was significantly different between employees ($MR = 80.58$) and entrepreneurs ($MR = 120.44$) ($p = 0.001$). No statistically significant difference was found for satisfaction with the job between different incubators ($H(2) = 0.006$, $p = 0.997$), age groups ($H(3) = 5.570$, $p = 0.135$), levels of education ($H(3) = 0.309$, $p = 0.958$), ranges of income ($H(2) = 3.355$, $p = 0.187$), and company sizes ($H(3) = 7.220$, $p = 0.065$).

Running the Kruskal-Wallis test for satisfaction with the region revealed that there was a statistically significant difference between at least two groups of company size ($H(3) = 9.018$, $p = 0.029$). The post-hoc pairwise comparison test showed that the mean rank of satisfaction with the region was not significantly different across groups of company size when looking at the adjusted significance levels. No statistically significant difference was found for satisfaction with the region between employment types ($H(2) = 1.370$, $p = 0.504$).

Finally, for intrapreneurship, the Kruskal-Wallis test revealed that there was a statistically significant difference between at least two groups of type of employment ($H(2) = 21.739$, $p < 0.001$. The post-hoc pairwise comparison test showed that the mean rank of intrapreneurship was significantly different between employees ($MR = 82.35$) and entrepreneurs ($MR = 134.11$) ($p = 0.000$), and also between civil servants ($MR = 86.00$) and entrepreneurs ($MR = 134.11$) ($p = 0.000$).

5 Discussion

5.1 Conclusion

First, this study researched to what extent we can better understand the Creative Class and the link with the 3Ts by focusing on their perceptions and satisfaction. It can be concluded that doing research into the perceptions of the Creative Class in relation to the 3Ts and satisfaction creates a complete layer of new insights that is complementary to all research on the Creative Class and the 3Ts. Although efforts have been done to integrate data on the Creative Class measured on the individual level, data from the Creative Class on their perceptions of the 3Ts is lacking.

By adding measures on satisfaction with the job and region and intrapreneurship, a new expanded 3T model for perceptions was created. This new model provides a more complete image of the Creative Class, not only tackling their perceptions of the 3Ts and including measures on their demographics and work context, but also integrating satisfaction with their job and region and exploring the link between talent and intrapreneurship.

After running correlation analysis, satisfaction with the job was found to strongly relate to both perceived talent and technology. This implies that Florida's assumption about the link between satisfaction and creativity (measured through the 3Ts) can be confirmed in the context of our research only for talent and technology, not for tolerance. Next, there is a medium correlation between perceived talent and intrapreneurship. Further research into the link of intrapreneurship with the 3Ts, and especially talent, is therefore advised.

Second, this study tested for differences in the personal backgrounds or work context of the Creative Class linked to perceptions of the expanded 3T model. After running t-tests and ANOVA tests, and their non-parametric equivalents, results approved the assumption that although respondents share their occupational creativity, they are diverse in their opinions, backgrounds,

and perceptions. Elements from their personal life and work context differed with perceptions of the expanded 3T model.

Variables such as gender, age, workplace, belonging to the creative professionals or the creative core, company size, employment type, and income play a role in the perceived levels of talent, technology, tolerance, satisfaction with the job or region, and intrapreneurship. This implies that the 3T model can be even better understood by looking at the background of the Creative Class population.

Focusing on the 3Ts, findings showed that talent was most often found to differ between subgroups. Talent scores differed significantly based on gender, workplace, company size, employment type, and belonging to the creative professionals or creative core. Second was technology, where scores differed significantly based on workplace and creative professionals vs creative core. Tolerance was only found to vary significantly based on income.

For satisfaction with the region, scores were found to differ significantly based on workplace and belonging to the creative professionals or creative core. For satisfaction with the job, scores varied significantly based on workplace and the type of employment. Finally, intrapreneurship results showed the most significant differences among all dependent variables. Intrapreneurship was found to differ significantly based on gender, type of employment, workplace, belonging to the creative professionals or creative core, company size, income, and age.

