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Subjective Study of Communication based on Blood types

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Abstract

Background/Objectives: The purpose of the study was to identify the perceptions of blood types using Q methodology and explore a direction for application of blood type marketing in daily life.

Methods/Statistical analysis: We used subjective analysis for this purpose and examined 1) what are the types of blood perceptions? 2) what are the homogeneous characteristics and implications between each type? We composed a Q concourse through interviews with university students to write Q statements, selected a P sample, and used Q-sort obtained from the sorting process to analyze it through Q-factor analysis in the PC QUANL program.

Findings: Q methodology was used to examine the subjective tendency of blood types. As a result, if quantitative empirical studies and comprehensive comparisons, as well as more in-depth results could be gained to improve perception and improve the policy direction of the study.

As a result of the analysis, two types were identified.

1) Type 1 (N=7): communication type, 2) Type 2 (N=5): care type.

Improvements/Applications: Q methodology revealed two types of communication perceptions including communication type and care type.

***Keywords*:** Communication, Blood types, Q methodology, Subjectivity study, University students

1. Introduction

Q-methodology developed by William Stephenson, a psychologist, is a research method to seek the correlations among people on their subjective features. It is an analysis method to measure them objectively by factor analysis and integrated analysis. Q-methodology can identify subjective and psychological elements such as personal feeling or attitude, and express the person's thinking frankly. Hence, this study was aimed to analyze the perception types on the images of blood.

Research topic 1: What are the perceptions of university students regarding blood type on communication?

This study aims to identify what types of perceptions in university students have the blood types unlike the analog era in the past, which characteristics each of the types have, and how the implications for these characteristics relate to the university students' current perception of blood type on communication.

Research topic 2: What are the homogeneous characteristics and meanings between each of these types?

Next, in contrast to the characteristics of each type identified above, we examine what characteristics match in the statements, thereby identifying similarities between the analyzed implications for each type. Through this, we seek to examine how the intentions of a few respondents, which is a characteristic of the Q methodology, and the internal subjective images appear [1, 2].

With the research questions, this study aims to identify the characteristics of university students regarding the blood types on communication. By analyzing the differences according to the characteristics of each type, we hope to enable university students to change their communication types and improve related research in the future [3, 4]. The multimedia showed the variety of personal traits by blood type. The personality or character by blood types has engaged people's attention for a long time. The history of blood type began from the transfusion and the mixture of blood cells are thought to change the personality [5, 6].

The blood typing was originated from eugenics which was represented by Francis Galton in 1883. The Japanese psychologist, Nomi Masahiko published the book on blood typing and personality. Masahiko described the blood types and personality as follows [7].

Type O persons are apt to be concerned with human relationship and show a strict pecking order.

Type A persons are apt to be concerned with human relationship and they tend to decide and act within human behavior framework. Type B persons tend to lay emphasis on the truth rather than pecking order and human relationship. Type AB persons make themselves present, make themselves ready, and make themselves strong. Based on the theory of Nomi Masahiko, "Blood type human study" became the best seller in Japan in 1999. The book was translated into Korea, and a number of Koreans also have much concern in blood types. Blood types are applied to lingerie marketing and perfume purchase. The type of lingerie and perfume can be influenced by the personality and character.

This study was done through literature survey and the construction of the Q statements was described on the basis of objective value analysis of blood types.

2. Materials and Methods

This study used Q methodology as we felt that existing methods had several limitations in measuring in-depth matters regarding university students' perception of blood types. The analysis was conducted by classifying cards in the form of statements [8, 9]. We composed a Q concourse through interviews with university students to write Q statements, selected a P sample, and used Q-sort obtained from the sorting process to analyze it through Q-factor analysis in the PC QUANL program [10, 11].

