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# Researching MBTI Personality Types: Project Management Master's Degree Students

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## ABSTRACT

*The purpose of this research study was twofold: 1) to explore if a university's Master of Science in Project Management students' MBTI® personalities differ significantly; 2) to gain a better understanding if the MBTI® personality traits of university students enrolled in a project management degree differ significantly from those MBTI® personalities of the general population. The goodness of fit test was used in order to test the hypotheses that the 177 graduate project management students (observed data) have the same MBTI® distribution as in the general population (expected data). Overall, the present study showed that the student population has 27.18% fewer SF classifications than the general population and 15.99% more NT and 19.15% more ST classifications than the general population. In addition, the study revealed 10.65% fewer extroverts (EJ) and 10.39% more introverts (IJ) than the general population. To determine whether there is a significant difference between the Master of Project Management students' MBTI® distribution, a goodness of fit test was conducted at the .05 level of significance. Based on results, it can be concluded that the MBTI® categories are not equally distributed among the project management students sampled in the study.*

## INTRODUCTION

When it comes to an organization's projects, success is measured by effectively meeting the triple constraints: complete the project on time, according to budget, and within the scope and quality requirements of the clients (PMBOK, 2013). On the surface, this approach seems to concentrate solely on technical aspects of project management. However, performing projects requires people, and therefore, project managers need to have people skills along with technical skills to achieve the project's time, scope, cost, and quality objectives (Hardy-Vallee, 2012). Such people skills include leadership, which is essential to influence key stakeholders, and motivate project team members. In addition, it is often said that project managers spend the majority of their time communicating to stakeholders in a variety of ways (PMBOK, 2013). Far too often, when project managers do not obtain proper communications skills, or take these skills (which include speaking and listening,) for granted, they soon find that they have made a huge error (Dow & Taylor, 2008). Errors in communication are, in turn, said to lead to project failure (Prichard, 2004). Project managers also rely on negotiating skills in order to acquire the right team members and other resources, so that the assigned project may be successful. Likewise, since conflict also is almost certain when dealing with scarce resources, and conflicting scheduling priorities, project managers need to apply effective conflict management skills. Once the project team has the required team members, a project manager applies effective team building skills to develop the project team. Lastly, but ever so importantly, a project manager must be able to display decision-making skills for

project success (PMBOK, 2013). As one can deduce, a project manager needs to have both technical skills along with people skills; both are crucial for project success.

Because the project management field and the technology industry change rapidly, organizations that invest in both “people skills” as well as the management of the triple constraints of project management projects, are more likely to have the greatest chance of achieving project success (Global Knowledge, 2013). In sum, a project manager’s personality must be one that can successfully juggle the classic triangle of deadline, scope, and budget along with soft skills needed for project success that meets stakeholders’ expectations (Lindblad, 2014). It is vital; therefore, that the organization’s leadership select the right personality to manage an organizational project.

We begin our research by accepting the premise that one of the most influential decisions an organization’s leadership can make is designating a project manager with a personality profile that matches the project he or she will be managing (Turner & Muller, 2006). A project manager’s ability and acquired skills to understand, predict, direct, change, and control human behavior are often difficult to develop (Henkel & Wilmoth, 1992). However, these desirable personal attributes of a project manager are helpful for a project’s success in a variety of interpersonal environments, so they must be strongly considered even if the effort proves challenging

Several self-scoring psychological instruments exist that assist people in understanding their own behavioral tendencies as well as the behavioral tendencies of others with whom they come in contact. One of the oldest and widely used self-scoring instruments that seems to have withstood rigors of criticism and that has been popular over the last three decades in personal and management development, is the Myers-Briggs Type Indicator (MBTI®) (Leary, Reilly, & Brown, 2009). The purpose of this present research study was twofold: 1) to explore if a university’s Master of Science in Project Management students’ MBTI® personalities differ significantly; 2) to gain a better understanding if the MBTI® personality traits of university students enrolled in a project management degree differ significantly from those MBTI® personalities of the general population.