Although several factors from personal life and work context were found to be linked to differences in the perceptions of the expanded 3T model, some of the independent variables also were not linked to differences in perceptions. Differences in marital status, having kids or not, the HEI one worked in, the incubator one worked in, and finally education in this study were all not found to be linked to significant differences in perceptions. This does not imply they are not relevant or have no influence on the 3T model, but in this study different groups of those variables were not found to be linked to significant differences in perceptions.

5.2 Application and implications

The method from this study has been applied in Brazil. Macke and Miri (2023) have examined in the Serra Gaúcha region how professionals perceive workplace creativity and its link to regional embeddedness. They have measured the 3Ts based on perceptions, and used the same constructs for Talent, Tolerance and Technology. They have added satisfaction with work and the region, and included the link with Embeddedness. This study included all kinds of professionals, not only focusing on the Creative Class.

The research results have broad implications and applications. On the one hand, results could be used for territorial planning and in shaping regional development policies. Optimising amenities and creating a good and tolerant environment that boosts well-being and innovation will contribute to a higher satisfaction with the region. Another point of focus should be inclusivity. Policies should aim for an inclusive (work) environment, addressing the various needs of the diverse group of creatives. Finally, cities or regions could help foster intrapreneurship by providing resources and policies to support risk-taking and innovation within organisations.

Next, this research is relevant for organisations focusing on regional economics, creative economies, and innovation ecosystems. For organisations like POM Limburg, the expanded 3T framework can help understand the Creative Class and the factors influencing their perceptions and satisfaction. This could help to develop initiatives to attract and retain creative talent within the region.

Finally, the findings are also relevant for HR and all organisations seeking creative talent. With the importance of diversity, they should focus on attracting creative people with diverse

backgrounds, education and interests and be aware that this group is very diverse. Next, creating a supportive but at the same time challenging work environment is beneficial for work satisfaction. Creating an atmosphere where intrapreneurship is encouraged will help organisations gain a competitive advantage. Finally, regularly assessing job satisfaction can help identify areas for improvement in both the content of the work and the work environment.

These recommendations can help to align regional and economic policies, and organisational strategy to account for the needs and values of the Creative Class, ultimately fostering a more open and innovative environment.

5.3 Limitations and future research

Several limitations of this study can be acknowledged. The most important limitation of this study is the lack of sufficient data, where sometimes the sample size of subgroups might be small. This has an implication on the interpretation of results. There might be significant differences that can't be proven because of the small group size, and vice versa can significant findings in this study partially be caused by small samples or big differences in the sizes of the groups that are compared.

Another limitation is the scope of the variables. While the 3T framework is expanded and incorporates variables like satisfaction and intrapreneurship, further research could explore other factors affecting perceptions, including cultural or economic aspects specific to the region. Next, another avenue for future research is looking at the different generations like Generation X, Y, Z, and Alpha. All of these generations have different backgrounds, ways of growing up and perceptions on life and work. It would be interesting to add this to the Creative Class research.

Third, this study focuses solely on the Creative Class. The advantage broadly proven in the results is that this population can be examined in more detail. Findings highlight the diversity within the Creative Class and therefore future research should keep looking at how backgrounds shape perceptions of the 3Ts in different regions. A disadvantage is that comparison with people outside of the target group (non-creative class) is not possible. Therefore, one of the recommendations for future research is repeating this research for a population composed of people working in all of the classes. This would aid the generalisability and provide new insights into the total population of working people, their internal differences, and perceptions of the expanded 3T model.

Linked to this is the specific regional context, since the study focused on people working in Limburg, Belgium. This limits generalisability to other regions or countries. On the other hand, it creates opportunities for the direct application of the results in regional policies.

Finally, there is some potential bias in the sample, with overrepresentation of certain subgroups. The occupations that make up the division between the creative core and the creative professionals are in this study rather homogeneous. The creative core within this study is mainly working in education. This implies that generalisations can only be made within the context of this research design, and only for the people working in the defined incubators and HEIs in Limburg, Belgium. Therefore, the generalisability of the findings is rather limited. Repeating this study with a good representation of all occupations of the creative core, including people working in arts, architecture, media, and entertainment... is one of the avenues for future research.