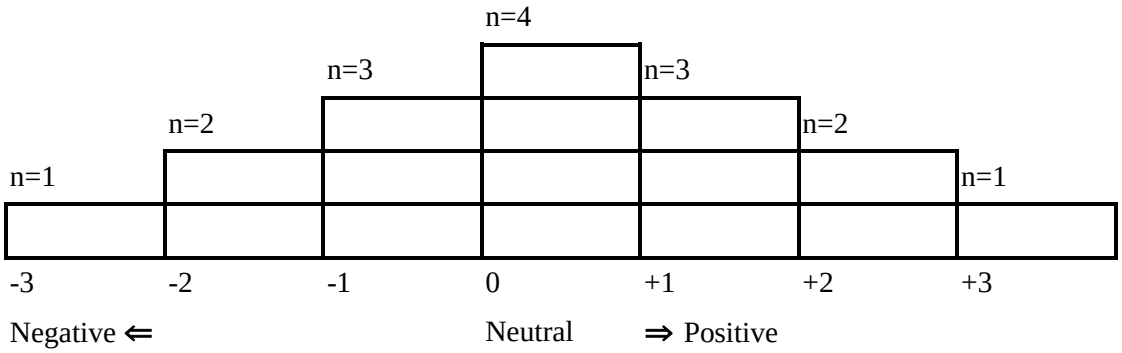

Figure 1. Score distribution to determine the Q-sort for analyzing by PC QUANL program.

Table 1: Initial Set of features used for the experimentation

Distribution	-3	-2	-1	0	1	2	3
Score	1	2	3	4	5	6	7
Number of statement	1	2	3	4	3	2	1

2.1. *Construction of Q-sample and P-sample*

The Q sample for this study consisted of statements including communication value system of the university system. Through in-depth review of related literatures and interviews with the university

students, a total of twenty two Q population was selected. The most representative Q statements were concentrated on sixteen statements. The sixteen statements were constructed through positive, neutral, and negative answers to keep balance features. Q methodology is not inter-individual differences but intra-individual differences in significance, so Q methodology is not influenced by the number of P samples. The purpose of the Q methodology is not dependent on the characteristics of the samples, so the P sample selection does not follow the statistical sampling method [12, 13]. The study subjects were twelve university students according to P sampling selection of Q methodology.

Step 1: Selection of Q-samples

In this study, literature review and individual in-depth interview were conducted to understand how people perceive the images on blood types. The interview was conducted to allow the subjects to be able to express their opinions frankly until no new things were available. The in-depth interview took about 30 to 60 minutes per subject in the quiet place to make comfortable atmosphere. A total of 16 Q-populations were made deleting redundant or ambiguous questionnaires among those extracted from the interview. With consultation from two professors of emergency medical technology who had studied Q-methodology, Q-populations were repeatedly reviewed and questionnaires with similar meaning were categorized. Then, 16 statements were selected as Q-samples upon amendment and supplementation of these questionnaires.

Step 2: Preparation of Q-cards and Q-sample distribution map

Q-cards of the size 5 x 3 cm were prepared with 16 determined statements, and Q-sample distribution map was prepared so as for the study subjects to easily classify them according to the degree of agreement with their opinions.

Step 3: Selection of P-sample

Study subjects of P-sample were 12 university students, and the study was performed upon consents of those who were willing to participate in the study voluntarily after informing of the study purposes and procedures thoroughly.

Step 4: Q-classification

With respect to Q-classification, the subjects were allowed to read the cards of 16 statements and then to classify them as three groups including the most agreed, neutral, and the most disagreed depending on the degree of their opinion agreement. Forced classification was performed in Q-distribution map allocating from the right to the center from the most agreed one. Also, another forced classification was performed from the left to the center from the most disagreed one. The reasons to select the most agreed statement (+3) and the most disagreed one (-3) at both extremes were described and explained in the Q-sample distribution map. After Q-classification, the subjects were allowed to write the card number, which took about 30 to 40 minutes (Table 1).

2.2. *Q sorting and data analysis*

Figure 1 shows the score distribution to determine the Q sort for analyzing by PC QUANL program. Q sorting is the classification of P sampling by the selection of Q samples and P samples. Q sorting is the modeling of self-image of mind on complicated themes and issues. It is integrated into positive, neutral, and negative distribution of Q sort.

After reading the statements, Q sort is recorded from positive, neutral, and negative answers in each distribution diagram. The negative statements were sorted and in-depth interview was recorded. The in-depth interview provided the useful information in Q factor analysis. After explanation of the study, the subjects had signature on the informed consent and filled out the statements.

3. Results and Discussion

Table 2 showed the Eigen value, percentage, and cumulative frequency.

Table 2: Eigen value and the variance

Eigen value	3.8898	1.8156
Percentage	.2431	.1135
Cumulative frequency	.2431	.3566

The results of Q factor analysis conducted to examine the type of subjectivity regarding the perception of firefighters regarding emergency personnel were shown in Table 3.

