

# Effects of Aggressiveness, Waiting Place, and Waiting Time on Waiting Behavior among Female University Students

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The purpose of the present study was to investigate the effects of aggressiveness as a personality factor and both waiting place and waiting time as situational factors on waiting behavior among female university students. Two questionnaires, the Japanese version of the Buss–Perry Aggression Questionnaire and a waiting questionnaire, were administered to 51 female university students. Regarding the waiting questionnaire, the students responded to six hypothetical waiting situations involving different waiting places (a bookshop or a park) and waiting times (5, 30, or 60 minutes) on a 3-point scale (“wait”, “not sure”, “do not wait”). The following four hypotheses were formulated: (1) Aggressiveness influences waiting behavior; (2) The waiting place affects waiting behavior; (3) The waiting time affects waiting behavior; and (4) Associations are evident between anticipated frustration scores, the value of the waiting object, and waiting behavior in subjects with either high or low aggressiveness. Based on the results, hypothesis (1) was not supported, while hypotheses (2) and (3) were supported and hypothesis (4) was partially supported on all subscales of aggression questionnaire.

Key words: waiting behavior, aggressiveness, waiting place, waiting time, cognitive value evaluation model.

To investigate the effects of situational factors on waiting behavior, a series of studies (Mitsutomi & Kobayashi, 2012; Mitsutomi & Kobayashi, 2014; Mitsutomi, Kobayashi, & Fukuhara, 2015) were conducted in which female university students would wait for a waiting object in a variety of hypothetical waiting situations. As a result, a number of the following situational factors were found to affect waiting behavior.

First, regarding an intimacy condition, subjects had higher waiting scores when the degree of intimacy with the waiting object is higher.

Second, regarding the waiting place, a bookshop condition, which is associated with numerous distractions, resulted in higher waiting scores than a park condition, which provides relatively few distractions. Third, regarding waiting time, a longer waiting time resulted in the lower waiting scores.

We interpreted these results using a cognitive value evaluation model. This model assumes that the frustration resulting from waiting leads to a reduced value evaluation of the waiting object by the subject, who consequently stops waiting. Because the present study utilized hypothetical waiting situations, we changed actual frustration to anticipated frustration.

We interpreted the results regarding the intimacy of the waiting object using a cognitive value evaluation model. Subjects with a high degree of intimacy might not anticipate having stronger feelings of frustration compared to those with a low degree of intimacy. Furthermore, the high intimacy condition is traditionally associated with higher values for the waiting object than the low intimacy condition. Therefore, subjects with a high degree of intimacy do not tend to reduce the value of the waiting object compared with subjects with a low degree of intimacy, and thus the high intimacy condition leads to higher waiting scores than the low intimacy condition.

We also used a cognitive value evaluation model to interpret the results regarding the waiting place. Subjects may not anticipate having stronger feelings of frustration in the bookshop condition than in the park condition. Therefore, the value of the waiting object tends to be higher in the bookshop condition than in the park condition; this results in higher waiting scores for the bookshop condition than for the park condition.

In addition, we interpreted the results regarding waiting time using a cognitive value evaluation model. A longer waiting time may lead to stronger feelings of anticipated frustration, and thereby lower value of waiting object. Therefore, longer waiting times might result in lower waiting scores.

Previous studies have primarily focused on situational factors. However, to investigate the way in which personality factors interact with situational factors, it is necessary to examine not only situational factors, such as the level of intimacy with a waiting object, waiting place, and waiting time, but also personality factors that influence waiting behavior.

In this study, we conceptualized aggressiveness as a personality factor and both waiting place and waiting time as situational factors. Next, we investigated the interaction between aggressiveness and both waiting place and waiting time.

We performed exploratory analysis on the interaction effects of aggressiveness, waiting place, and waiting time on anticipated frustration, the value of the waiting object, and waiting behavior. In addition, we formulated the following hypotheses based on a cognitive value evaluation model:

Hypothesis (1): Stronger feelings of aggressiveness lead to stronger feelings of anticipated frustration, which in turn decrease the value of the waiting object; this results in lower waiting scores. Therefore, aggressiveness influences waiting behavior.

Hypothesis (2): The bookshop condition, which is characterized by numerous distractions, leads to weaker feelings of anticipated frustration than the park condition, which is characterized by relatively few distractions, and therefore assigns a higher value to the waiting object than the park condition. This means that the bookshop condition is associated with higher waiting scores. Therefore, the waiting place affects waiting behavior.