6 Tables

6.1 Descriptives

Table 2. Descriptives.

Variable	Frequency (%)	Valid %
Gender		
Female	84 (44)	45
Male	103 (55)	55
Other / I don't want to answer	2 (1)	
Age		
21-30	43 (23)	
31-40	64 (34)	
41-50	44 (23)	
>50	38 (20)	
Degree		
No academic or college degree	14 (8)	
Bachelor	31 (16)	
Master	91 (48)	
PhD	53 (28)	
Income level		
Up to 5000	102 (54)	63
5001-7500	50 (27)	31
>7500	10 (5)	6
I don't want to answer	27 (14)	
Children		
Yes	114 (60)	
No	75 (40)	
Marital status		
Unmarried (Single, divorced, widow)	59 (31)	
Married or living with a partner	130 (69)	
Type of employment		
Employee	108 (57)	60
Entrepreneur	27 (14)	15
Civil Servant	46 (25)	25
Other (I don't know)	8 (4)	
Company size		
1-10 employees	30 (16)	
11-49 employees	21 (11)	
50-250 employees*	16 (8)	
>250 employees	122 (65)	
*Grouped together 50-100 emp. (n = 10) and 101-250 emp. (n = 6)		
Workplace		
Higher Education Institution	136 (72)	

Variable	Frequency (%)	Valid %
Incubator	53 (28)	
Higher Education Institution		
Hasselt University	72 (38)	54
University College PXL	62 (33)	46
University College UCLL	2 (1)	
Other (none)	53 (28)	
Incubator		
Corda Campus	30 (15.9)	56.6
BioVille	11 (5.8)	20.8
IncubaThor + C-mine Crib	12 (6.3)	22.6
Other (none)	136 (72)	
Professional activity		
Non-creative class (Agriculture, service class, working class)	10 (5.3)	6.1
Creative class	155 (82)	93.9
Other	24 (12.7)	
Creative Class		
Creative professional	42 (22.2)	27.1
Super creative core	113 (59.8)	72.9
Other	34 (18)	

6.2 Dependent variables – scales, items and factor

Table 3. Dependent variables – scales, items and factor

Talent		
Scale	Item	Mean
Creativity environment, Mayfield & Mayfield 2010	My supervisor encourages me to be creative	4.29
	My work group is supportive of new ways of doing things.	4.24
	My organization encourages me to work creatively.	3.93
	I have the resources I need to do my job.	4.01
	My work is challenging.	4.41
	I have control over how I do my work.	4.2
	My organizations' politics makes it difficult to be creative.	3.59[1]
	My organizations' politics impedes spontaneity in the workplace.	3.77[2]
	It is difficult to be creative with the work deadlines I have.	3.24[3]

Talent		
Scale	Item	Mean
	Talent factor	3.96
Technology		
Technology innovation, Li et al 2006	My organization frequently introduces new products ideas into production process.	3.61
	My organization has high probability of success of new products being tested.	3.62
	My organization has radically improved the technologies used.	3.43
	My organization has frequently renewed its equipment.	3.44
Workplace cooperation, Pitafi et al 2018	Employees found it easy to work with each other.	3.89
	Individual members were comfortable communicating with each other about needed to be done.	3.96
	Employees cooperated to get the work done.	4.11
	Individual members were very willing to share information with each other about their work.	4.11
	Individual members work well together to solve problems and make decisions.	4.06
	Technology factor	3.8
Tolerance		
Diversity beliefs, Hentschel et al 2013	Work teams are more effective when they include people who are different from one another.	3.98
	I prefer to work with people who are different from me.	3.3
	Work teams perform better when they include people who are different from one another	3.72
Diversity climate, Choi 2016[4]	Supervisors / team leaders in my work are committed to a workforce representative of all segments of society.	3.26
	Policies and programs promote diversity in the workplace (for example recruiting minorities and women, training in awareness of diversity issues, mentoring).	3.24
	Managers/ supervisors work well with employees of different backgrounds.	3.75