## LITERATURE REVIEW

Myers-Briggs Type Indicator® (MBTI®) is based on the theory of psychological type introduced by psychologist Carl Jung. The initial questionnaire grew into the MBTI®, which was first published in 1962 and since that, time has been taken by millions of people worldwide. The Myers-Briggs Type Indicator® (MBTI®) instrument has 16 types that are typically referred to by an abbreviation of four letters; extraversion (E), sensing (S), thinking (T), judgment (J) and their opposites; introversion (I), intuition (N), feeling (F), perception (P). The Myers and Briggs Foundation stresses, though, that there is “no best type” and reminds users that the instrument is both valid in measuring what it is says it does and reliable in that it produces the same results when given more than once (Myers & Briggs, 2014).

In recent years, researchers have used the MBTI® to gain a better understanding of how the instrument can be used in organizations worldwide. Berr, Church and Wacklawski (2000) report that “understanding the interplay between one’s personality preference and one’s day-to-day workplace behaviors is crucial for designing and implementing effective individual development efforts” (p.134). They further explain that there are five specific personality factors that impact on work behavior: neuroticism (the ability to handle stress); extraversion (social skills); openness to new ideas and experiences; agreeableness to others; and conscientiousness. Because the MBTI® is a good measure of one’s tendencies in these areas, it is a useful tool helping employees to work smarter by forming teams that are balanced (Berr, Church & Wacklawski, 2000). In a finding that is relevant to this study, Berr, Church and Wacklawski (2000) also found that certain job types attract individuals with specific MBTI®

types. In their study, senior executives exhibited a “consistent and strong preference for thinking over feeling” (Berr, Church & Wacklawski, 2000, p.141).

Additional research on team performance by Clinebell and Stecher (2003) supports these findings, demonstrating that individual personality types of team members have a “substantial influence on group processes” (p.363). The authors admit that the validity of MBTI has been rightly questioned but nevertheless state that its high level of test-retest stability and its potential for presenting a clearly articulated explanation for communication difficulties make it a worthy managerial tool. They also concur that the most effective teams are those with diversity in personality types, noting that those who have an uneven distribution tend to be inhibited in their efforts to work together and with other teams. For example, a disproportionate number of extraverts might mean that all members are comfortable with speaking while none are adept at listening. Despite that diversity in personality type can lead to conflict, the benefits outweigh the drawbacks (Clinebell & Stecher, 2003).

Clinebell and Stecher (2003) also note that even teams who have been subjected to MBTI® testing tend to work better together, regardless of the diversity of the personality types of the team’s members. Thus, it is possible that just knowing the personality types of colleagues can facilitate communication. Most who underwent the testing reported that it was “helpful to them” when working in groups and that they experienced “increased appreciation of individual differences” (p.369). Ultimately, simply being aware of the preferring communication styles of colleagues can have a positive impact on collaboration.

Gareth English (2006) cites yet another dimension of use for the MBTI®. His claim is that the test can be used in different ways at three different leadership levels. In the first, or foundational stage, of leadership, English claims that the MBTI’s® chief use is in developing self-awareness. Identifying strengths and weaknesses in communication can, of course, positively impact leadership ability. In the mid-level stage, personality typing can help leaders in “highlighting the less-used aspects of their personality” (p.26). Finally, at the last (or “mature”) level, leaders can use the MBTI® to “provide a deeper level of insight” that will help them to achieve their goals of establishing a legacy and finding new sources of inspiration (English, 2006, p.26).

Reynierse, Harker, Fink and Ackerman (2001) find that the MBTI® can be used to predict how a managerial candidate will respond to core organizational values. While this assessment should not be the only tool used for promotion or selection, a candidate’s personality type can tell leaders which values with which he or she will likely be compatible. The authors also claim that knowing the MBTI® categorization of employees and job candidates can contribute to active leadership and can lessen the risk involved in selecting and training new individuals.

In MBTI® research more specific to project managers, a study by Shenhar and Wideman (2000) revealed the ESTJ type is a favored type of project managers. Cohen, Ornoy & Keren, (2013) compared career project managers to the general population and deemed project managers to be either INT or IST types. Mullaly and Thomas (2009) also compared career project manager to the general population’s MTBI classification and found there are significantly more NT (Intuitive, Thinking) type project managers than the general population. Therefore, favoring making decisions on intuition and analysis “let’s look at the possibilities”, and Thinking: “let’s keep this objective”). Gehing (2007) in work dealing with MBTI types and project managers states that of the ten MBTI types that support project leadership, four (specifically INTJ, ENTP, ENTJ, INTJ, and ENTJ) are NT (Intuitive, Thinking) type project managers that support project management leadership competencies. In a study conducted by Latief, Ichsan, & Hadi (2010), results indicated that project managers with the ESTJ profile are predicted to have better project schedule performance.

