The Influence of Income Level on Creativity: An Experimental Study

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Abstract
Since the 1980s, the related research of creativity has become the focus of attention in the field of management. With the presentation, enrichment, and development of the construal level theory, it provides a new perspective for the study of creativity. Some studies have been made to explore the relationship between the three dimensions of psychological distance, time distance, spatial distance, and social distance. The purposes of this study are two: first, to verify the impact of income level on college students' creativity; second, try to expand the dimension of psychological distance, put forward the concept of income distance, and try to explore whether there is a construal level of the intermediary variable acting on the level of income and creativity. Based on a questionnaire survey of college students, we analyze the collected data and found that starting up the psychological state of poor or wealthy college students had a significant impact on their level of creativity. That is, there is a significant positive relationship between income level and creativity; In addition, we also introduced the construal level as a mediating variable in the study, but the results show that the construal level has no intermediary effect between income level and creativity.

Keywords
Creativity; Income Level; Construal Level.

1. Introduction
Looking at the social system, we can find that under any social system, there is a similarity: there is a large gap between people and people or between groups in income level. In many cases, the income level is only a quantitative external identity, which may not have a great impact on the individual's internal characteristics. But in fact, money sometimes makes some of the individual's qualities invisible to the general people. We can imagine that when an individual has more material resources, he will have more control and freedom over things. He has enough conditions to try different things, could allow more opportunities to try more times, and could enjoy better learning environment conditions and master more knowledge. With the wisdom and abstract thinking ability of the past and the continuous innovation ability, it can even walk in the forefront of the times, and help the development of the organization and even the society. Therefore, this paper aims to study the relationship between the level of economic income and creativity and whether the level of economic income has an important impact on individual creativity. In addition, according to the theory of construction level, high-level individuals often show abstract thinking ability, while those with low construction level use concrete thinking to think more about problems. Therefore, we also try to explore whether there is a relationship between the level of economic income and the level of construction and creativity, and whether there is a construction level between the level of economic income and creativity.
2. Theory and Hypotheses

2.1. Income Level and Creativity

Economic income is directly linked with money. To a large extent, money symbolizes different kinds of resources, such as power and freedom. Starting individuals’ perception of the concept of money can make them feel that they have obtained resources, and then they can have a sense of control and satisfaction. In addition, some researchers have proposed that money should be regarded as a kind of social resource, which can make individuals free and independent, less dependent on social support, and even tolerate social exclusion. When dealing with complex problems, they can show more perseverance, determination, and confidence, thus stimulating individual creativity. Burroughs et al. (2011) found in the creative experiment that giving subjects a certain amount of money reward can effectively improve their creativity. Hansen et al. (2012) found that starting the subjects’ perception of (a lot of) money can make the individual's cognition of things more comprehensive and abstract. For example, in an item classification experiment designed by them, compared with the control group, the experimental group with money factor used less number of categories to divide items in the task, which made the scope of classification more extensive and the level of abstraction higher. The purpose of this study is to explore the relationship between people’s income level and individual creativity. Generally speaking, people’s economic income can be divided into high and low, and whether the degree of different individuals' domination of money will affect the level of personal creativity to a certain extent is the focus of this paper. Therefore, we propose hypothesis 1:

H1: the higher the level of individual income, the stronger the creativity.