Talent		
Scale	Item	Mean
	Tolerance factor	3.67
Satisfaction job		
Satisfaction with the job, Jagusztyn 2010	All in all, I am satisfied with my job.	4.24
	I am satisfied with the profession I have chosen.	4.31
	I am satisfied with the company I work for.	4.3
	Satisfaction job factor	4.28
Satisfaction region		
Satisfaction with the city/region, Dainov 2008	I am satisfied with my city.	4.05
	If I had to move from my city, I would choose another city in the same region.	3.48
	In my city, people have a good quality of life.	4.1
	In my region, people have a good quality of life.	4.05
	I intend to continue living in my city.	3.96
	In my city, there are good companies to work for.	3.26
	Whenever there is a crisis, my city knows how to get out of it.	3.11
	My region attracts outsider companies because of the quality of the local workforce.	3.04
	In my region, qualified people are not unemployed.	3.55
	Satisfaction region factor	3.62
Intrapreneurship		
Intrapreneurial behaviour, de Jong, Parker, Wennekers, & Wu 2015	I generate creative ideas.	4.04
	I seek out new techniques, technologies, or product ideas.	3.99
	I promote and defend my ideas to others.	4.15
	I identify long-term opportunities as well as dangers to the company.	3.84
	I am known as a successful defender of important issues.	3.64
	I try to explore new opportunities for the company.	3.92

Talent		
Scale	Item	Mean
	I take risks in my job.	3.45
	I go for the big win when there are big interests at stake, even when it can go seriously wrong.	2.55
	I act first and then seek approval, even when I know that would upset others.	2.37
	Intrapreneurship factor	3.55

[1], [2], [3] Mean score is obtained through inversing scores on this item to comply with the chosen scale.

[4] In grey, the three items from Diversity climate that were not included in the factor Tolerance.

Reliability

Table 4. Cronbach's alpha for testing reliability of the constructs

Construct	Number of items	Cronbach's Alpha ($\alpha > 0.65$)
Talent	9	0.799
Technology	9	0.857
Tolerance	6	0.581
	5 (1-5)	0.59
	4 (1,2,3,5)	0,612
	3 (1,2,3)	0.736
Satisfaction job	3	0.782
Satisfaction region	9	0.681
Intrapreneurship	9	0.844

6.3 Normality

Table 5. Shapiro-Wilk test for testing normality of the dependent variables.

Dependent variable	p-value
Talent	<0,001*
Technology	<0,001*
Tolerance	<0,001*
Satisfaction region	0,396
Satisfaction job	<0,001*
Intrapreneurship	0,173

* significant ($p < 0.05$)

Table 6. Shapiro-Wilk test for testing normality of the dependent variables per group.

Independent variable	Group	Satisfaction Region	Intrapreneurship
Gender	Female	0.474	0.010*
	Male	0.41	0.614
Marital status	Not married	0.484	0.241
	Married or living together	0.632	0.125
Kids	Yes	0.72	0.278
	No	0.32	0.014*
HEI	Hasselt University	0.639	0.018*
	University College PXL	0.541	0.962
Workplace	HEI	0.325	0.138
	Incubator	0.009*	0.777
Creative Class	Creative professional	0.404	0.931
	Creative core	0.29	0.026*
Age	21-30	0.843	0.081
	31-40	0.061	0.735
	41-50	0.79	0.817
	>50	0.365	0.808
Education	No academic or college degree	0.158	0.208
	Bachelor	0.376	0.312
	Master	0.242	0.457
	PhD	0.818	0.128
Income	< 5000	0.072	0.058
	5001-7500	0.979	0.549
	> 7500	0.191	0.807
Company size	1-10 employees	0.066	0.819
	11-49 employees	0.267	0.51
	50-250 employees*	0.389	0.266
	>250 employees	<0.001*	0.463
Incubator	Corda Campus	0.092	0.156
	BioVille	0.676	0.609
	IncubaThor + C-mine Crib	0.394	0.567
Type of employment	Employee	0.411	0.029*
	Entrepreneur	0.021*	0.265
	Civil Servant	0.346	0.508

* significant ($p < 0.05$)

6.4 T-tests

Table 7. T-tests for comparing two groups.