## METHODOLOGY

### Research and Hypothesis

It is with this premise that the present study undertakes to determine if graduate students enrolled in a project management degree have MBTI® classification that differ from the general population MBTI® classification. Understanding project management students' MBTI® classification would be valuable when establishing various project management curriculum courses and lesson plans. Furthermore, it would enable students to know and understand their own MBTI® classification as an aid in managing projects and the different personalities involved within project teams.

Thus, we began our consideration of project management master degree students' MBTI® classification with two research questions:

- 1) Is there a significant difference between the Master of Science in Project Management students' MBTI® distribution?
- 2) Is there a significant difference between the Master of Science in Project Management students' MBTI® distribution and the general population distribution?

### The hypotheses are as follows:

#### Hypotheses:

##### *Hypothesis #1*

$H_0$ : There is no significant difference among Master of Science in Project Management students' MBTI® personality types.

$H_a$ : There is a significant difference among Master of Science in Project Management students' MBTI® personality types.

##### *Hypothesis #2*

$H_0$ : There is no significant difference between Master of Science in Project Management students' MBTI® distribution and the general population distribution MBTI® (expected data).

$H_a$ : There is a significant difference between the Master of Science in Project Management students' MBTI® distribution and the general population distribution MBTI® (expected data).

### Data Collection

To examine university students enrolled in a graduate project management degree students were requested to complete the Myers-Briggs Personality Inventory survey. Participants answered a short questionnaire which enables classification of a person's traits according to four dichotomous types: (1) Extrovert vs. Introvert (I); (2) Sensing (S) versus Intuitive (N); (3) Thinking (T) versus Feeling (F); and (4) Judging (J); versus Perceiving (P). Thus, a student can be classified in one of the 16 personality categories shown in Table 1.