2.2. Construction level, Income level and Creativity

Construction level theory (CLT) claims that psychological distance can change people’s reaction to future events by changing the way people represent these events in their minds. The further the psychological distance, the more likely people are to represent the event according to the general characteristics (high level of construction) that can reflect the essence of the event rather than the specific and secondary details (low level of construction). Psychological distance refers to an individual’s perception of the distance in time and space and the probability of occurrence of the described event or behavior with "oneself", "now" and "here" as the control point. Psychological distance can be divided into four dimensions: time distance, social distance, spatial distance and hypothesis or authenticity. This theory originated from Liberman and trope’s research on the relationship between time distance and interpretation level time interpretation theory. The theory holds that for future events, people tend to use abstract, core, and superior representations to explain events (high-level construction); For recent future events, people are more likely to use specific, unimportant, and subordinate features to explain (low-level construction). Liberman and trope (1998) divide the construction level into high-level construction and low-level construction according to the degree of people’s schematization of event information, corresponding to relatively abstract, important, simple, goal related and de background psychological representation and relatively specific, secondary, complex, goal independent and background psychological representation respectively. However, in different research situations, researchers also define the construction level differently. For example, Liberman et al. (2002) changed high-level explanation and low-level explanation into wide classification and narrow classification according to classification width. Nussbaum et al. (2003) believed that trait attribution constituted high-level construction, while situational attribution constituted low-level construction. According to different ways of thinking, Förster et al. (2004) regarded abstract thinking as high-level construction and concrete thinking as low-level construction. Fujita et al. (2008) took evaluation and preference as the background, using the desire of things to represent the high level of construction, and the feasibility to represent the low level of construction.
Scholars focus on the research trend and development of the theory of construction level, from the early exploration of the underlying psychological mechanism of the change of construction level to the specific application-oriented research of the theory, and pay more and more attention to its development and application in breadth. In the sub study of interpersonal relationship of social cognition, the relationship between sense of power and psychological distance has attracted close attention of scholars in recent years. Some researchers have found that high sense of power will make individuals more likely to realize that they have a longer social distance from others, and make their own cognitive processing more abstract and pay more attention to the main characteristics and core characteristics of things. In other words, high sense of power is related to high-level construction (Smith et al., 2006; Lammers et al., 2012). In addition, some researchers point out that individuals with high sense of power have a higher level of construction, and use more abstract, more positive, and more deterministic words. In addition to theoretical research, there are also many applied research results related to creativity. Förster et al. (2004) first studied the relationship between time distance dimension and creativity, and found that compared with the short-term future, the long-term future is more conducive to the generation of creative ideas. Jia et al. (2009) also came to a similar conclusion by studying the relationship between spatial distance dimension and creativity: compared with the near condition, the creativity score of the subjects in the far condition was higher. Polman et al. (2011) opened a study on the relationship between social distance and creativity. They found that making decisions for others is more creative. At the same time, in the existing research, many literatures mentioned that the future research direction should appropriately broaden the dimension of psychological distance. For example, Fiedler (2007) introduced the concept of information distance. He believes that if consumers have more information related to products, their information distance will be smaller. This paper attempts to broaden the scope of psychological distance and put forward the variable of income distance in order to explore the relationship between people’s income level and individual explanation level. Therefore, we propose hypothesis 2:

H2: Construction level plays a mediating role in the relationship between individual income level and creativity. That is, the higher the level of individual income, the higher the level of construction and creativity.

3. Method

3.1. Sample and Procedure

The paper questionnaire was used in this study. According to the priming experiment, the questionnaire was divided into two groups: priming poverty group and priming affluence group. The number of poverty group questionnaires was 100, and 99 questionnaires were collected; The number of questionnaires in the start-up group was 120, and 111 were returned. The total recovery rate was 95.45%. After screening and analyzing the questionnaire, we judged the completion of the questionnaire. 42 questionnaires were excluded. 70 valid samples were retained in the poor group and 98 valid samples were retained in the rich group. A total of 168 valid samples were retained, including 30 males and 135 females, of which 3 were unmarked. All the subjects had not done the same or similar questions before, and all of them were completed voluntarily.