Dependent variable	Independent variable	Levene's test p-value	T	Df	Two-sided p-value	Effect size Cohen's D
Satisfaction region	Gender	0,278	0.288	185	0.774	
	Marital status	0,160	-0.895	187	0.372	
	Kids	0,100	1.274	187	0.204	
	HEI	0,853	0.243	132	0.809	
	Creative Class	0.733	3.171	153	0.002*	0.573
Intrapreneurship	Marital status	0.123	1.327	187	0.186	
	Workplace	0.644	-3.686	187	<0.001*	-0.597

Table 8. Results of significant differences from t-test.

Dependent variable	Independent variable	Group	Mean	St. Dev
Satisfaction region	Creative Class			
		Creative professional	3.788	0.424
		Super creative core	3.544	0.428
Intrapreneurship	Workplace			
		HEI	3.454	0.583
		Incubator	3.793	0.52

Table 9. ANOVA tests for comparing more than two groups.

Dependent variable	Independent variable	Levene's test p-value	Anova F	Df between groups	Df within groups	Significance	Effect size η^2
Satisfaction region	Incubator	0.103	1.42	2	50	0.251	
	Age	0.179	0.31	3	185	0.818	
	Education	0.502	1.144	3	185	0.332	
	Income	0.797	2.36	2	159	0.098	
Intrapreneurship	Incubator	0.085	0.159	2	50	0.853	
	Age	0.897	3.686	3	185	0.013*	0.056
	Education	0.715	0.18	3	185	0.91	
	Income	0.718	8.819	2	159	<0.001*	0.1
	Company Size	0.722	3.437	3	185	0.018*	0.053

Table 10. Post-hoc tests ANOVA.

Dependent variable	Independent variable	Group	Mean	St. Dev	Group comparison	P-value post hoc test	95% Confidence interval
Intrapreneurship	Age						
	21-30	3.411	0.613	>50	0.049*	-0.663	-0.001
	31-40	3.443	0.553				
	41-50	3.672	0.563				
	>50	3.743	0.571				
Intrapreneurship	Income						
	Up to 5000	3.451	0.578	>7500	<0.001*	-1.209	-0.333
	5001-7500	3.571	0.537	>7500	0.003*	-1.109	-0.193
	>7500	4.222	0.444				
Intrapreneurship	Company Size						
	1-10	3.83	0.521	>250	0.012*	0.06	0.667
	11-49	3.646	0.565				
	50-250	3.528	0.467				
	>250	3.466	0.599				

Table 11. Mann-Whitney U tests for non-normally distributed variables with only 2 groups.

Dependent variable	Independent variable	Mann-Whitney U	Z	Significance (2-tailed)
Talent	Gender	3378.5	-2.579	0.010*
	Marital status	3294.5	-1.555	0.12
	Kids	3999.5	-0.75	0.453
	HEI	2168.5	-0.284	0.776
	Workplace	2433.5	-3.473	<0.001*
	Creative Class	1573.5	-3.226	0.001*
hline Technology	Gender	3861.5	-1.265	0.206
	Marital status	3156	-1.953	0.051
	Kids	3928.5	-0.944	0.345
	HEI	1927.5	-1.362	0.173
	Workplace	2726.5	-2.604	0.009*
	Creative Class	1708	-2.685	0.007*
hline Tolerance	Gender	4215.5	-0.304	0.761
	Marital status	3638.5	-0.571	0.568
	Kids	4160.5	-0.315	0.753
	HEI	2213.5	-0.084	0.933
	Workplace	3462	-0.426	0.67
	Creative Class	2179.5	-0.79	0.43
Satisfaction job	Gender	3905	-1.175	0.24