Hypothesis (3): A longer waiting time leads to stronger feelings of anticipated frustration, which in turn decrease the value of the waiting object, resulting in lower waiting scores. Therefore, the waiting time affects waiting behavior.

Hypothesis (4): For subjects with either high (H) or low (L) aggressiveness, stronger feelings of anticipated frustration decrease the value of the waiting object, resulting in lower waiting scores. Therefore, associations are evident between anticipated frustration scores, the value of the waiting object, and waiting behavior in both H and L aggressiveness groups.

## **Method**

The experiment featured a  $2 \times 2 \times 3$  factorial design. The first factor was the degree of aggressiveness and consisted of an H and L aggressiveness group. The second factor was waiting place and consisted of either a bookshop or a park setting. The third factor was waiting time and consisted of the following three waiting periods: 5, 30, or 60 minutes. For the H and L aggressiveness groups, we devised six

hypothetical waiting situations using a combination of various waiting places and times.

The Japanese version of the Buss–Perry Aggression Questionnaire (BAQ), which was devised by Ando, Soga, Yamasaki, Shimai, Shimada, Utsuki, Oashi & Sakai (1999), was administered to 51 female university students. The Japanese version of the BAQ incorporates four subscales — irritability, hostility, physical aggressiveness, and verbal aggressiveness—consisting of five, six, six, and five items, respectively.

Students were also administered a waiting questionnaire. The waiting questionnaire consisted of hypothetical waiting situations that students were asked to respond to on a 3-point scale (“wait”, “not sure”, “do not wait”). Each hypothetical waiting situation was described in detail in the questionnaire. The basic form of the waiting situation was as follows: “You have agreed to meet an intimate female friend at a specific place (waiting place). You wait for a specified number of minutes (waiting time), but the intimate female friend has still not arrived.”

We devised six hypothetical waiting situations with various combinations of waiting place (a bookshop or a park) and waiting time (5, 30, or 60 minutes). The waiting place was given at the top of the questionnaire in detail. For the park waiting place, we explained that there was only one bench at which to wait, and for the bookshop, we explained that it contained a large variety of books that subjects could browse and read freely.

The information regarding the waiting place and waiting time was printed in Gothic type. The students were asked to rate their level of anticipated frustration, their value for the waiting object, and their waiting behavior in various hypothetical waiting situations. They were asked to rate their level of anticipated frustration on a 7-point scale. The questionnaire item for anticipated frustration was as follows: “How much do you experience *iraira* (the Japanese word for frustration) when you are kept waiting for (the waiting time: 5, 30, or 60 minutes) in a (waiting place: park or bookshop) by a close female friend?” Anticipate.

The value of the waiting object was also rated on a 7-point scale. The questionnaire item was as follows: “How much would do you dislike a close female friend who made you wait for (the waiting time: 5, 30, or 60 minutes) in a (waiting place: park or bookshop)?”

Finally, waiting behavior was rated on a 3-point scale (“wait”, “not sure”, “do not wait”). The questionnaire item was as follows: “Would you continue waiting for a close female friend after you have already waited

for (the waiting time: 5, 30, or 60 minutes) in a (waiting place: park or bookshop)?

The survey was administered in the students' classroom and took about 30 minutes to complete.

## Results

Analysis was performed for each subscale of Japanese version of the BAQ as follows.

### (1) Irritability

Students with irritability scores above and below the median were classified into an H or L irritability group, respectively. The H irritability group had significantly higher irritability scores than the L irritability group.

Table 1 shows the means of anticipated frustration scores for the H and L irritability groups. Using the anticipated frustration scores as the dependent variable, analysis of variance (ANOVA) was performed as follows: 2 (irritability)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=44.9$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=72.9$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=7.15$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=12.0$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute waiting condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.88$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting place and waiting time ( $F=12.6$ ,  $df=2/98$ ,  $p<0.01$ ) was significant. The effect of the waiting place was analyzed for each waiting time condition. The results indicated that the bookshop condition resulted in significantly lower anticipated frustration scores than the park condition for all three waiting times (5 minutes:  $F=4.48$ ,  $df=1/147$ ,  $p<0.05$ ; 30 minutes:  $F=48.7$ ,  $df=1/147$ ,  $p<0.01$ ; 60 minutes:  $F=44.07$ ,  $df=1/147$ ,  $p<0.01$ ). The effect of waiting time was then

Table 1 The means of the anticipated frustration strength scores for irritability H and L groups

	Irritability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	1.83	1.42	2.26	1.93
Thirty minute	3.54	2.29	3.74	2.52
Sixty minutes	4.29	3.14	4.52	3.33

analyzed for each waiting place condition. The effect of waiting time was significant for both conditions (park:  $F=81.0$ ,  $df=2/196$ ,  $p<0.01$ ; bookshop:  $F=33.99$ ,  $df=2/196$ ,  $p<0.01$ ).