Table 3: Correlation between the two types

	Type 1	Type 2
Type 1	1.000	-
Type 2	.277	1.000

Table 4: Demographical characteristics of the subjects and average Z scores

Type	ID	Gender	Age	Blood type	College student	Average Z score
Type 1 (N= 7)	1	M	25	B	Yes.	1.5506
	2	M	38	B	Yes.	2.1399
	4	M	26	A	Yes.	0.5131
	5	F	28	B	Yes.	2.0470
	6	F	31	O	Yes.	3.3997
	7	M	22	AB	Yes.	5.8806
	8	M	41	O	Yes.	2.5939
Type 2 (N= 5)	3	F	42	AB	Yes.	1.8298
	9	F	23	A	Yes.	3.5178
	10	M	26	O	Yes.	0.3314
	11	F	43	A	Yes.	4.5819
	12	M	24	A	Yes.	3.1893

Analysis using the QUANL program revealed two types and the cumulative frequency is 35% (0.3566), but the number of people is not meaningful. This indicates that both types are high in “explanatory power” regardless of the number of people. As a result of the analysis, two types were identified in Table 4.

1) Type 1 (N=7): Communication type

2) Type 2 (N=5): Care type

Table 5: The statements and Z score of communication type (type 1)

Q statements	Z score

Positive	16. I am future-oriented when communicating. 11. I am embellished and loquacious when communicating. 9. I act interestedly when communicating.	1.63 1.58 1.51
Negative	15. I am not unfeeling when communicating. 2. I am not emotional when communicating. 14. I am not indecisive when communicating.	-1.16 -1.33 -1.58

(* The statements and Z-scores are the highest scores (±1) in type 1.)

Table 5 showed the statements and Z score of type 1 of communication. In positive statements, the subjects are prone to be future-oriented and loquacious when communicating. In the negative statements, the subjects are prone to be unfeeling, not emotional, and indecisive when communicating.

7 subjects in type 1 had 6 respondents with 1 or more of factor weight, and they showed the most positive agreement on the 16th statement and the most negative agreement on the 14th statement. Therefore, type 1 is actively in agreement with the point that should be close to be future-oriented with high determination power, which means to rely on more positive communication.

Table 6: The statements and Z score of care type (type 2)

Q statements		Z score
Positive	15. I am not unfeeling when communicating. 8. I act cheerfully when communicating. 12. I am not discreet when communicating.	1.59 1.48 1.38
Negative	7. I am self-sacrificing when communicating. 2. I am not emotional when communicating. 6. I seldom quarrel when communicating.	-1.16 -1.27 -1.69

(* The statements and Z-scores are the highest scores (±1) in type 2.)

Table 6 showed the statements and Z scores of type 2 of care type. In positive statements, the subjects are prone to be unfeeling, cheerful, and not discreet when communicating. In the negative statements, the subjects are prone to be self-sacrificing, not emotional, and never quarrelsome when communication.

5 subjects in type 2 had 4 respondents with 1 or more of factor weight, and they showed the most positive agreement on the 15th statement and the most negative agreement on the 6th statement. Therefore, type 2 is actively in agreement with the point that should not be cold but empathize their own opinions more aggressively. From this analysis result, type 2 is considered to be close to ‘considerate type’ that tries to help and take care of others with more humanity mind.

Table 7: Consensus Q-statements & average Z-scores of each type

Item Description	Average Z-Score

11. I am embellished and loquacious when communicating.	1.12
12. I am not discreet when communicating.	1.10
4. I am not considerate when communicating.	0.35
3. I am not intellectual when communicating.	0.32
10. I overreact when communicating.	0.05
1. I am not composed when communicating.	-0.44
5. I am confident when communicating.	-0.66
7. I am self-sacrificing when communicating.	-0.75
14. I am not indecisive when communicating.	-1.21
2. I am not emotional when communicating.	-1.30

In table 7, ten Q-statements were agreed similarly in two types in this study, and five were positive and the other five were negative. From this analysis result, respondents showed the tendency to agree on the 11th statement positively but on the 2nd statement negatively. Respondents agreed the opinion, "depending on the blood type, they showed the tendency to talk a lot expressively during conversation and to be emotional."

4. Conclusion

By Q methodology, subjectivity study on communication perception by blood types revealed two types including communication and care types. This is an exploratory research, and Q-methodology study was categorized as the perceptions on the images of blood types in university students after identifying their subjectivity. Analysis using the QUANL program revealed two types and the cumulative frequency is 35% (0.3566), but the number of people is not meaningful. This indicates that both types are high in "explanatory power" regardless of the number of people. The study revealed communication type and care type. This results can be applied to the blood type psychology and marketing in the future.

5. References

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