**Table 1: MBTI personality types. From the Center of Applications of Psychological Type**

Retrieved from <http://www.capt.org/mbti-assessment/type-descriptions.htm>

<p><b>ISTJ</b></p> <p>Sense of responsibility for doing what needs to be done in the here-and-now. Realism, organizing abilities, &amp; command of the facts. Complete tasks thoroughly and with great attention to detail. Logical pragmatists at heart. Make decisions based on experience with an eye to efficiency in all things. Intensely committed to people and organizations. They take their work seriously &amp; believe others should do so as well.</p>	<p><b>ISFJ</b></p> <p>Abiding respect &amp; sense of personal responsibility for doing what needs to be done in the here-and-now. Actions that are of practical help to others are of particular importance. Their realism, organizing abilities, and command of the facts lead to their thorough attention in completing tasks. Bring warmth, caring &amp; depend-ability to all that they do; take work seriously and believe others should do so as well.</p>	<p><b>INFJ</b></p> <p>Attention to the inner world of possibilities, ideas, &amp; symbols. Knowing by way of insight is paramount. Often manifest a deep concern for people &amp; relationships. Often deep interests in creative expression as well as spirituality &amp; human development. While their energy and attention are drawn to the inner world of ideas &amp; insights, they drive for closure &amp; application of their ideas to people's concerns.</p>	<p><b>INTJ</b></p> <p>Attention to the inner world of possibilities, symbols, abstractions, images, and thoughts. Insight in conjunction with logical analysis is the essence of their approach to the world; they think systemically. Ideas are the substance of life and they have a driving need to understand, to know, and to demonstrate competence in their areas of interest. Trust insights, and work intensely to make visions realities.</p>
<p><b>ISTP</b></p> <p>Driving force is to understand how things &amp; phenomena work so they can make most effective use of them. Logical &amp; realistic people, natural trouble-shooters. When not solving a problem, quiet &amp; analytical observers, naturally look for the underlying sense to any facts. Often pursue variety &amp; excitement in hands-on experiences. Have spontaneous side, but 1st show detached pragmatism.</p>	<p><b>ISFP</b></p> <p>For ISFPs the dominant quality in their lives is a deep-felt caring for living things, combined with a quietly playful and sometimes adventurous approach to life and all its experiences. Typically show caring in practical ways, since often prefer action to words. Warmth &amp; concern not expressed openly; show quiet adaptability, realism &amp; spontaneity.</p>	<p><b>INFP</b></p> <p>Dominant quality is a deep-felt caring &amp; idealism about people. Experience intense caring often in relationships with others, but may also experience it around ideas, projects, or involvement they see as important. Often skilled communicators, drawn to ideas that embody concern for human potential. Live in the inner world of values &amp; ideals, but first show adaptability &amp; concern for possibilities.</p>	<p><b>INTP</b></p> <p>Driving force is to understand whatever phenomenon is focus of their attention. Want to make sense of the world -- as a concept -- &amp; often enjoy opportunities to be creative. Logical, analytical, &amp; detached approach; question &amp; critique ideas and events to strive for understanding. Usually have little need to control outer world, or bring order to it, often appear very flexible &amp; adaptable.</p>
<p><b>ESTP</b></p> <p>Dominant quality is their enthusiastic attention to the outer world of hands-on and real-life experiences. Excited by continuous involvement in new activities &amp; pursuit of new challenges. Tend to be logical &amp; analytical in approach to life, acute sense of how objects, events, &amp; people work. Typically energetic &amp; adaptable realists, who prefer to experience &amp; accept life rather than judge or organize.</p>	<p><b>ESFP</b></p> <p>Dominant quality is their enthusiastic attention to the outer world of hands-on and real-life experiences. Excited by continuous involvement in new activities and new relationships. Have deep concern for people, &amp; show caring in warm and pragmatic gestures of helping. Typically energetic &amp; adaptable realists, who prefer to experience &amp; accept life rather than judge or organize it.</p>	<p><b>ENFP</b></p> <p>Dominant quality in their lives is their attention to the outer world of possibilities; they are excited by continuous involvement in anything new, whether new ideas, new people, or new activities. Thrive on what is possible &amp; new, also have deep concern for people. Especially interested in possibilities for people. Typically energetic, enthusiastic people who lead spontaneous, adaptable lives.</p>	<p><b>ENTP</b></p> <p>Driving quality is their attention to the outer world of possibilities; they are excited by continuous involvement in anything new, whether it be new ideas, new people, or new activities. Look for patterns &amp; meaning in world, &amp; often have a deep need to analyze, to understand, &amp; know the nature of things. Typically energetic, enthusiastic people who lead spontaneous, adaptable lives.</p>
<p><b>ESTJ</b></p> <p>Driving force is need to analyze &amp; bring into logical order world of events, people, and things. Like to organize anything that comes into their domain, will work to complete tasks so they can quickly move from one to the next. Sensing orients their thinking to current facts and realities, and thus gives their thinking a pragmatic quality. Take responsibilities seriously and believe others should do so as well.</p>	<p><b>ESFJ</b></p> <p>Dominant quality is an active and intense caring about people and a strong desire to bring harmony into their relationships. Bring an aura of warmth to all that they do, naturally move into action to help others, to organize world around them, &amp; get things done. Sensing orients feeling to current facts &amp; realities, gives feeling a hands-on pragmatic quality. Take work seriously and believe others should as well.</p>	<p><b>ENFJ</b></p> <p>Dominant quality is an active &amp; intense caring about people &amp; strong desire to bring harmony into their relationships. Openly expressive &amp; empathic people who bring warmth to all they do. Intuition orients feeling to new &amp; to the possible, enjoy working to manifest human-itarian vision, or helping others develop potential. Move into action to care for others, organize the world around them, &amp; get things done.</p>	<p><b>ENTJ</b></p> <p>Driving force is need to analyze &amp; bring into logical order world of events, people, and things. Natural leaders who build conceptual models that serve as plans for strategic action. Intuition orients their thinking to the future, and gives their thinking an abstract quality. Will actively pursue and direct others in the pursuit of goals they have set, &amp; prefer a world that is structured &amp; organized.</p>

## Sample Characteristics

One hundred seventy seven project management degree graduate students working in various industries and organizations across the United States to include U.S. military members responded to the survey; therefore, the 177 graduate study students that answered MBTI® questionnaire could be considered a substantial sample of the overall general population. The MBTI® questionnaire was completed between academic terms 2012 and 2014. Respondents' privacy and confidentiality were strictly protected.