For the park condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=8.45$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=12.49$ ,  $df=196$ ,  $p<0.01$ ), and that the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.05$ ,  $df=196$ ,  $p<0.01$ ). For the bookshop condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=3.88$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=8.23$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute waiting condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.37$ ,  $df=196$ ,  $p<0.01$ ).

Table 2 shows the mean value scores of the waiting object for the H and L irritability groups. Using the value of waiting object as the dependent variable, ANOVA was performed as follows: 2 (irritability)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=8.94$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=39.05$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher values for the waiting object than the other two conditions (30-minute:  $t=4.14$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=8.84$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher values for the waiting object than the 60-minute condition ( $t=4.71$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting place and waiting time ( $F=3.13$ ,  $df=2/98$ ,  $p<0.05$ ) was significant. The effect of waiting place was analyzed for each waiting time condition. The effect of waiting place was significant for the 30- ( $F=10.3$ ,  $df=1/147$ ,  $p<0.01$ ) and 60-minute waiting conditions ( $F=9.05$ ,  $df=1/147$ ,  $p<0.01$ ), and the bookshop condition resulted in higher values for the waiting object than the park condition. The effect of waiting time was then analyzed for each waiting place condition.

In the park condition, the effect of waiting time was significant ( $F=$

Table 2 The means of the values scores for irritability H and L groups

	Irriability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	5.54	5.75	5.59	5.56
Thirty minutes	5.00	5.42	5.15	5.44
Sixty minutes	4.54	4.88	4.82	5.15

35.70,  $df=2/196$ ,  $p<0.01$ ). The 5-minute waiting condition resulted in higher values for the waiting object than the other two conditions (30-minute:  $t=4.69$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=8.45$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute waiting condition resulted in higher values for the waiting object than the 60-minute condition ( $t=3.76$ ,  $df=196$ ,  $p<0.01$ ). In the bookshop condition, the effect of waiting time was significant ( $F=19.09$ ,  $df=2/196$ ,  $p<0.01$ ). The 5- and 30-minute conditions resulted in higher values for the waiting object than the 60-minute condition (5 minute:  $t=6.09$ ,  $df=196$ ,  $p<0.01$ ; 30-minute:  $t=3.98$ ,  $df=196$ ,  $p<0.01$ ).

Table 3 shows the mean waiting scores for the H and L irritability groups. Using waiting scores as the dependent variable, ANOVA was performed as follows: 2 (irritability)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of irritability ( $F=5.28$ ,  $df=1/49$ ,  $p<0.05$ ), waiting place ( $F=9.21$ ,  $df=1/49$ ,  $p<0.01$ ), and waiting time ( $F=34.82$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher waiting scores than the other two conditions (30-minute:  $t=2.32$ ,  $df=98$ ,  $p<0.05$ ; 60-minute:  $t=8.11$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher waiting scores than the 60-minute condition ( $t=5.79$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting time and irritability was significant ( $F=3.94$ ,  $df=2/98$ ,  $p<0.05$ ). The effect of irritability was analyzed for each waiting time condition. The effect of irritability was observed for the 60-minute condition ( $F=12.29$ ,  $df=1/147$ ,  $p<0.01$ ), and the H irritability condition resulted in higher waiting scores than the L irritability condition. The effect of waiting time was significant for each irritability condition (L irritability:  $F=31.04$ ,  $df=2/98$ ,  $p<0.01$ ; H irritability:  $F=7.72$ ,  $df=2/98$ ,  $p<0.01$ ). For the L irritability group, the 5- and 30-minute waiting conditions resulted in higher waiting scores than the 60-minute condition (5-minute:  $t=7.38$ ,  $df=98$ ,  $p<0.01$ ; 30-minute:  $t=5.44$ ,  $df=98$ ,  $p<0.01$ ). For the H irritability group, the 5- and 30-minute conditions resulted in higher waiting scores than the 60-minute condition (5-minute:  $t=3.98$ ,  $df=98$ ,  $p<0.01$ ; 30-minute:  $t=2.65$ ,  $df=98$ ,  $p<0.01$ ).