3.2. Measure

This questionnaire consists of five questions. The first question is divided into two groups according to the difference of priming test, namely, priming poor group and priming rich group. The purpose of starting the poor group is to produce a relatively poor psychological state after the subjects read the materials; Starting the rich group is to make the subjects have a relatively rich psychological state( Please refer to the appendix for details). The second question is to measure the importance of money, a total of 9 questions, using five-point scoring method. The
third question uses the behavior recognition scale (BIF) developed by Vallacher and Wegner (1989). There are 25 sub questions in total, and each sub question has two options, representing high recognition behavior and low recognition behavior respectively. We use the method of "1" for high recognition and "0" for low recognition, which has good reliability and validity and is widely used. The fourth question is the experiment of Remote Association of creativity, with a total of 30 small questions. The questions in this part are from the question bank of remote association test, from which we randomly selected 30 questions as the content of this scale. The requirement of this question is that according to the three words presented in each question that seem to have no connection with each other, the subjects can think of a word that has certain connection with the three words (similar or opposite meaning, similar, etc.). For example, for the three words of reflection, mercury and the same, the correct associative word is: mirror. This question has a clear answer. The method of "1" for correct answer and "0" for wrong answer is used for statistics. The fifth question is personal basic information, which is mainly about the control variables related to the research, such as gender and grade.

3.3. Analysis Method
In this study, SPSS software was used for data analysis and processing. The main analysis method is independent sample t test. Firstly, the independent sample T-test is used to verify the relationship between the independent variable income level and the dependent variable creativity. Then independent sample T-test is used to analyze the influence of existing variables on creativity and the interaction between them, such as the relationship between income level and the importance of money, the relationship between gender and the importance of money, to exclude the influence of control variables on creativity. Finally, independent sample t-test is used to explore the relationship between income level, construction level and creativity.

4. Result
4.1. The relationship between income level and creativity
First, in order to verify the effectiveness of the start-up test, we analyzed the effectiveness of the start-up state of the subjects. According to the data in Table 1 and 2, it was proved that the difference between the two start-up States was significant (P = 0.000 < 0.05), so we determined that the start-up test was successful. Then, according to the experimental data, we can learn that under the condition of poverty, the average score of creativity in the remote association test is 14.3857, the standard deviation is 6.57905, and the standard error of the mean is 0.78635; In the affluent state, the average score of creativity is 16.3571, the standard deviation is 5.28419, and the mean standard error is 0.78635. The significant effect of income level on creativity is 0.033 (< 0.05), so we can conclude that economic income level has a significant positive relationship with creativity. Hypothesis 1 is supported.

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<tbody>
<tr>
<td>-6.859</td>
<td>113.048</td>
<td>0.000</td>
<td>-1.750</td>
<td>0.255</td>
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Table 1. The Effectiveness Analysis of Start-up Test

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<td>-1.97143</td>
<td>0.91662</td>
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</table>

Table 2. The Relationship Between Income Level and Creativity

4.2. The relationship between income level and the importance of money
According to the experimental data, the average score of money importance of the subjects who started poverty was 4.0789, the standard deviation was 0.48511, and the standard error of the
mean was 0.0584; The mean score of the subjects who started the affluence state was 4.0140, the standard deviation was 0.52848, and the standard error of the mean was 0.05422. On the significance level, the p value was 0.423 (> 0.05), that is: whether it is to start the poor state or the rich state, the subjects have the same view on the importance of money and pay more attention to the role of money. In other words, we can conclude that the economic income level of the subjects has no effect on the judgment of the importance of money (or the effect can be ignored).

Table 3. The Relationship Between Income Level and The Importance of Money

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<tbody>
<tr>
<td>0.803</td>
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<td>0.423</td>
<td>0.06487</td>
<td>0.08078</td>
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</tbody>
</table>

4.3. The relationship between gender and the importance of money

After statistical analysis, according to the experimental data, we found that: Boys mean is 3.9963, the standard deviation is 0.55170, the standard error of the mean is 0.10073; The mean value of female students is 4.0526, the standard deviation is 0.50380, and the standard error of mean value is 0.04402. In the significance level test, the p value was 0.588 (> 0.05), that is: both boys and girls recognized the importance of money. Namely, there was no significant correlation between gender and the importance of money, we can infer that different gender had no significant impact on the importance of money.