## ANALYSIS OF FINDINGS

### Survey Results

#### *Hypothesis #1:*

*H<sub>0</sub>:* There is no significant difference among Master of Science in Project Management students' MBTI® personality types.

*H<sub>a</sub>:* There is a significant difference among Master of Science in Project Management students' MBTI® personality types.

A Chi-Square Goodness-of-Fit Test with equal frequencies was applied to the project management students' MBTI® data in Table 3. The hypothesis test was broken into two parts in order to compare observed and expected values from the MBTI® designators IJ through EJ (H2a), and NT through ST (H2b). (Table 2)

The test was conducted at the .05 level of significance, and the null hypothesis was rejected. Based on this result, it can be concluded that the MBTI® categories are not equally distributed among the project managers sampled in the study.

**Table 2: Graduate Student MBTI Type Summary**

Graduate Project Management Student Summary					Chi Square	H1
MBTI Type	Sample Frequency	Expected Frequency	Sample Proportion	Population Proportion		
IJ	73	44.25	41.24%	29.00%	18.68	
IP	44	44.25	24.86%	21.90%	0.00	
EP	33	44.25	18.64%	24.10%	2.86	
EJ	27	44.25	15.82%	25.20%	6.72	
Totals	177	177.00	100.00%	100.00%	28.27	3 df
					P	0

#### *Hypothesis #2*

*H<sub>0</sub>:* There is no significant difference between Master of Science in Project Management students' MBTI® distribution and the general population distribution MBTI® (expected data).

*H<sub>a</sub>:* There is a significant difference between the Master of Science in Project Management students' MBTI® distribution and the general population distribution MBTI® (expected data).

Hypothesis #2 states that there is no significant difference between the Master of Science in Project Management students' MBTI® distribution as in the general population (expected data). The goodness of

fit test was used in order to test the hypotheses that the 177 graduate students (observed data) have the same MBTI® distribution as in the general population (expected data).

In Table 3, we compare the classification type distribution in the survey with the same distribution estimated by the Myers-Briggs Foundation data that was compiled from a variety of MBTI results between 1972 and 2002, including the data bank at the Center for Application of Psychological Type; CPP, Inc.; and Stanford Research Institute (SRI). Table 3 shows major gaps in the SF (Sensing, Feeling) and NT (Intuitive, Thinking) columns. Overall, the present study student population has 27.18% fewer SF classifications than the general population. Additionally, the present study student population had 15.99% more NT and 19.15% more ST classifications than the general population. In addition, of the judgment (J) types in the first and fourth rows, the survey has 10.65% fewer extroverts (EJ) and 10.39% more introverts (IJ) than the general population.

The mean of all responses to each question from each survey respondent was calculated and the goodness of fit test was used in order to test the hypotheses that the 177 graduate students (observed data) have the same MBTI® distribution as in the general population (expected data).

**Table 3: My MBTI Personality Types. From the Myers & Briggs Foundation. Retrieved from <http://www.myersbriggs.org/my-mbti-personality-type/my-mbti-results/how-frequent-is-my-type.asp>**

Survey Population vs. Total Population					
Description	Breakdown by Type				Total
IJ	INTJ	INFJ	ISFJ	ISTJ	IJ
Empirical PM %	8.47%	3.39%	5.65%	23.73%	41.24%
Population %	2.10%	1.50%	13.80%	11.60%	29.00%
Difference	6.37%	1.89%	-8.15%	12.13%	12.24%
IP	INTP	INFP	ISFP	ISTP	IP
Empirical PM %	7.34%	1.69%	4.52%	11.30%	24.86%
Population %	3.30%	4.40%	8.80%	5.40%	21.90%
Difference	4.04%	-2.71%	-4.28%	5.90%	2.96%
EP	ENTP	ENFP	ESFP	ESTP	EP
Empirical PM %	4.52%	3.39%	2.26%	8.47%	18.64%
Population %	3.20%	8.10%	8.50%	4.30%	24.10%
Difference	1.32%	-4.71%	-6.24%	4.17%	-5.46%
EJ	ENTJ	ENFJ	ESFJ	ESTJ	EJ
Empirical PM %	5.65%	1.13%	3.39%	5.65%	15.82%
Population %	1.80%	2.40%	12.30%	8.70%	25.20%
Difference	3.85%	-1.27%	-8.91%	-3.05%	-9.38%
Total	NT	NF	SF	ST	Total
Empirical PM %	25.99%	9.60%	15.82%	49.15%	100.00%
Population %	10.00%	17.00%	43.00%	30.00%	100.00%
Difference	15.99%	-7.40%	-27.18%	19.15%	0.00%