Table 3 The means of waiting scores for Irritability L and H groups

	Irritability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	2.75	2.92	2.93	2.96
Thirty minute	2.42	2.79	2.74	2.85
Sixty minutes	1.88	2.04	2.33	2.67

## (2) Hostility

Students with hostility scores above and below the median were classified into H and L hostility groups, respectively. The H hostility group had significantly higher hostility scores than the L hostility group.

Table 4 shows the means anticipated frustration scores for the H and L hostility groups. Using anticipated frustration as the dependent variable, ANOVA was performed as follows: 2 (hostility)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting time ( $F=65.03$ ,  $df=2/98$ ,  $p<0.01$ ) and waiting place ( $F=44.8$ ,  $df=1/49$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in lower anticipated frustration than the other two conditions (5-minute:  $t=7.17$ ,  $df=98$ ,  $p<0.01$ ; 30-minute:  $t=11.5$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration than the 60-minute condition ( $t=4.29$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between the waiting place and waiting time was significant ( $F=10.21$ ,  $df=2/98$ ,  $p<0.01$ ). The effect of waiting place was significant for all three waiting time conditions (5-minute:  $F=4.41$ ,  $df=1/147$ ,  $p<0.01$ ; 30-minute:  $F=48.19$ ,  $df=1/147$ ,  $p<0.01$ ; 60-minute:  $F=36.82$ ,  $df=1/147$ ,  $p<0.01$ ). The effect of waiting time was significant for both conditions (park:  $F=69.78$ ,  $df=2/196$ ,  $p<0.01$ ; bookshop:  $F=30.15$ ,  $df=2/196$ ,  $p<0.01$ ).

For the park condition, the 5-minute waiting condition resulted in lower anticipated frustration than the other two conditions (30-minute:  $t=8.37$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=11.60$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration than the 60-minute condition ( $t=3.23$ ,  $df=196$ ,  $p<0.01$ ). For the bookshop condition, the 5-minute waiting condition resulted in lower anticipated frustration than the other two conditions (30-minute:  $t=3.83$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=7.88$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration than the 60-minute conditions ( $t=4.05$ ,  $df=196$ ,  $p<0.01$ ).

Table 4 The means of anticipated frustration strength scores for Hostility H and L groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	2.24	1.67	1.93	1.70
Thirty minutes	3.91	2.52	3.67	2.40
Sixty minutes	4.62	3.57	4.27	3.00

Table 5 The means of value scores for Hostility H and L groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	5.62	5.76	5.53	5.57
Thirty minutes	5.05	5.52	5.03	5.43
Sixty minutes	4.76	5.00	4.73	5.07

Table 5 shows the mean values for the waiting object in the H and L hostility groups. Using the value score for the waiting object as the dependent variable, ANOVA was performed as follows: 2 (hostility)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=9.40$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=28.51$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher value scores for the waiting object than the other two conditions (30-minute:  $t=3.79$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=7.67$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=3.88$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting place and waiting time was significant ( $F=3.40$ ,  $df=2/98$ ,  $p<0.05$ ). Waiting place affected the 30- and 60-minute waiting conditions (30-minute:  $F=13.87$ ,  $df=1/147$ ,  $p<0.01$ ; 60-minute:  $F=5.90$ ,  $df=1/147$ ,  $p<0.01$ ), and a greater effect was observed for the bookshop than the park condition. An effect of waiting time was observed for each waiting place condition (park:  $F=25.47$ ,  $df=2/196$ ,  $p<0.01$ ; bookshop:  $F=15.17$ ,  $df=2/196$ ,  $p<0.01$ ).

In the park condition, the 5-minute waiting condition resulted in higher value scores than the other two conditions (30-minute:  $t=4.62$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=7.15$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=2.52$ ,  $df=196$ ,  $p<0.05$ ). In the bookshop condition, the 5- and 30-minute conditions resulted in higher value scores for the waiting object than the 60-minute condition (5-minute:  $t=5.44$ ,  $df=196$ ,  $p<0.01$ ; 30-minute:  $t=3.84$ ,  $df=196$ ,  $p<0.01$ ).