Dependent variable	Independent variable	Mann-Whitney U	Z	Significance (2-tailed)
	Marital status	3405.5	-1.267	0.205
	Kids	4177	-0.274	0.784
	HEI	2219	-0.059	0.953
	Workplace	2887.5	-2.18	0.029*
	Creative Class	1915	-1.9	0.057
Satisfaction region	Workplace	2660.5	-2.802	0.005*
Intrapreneurship	Gender	2474	-5.041	<0.001*
	Kids	4032	-0.662	0.508
	HEI	1908.5	-1.447	0.148
	Creative Class	1427.5	-3.814	<0.001*

Table 12. Results of significant differences from Mann-Whitney U test.

Dependent variable	Independent variable	Group	Mean Rank
Talent	Gender		
		Female	82.72
		Male	103.2
		Workplace	
		HEI	86.39
		Incubator	117.08
		Creative Class	
		Creative professionals	97.04
		Creative core	70.92
Technology	Workplace		
		HEI	88.55
		Incubator	111.56
		Creative Class	
		Creative professionals	93.83
		Creative core	72.12
Satisfaction job	Workplace		
		HEI	89.73
		Incubator	108.52
Satisfaction region	Workplace		
		HEI	88.06
		Incubator	112.8
Intrapreneurship	Gender		
		Female	71.95
		Male	111.98
		Creative Class	

Dependent variable	Independent variable	Group	Mean Rank
		Creative professionals	100.51
		Creative core	69.63

Table 13. Kruskal-Wallis tests for non-normally distributed variables with more than 2 groups.

Dependent variable	Independent variable	Kruskal-Wallis H	Df	Significance
Talent	Incubator	0.988	2	0.61
	Age	5.573	3	0.134
	Education	1.384	3	0.709
	Income	4.005	2	0.132
	Company size	12.057	3	0.007*
	Employment type	12.849	2	0.002*
Technology	Incubator	1.445	2	0.485
	Age	5.989	3	0.112
	Education	3.11	3	0.375
	Income	0.488	2	0.783
	Company size	6.169	3	0.104
	Employment type	3.262	2	0.196
Tolerance	Incubator	0.442	2	0.802
	Age	4.31	3	0.23
	Education	1.267	3	0.735
	Income	6.803	2	0.033*
	Company size	0.313	3	0.957
	Employment type	5.915	2	0.052
Satisfaction job	Incubator	0.006	2	0.997
	Age	5.57	3	0.135
	Education	0.309	3	0.958
	Income	3.355	2	0.187
	Company size	7.22	3	0.065
	Employment type	14.445	2	<0.001*
Satisfaction region	Company size	9.018	3	0.029*
	Employment type	1.37	2	0.504
Intrapreneurship	Employment type	21.739	2	<0.001*

Table 14. Post-hoc tests Kruskal-Wallis.

Dependent variable	Independent variable	Group	Mean rank	Group comparison	Adj. sig.
Talent	Company size				
		1-10	119.9	>250	0.012*
		11-49	101.45		
		50-250	113.03		
		>250	85.4		
	Employment type				
		Employee	82.47	Entrepreneur	0.001*
		Entrepreneur	122.72		
		Civil Servant	92.4	Entrepreneur	0.050*
Tolerance	Income				
		Up to 5000	76.94	>7500	0.030*
		5001-7500	83.83		
		>7500	116.4		
Satisfaction job	Employment type				
		Employee	80.58	Entrepreneur	0.001*
		Entrepreneur	120.44		
		Civil Servant	98.18		
Satisfaction region	Company size				
		1-10	116.37	/	
		11-49	106.64		
		50-250	72.66		
		>250	90.67		
Intrapreneurship	Employment type				
		Employee	82.35	Entrepreneur	0.000*
		Entrepreneur	134.11		
		Civil Servant	86	Entrepreneur	0.000*

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