The chi square test was selected to determine if the surveyed project management degree students responded in a way that was significantly different from the expected value of responses based upon the known population proportion of MBTI® categories. The hypothesis test was broken into two parts in order to compare observed and expected values from the MBTI® designators IJ through EJ (H1a), and NT through ST (H1b) (Table 3).

**Table 4: Survey and Population Type Summary**

Survey and Population Type Summary				
MBTI Type	Sample Frequency	Expected Frequency	Sample Proportion	Population Proportion
IJ	73	51.00	41.24%	29.00%
IP	44	39.00	24.86%	21.90%
EP	33	43.00	18.64%	24.10%
EJ	27	44.00	15.82%	25.20%
Totals	177	177.00	100.00%	100.00%

Chi Square	H1a
9.49	
0.64	
2.33	
6.57	
19.02	3 df
P	0

Survey and Population Type Summary				
MBTI Type	Sample Frequency	Expected Frequency	Sample Proportion	Population Proportion
NT	45	44.25	26%	12%
NF	17	44.25	10%	12%
SF	28	44.25	16%	62%
ST	87	44.25	49%	63%
Totals	177	177.00	100%	100%

Chi Square	H1b
0.01	
16.78	
5.97	
41.30	
64.06	3 df
P	0

The p value for the H1a chi square goodness of fit test was approximately zero for H1a and H1b. Therefore, the null hypothesis was rejected. There is a statistically significant difference between Master of Project Management students' MBTI scores and the expected value based on known population proportions.

### SUMMARY

This present research study was designed as an exploratory measure using the MBTI® instrument with one hundred seventy five university students enrolled in a project management graduate degree responded to the instrument. Our study results show project management graduate students exhibit a distribution pattern of MBTI® personality types that differs from that which has been reported in previous studies of the general population.

In addition, there are significantly more NT (Intuitive, Thinking) and ST (Sensing, Thinking) type students than their percentage in the general population. The NT students base their decisions on intuition and sensory data as well as analysis. This is expected, because project managers must make decisions in the face of ambiguity and uncertainty and have to rely on intuition which lacking some of the facts. Conversely, there are significantly fewer students of the SF (Sensing, Feeling) type than those found in the general population. These SF students base their decisions on full sensory data while cognizant of compassion and the other human feelings of the peers and subordinates.

In conclusion, project management is aimed at making effective and efficient use of resources to complete a project within time, scope, and cost. Project managers are expected to manage projects and measure their performance and success using the triple constraint of time, cost and scope/quality. While the triple constraint is necessary, projects that are delivered on time, within budget and meet scope specifications may not necessarily be perceived to be successful by key stakeholders. Therefore, successful projects also require project managers to demonstrate and apply soft skill such as leadership, communication, team building, negotiation, and decision-making. The purpose of this research study was twofold: 1) to explore if a university's Master of Science in Project Management students' MBTI® personalities differ significantly; 2) to gain a better understanding if the MBTI® personality traits of university students enrolled in a project management degree differ significantly from those MBTI® personalities of the general population.

Ideally, the results of this present study will help university project management program chairs and students to take a more positive approach to understanding MBTI® classifications and how they relate to project management. The MBTI® can be used by project management degree graduate students to help them better understand how their classification type relates to traits required for effective project management. Additionally, educational institutions can use this information when developing project management courses and lesson plans to assist students in assessing their natural fit in project management and in developing project management teams. However, the authors of this present study do not believe or suggest that MBTI® classification should be used for excluding students from project management educational programs. As stated in the code of ethics of the Center for Applications of Psychological Type-CAPT (2010, Interpreting MBTI® results, para. 3): "One should not state or imply that type explains everything. Type does not reflect an individual's ability, intelligence, and likelihood of success, emotions, or normalcy. Type is one important component the complex human personality."

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