Table 4. The Relationship Between Gender and The Importance of Money

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<tr>
<td>-0.542</td>
<td>159</td>
<td>0.588</td>
<td>-0.05629</td>
<td>0.10381</td>
</tr>
</tbody>
</table>

4.4. The relationship between income level and construction level

In Table 5, we found that in the state of poverty, the average score of the construction level was 38.4091, the standard deviation was 2.03793, and the standard error of the mean was 0.25085; In the state of starting affluence, the average score of the subjects is 38.2083, the standard deviation is 2.20008, and the standard error of the average is 0.22454. The significance of economic income level to construction level is 0.557 (> 0.05). Therefore, we conclude that there is no significant relationship between construction level and income level. Hypothesis 2 is not valid in this study.

Table 5. The Relationship Between Income Level and Construction Level

<table>
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<th>DF</th>
<th>Sig.</th>
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<tbody>
<tr>
<td>0.588</td>
<td>160</td>
<td>0.557</td>
<td>2.0076</td>
<td>0.3415</td>
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5. Discussion

5.1. Theoretical implications

According to the above research, we can draw a conclusion: there is a significant positive correlation between economic income and creativity; Construction level has no mediating effect between economic income level and creativity. The main contributions of this paper are as follows: first, this study confirms the significant effect between independent variables and dependent variables, enriches the connotation of creativity research, and provides certain empirical basis for future related research. Second, although there is a big gap between the function of the mediating variables we are trying to construct and the expected hypothesis, it is also an attempt of our research. In a sense, it can still provide us with reference and reflection.
5.2. Practical implications
Our research explored the influence of individual income level on creativity, and proves that there is a significant positive correlation between economic income level and creativity through the experimental scale. For enterprises, the research results of this paper, income level has a significant positive correlation with individual creativity, provide a theoretical basis for enterprises to formulate relevant policies such as salary system. Managers can stimulate employees' creative thinking and find the best way to solve problems by means of money incentive. Especially in some jobs with high demand for creativity, we can take the pay leadership strategy to stimulate their creativity. In addition, when the enterprise carries out relevant publicity through salary survey, it can select some other companies with low salary relative to the same position of the company for comparison, so as to make the employees feel that their income level is not bad, so as to achieve a relatively rich psychological state and better motivate the employees to carry out tasks related to creativity; In terms of training and development, enterprise managers should pay full attention to the psychology of participants in the process of training, and give material rewards to employees with excellent performance in relevant creative tasks, so as to further tap their potential and creativity; In the aspect of employee relationship management, enterprise’s employee relationship management involves many aspects, such as employee's coordination and activities, conflict and communication management, psychological counseling service and so on. Because there is a certain gap between the income levels of different employees, the management should timely understand the psychological status of employees, help them adjust in time, guide employees to work with a more positive attitude, to better carry out creative thinking activities.

5.3. Limitations and future research
In this study, there are many deficiencies in fact. First, the paper questionnaire remote association test is used in the research of creativity. On the one hand, because there are hundreds of questions in the original version of the remote association test, considering the operability of the experiment, we choose 30 of them as the creative part of the test questions. In this process, we have no clear basis for the specific methods of selecting the questions; On the other hand, because the difficulty of the subject should be on the middle side in the pre-filling stage, some of the subjects may have burnout psychology during the formal filling out of the questionnaire, which will affect the overall quality of the questionnaire. Secondly, in the experiment of the rich and the poor, there may be other factors such as the emotion and attitude of the subjects filling in the questionnaire. Finally, although hypothesis 2 of this study is not confirmed in this study, many literature materials (including the review of this paper) show that there is a strong relationship between construction level and creativity. Therefore, we can still try to further analyze and explore the relationship between them in the future. We can also explore the intermediary variables or regulatory factors that may affect the relationship between economic income level and creativity. It can also divide the specific dimensions of creativity, study the impact of the rich and poor on responsible innovation and irresponsible innovation. In the future, the following research can be attempted from these aspects.

6. Conclusion
Our research found that starting up the psychological state of poor or wealthy college students had a significant impact on their level of creativity. That is, there is a significant positive relationship between income level and creativity. In addition, we also introduced the construal level as a mediating variable in the study, but the results show that the construal level has no intermediary effect between income level and creativity.
References