Table 6 shows the mean waiting scores for the H and L hostility groups. Using the waiting score as the dependent variable, ANOVA was performed as follows: 2 (hostility)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of the waiting place ( $F=10.0$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=31.11$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher waiting scores than the other two conditions (30-minute:  $t=2.33$ ,  $df=98$ ,  $p<0.05$ ; 60-minute:  $t=7.81$ ,  $df=98$ ,  $p<$

Table 6 The means of waiting scores for Hostility H and L groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	2.81	2.90	2.87	2.96
Thirty minutes	2.47	2.81	2.67	2.83
Sixty minutes	2.09	2.33	2.13	2.43

Table 7 The means of anticipated frustration strength scores for Physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	1.68	1.46	2.35	1.86
Thirty minutes	3.77	2.55	3.38	2.31
Sixty minutes	4.73	3.55	4.10	2.96

0.01), and the 30-minute condition resulted in higher waiting scores than the 60-minute condition ( $t=5.47$ ,  $df=98$ ,  $p<0.01$ ).

### (3) Physical aggressiveness

Students with scores above and below the median physical aggressiveness scores were classified into H and L physical aggressiveness groups, respectively. The H physical aggressiveness group had significantly higher physical aggressiveness scores than the L group.

Table 7 shows the mean anticipated frustration scores for the H and L physical aggressiveness groups. Using anticipated frustration as the dependent variable, ANOVA was performed as follows: 2 (physical aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of the waiting place ( $F=40.69$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=85.50$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=7.66$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=13.14$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=5.48$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting time and physical aggressiveness was significant ( $F=7.41$ ,  $df=2/98$ ,  $p<0.01$ ). The effect of the physical aggressiveness was analyzed for each waiting time condition; no effect was observed for any of the waiting time conditions. However, the effect of the waiting time was significant for both physical aggressiveness groups (L group:  $F=71.2$ ,  $df=2/98$ ,  $p<0.01$ ; H group:  $F=$

21.7,  $df=2/98$ ,  $p<0.01$ ).

In the L physical aggressiveness group, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=6.87$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=11.09$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.21$ ,  $df=98$ ,  $p<0.01$ ). In the H physical aggressiveness group, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=3.67$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=7.09$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=3.42$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between waiting place and waiting time was significant ( $F=12.56$ ,  $df=2/98$ ,  $p<0.01$ ). The effect of waiting place was significant for all three waiting time conditions (5 minute:  $F=4.11$ ,  $df=1/147$ ,  $p<0.05$ ; 30-minute:  $F=42.99$ ,  $df=1/147$ ,  $p<0.01$ ; 60-minute:  $F=43.87$ ,  $df=1/147$ ,  $p<0.01$ ), and the bookshop condition resulted in lower anticipated frustration scores than the park condition. The effect of waiting time was significant for both waiting place conditions (park:  $t=92.66$ ,  $df=2/196$ ,  $p<0.01$ ; bookshop:  $t=39.78$ ,  $df=2/196$ ,  $p<0.01$ ).

In the park condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=8.81$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=13.54$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.73$ ,  $df=196$ ,  $p<0.01$ ). In the bookshop condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=4.34$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=9.00$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.67$ ,  $df=196$ ,  $p<0.01$ ).

Table 8 shows the mean values for the waiting object in the H and L physical aggressiveness groups. Using the value scores for the waiting

Table 8 The means of value scores for Physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	5.64	5.77	5.52	5.55
Thirty minutes	4.91	5.41	5.20	5.48
Sixty minutes	4.36	4.96	4.93	5.20

object as the dependent variable, ANOVA was performed as follows: 2 (physical aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting time ( $F=47.86$ ,  $df=2/98$ ,  $p<0.01$ ) and waiting place ( $F=14.10$ ,  $df=1/49$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher value scores than the other two conditions (30-minute:  $t=4.81$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=9.88$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=5.07$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between physical aggressiveness and waiting time was significant ( $F=7.17$ ,  $df=2/98$ ,  $p<0.01$ ). No effects of physical aggressiveness were observed for any of the waiting time conditions. The waiting time affected both physical aggressiveness groups (L group:  $F=45.84$ ,  $df=2/98$ ,  $p<0.01$ ; H group:  $F=9.19$ ,  $df=2/98$ ,  $p<0.01$ ). In the L physical aggressiveness group, the 5-minute waiting condition resulted in higher value scores for the waiting object than the other two conditions (30-minute:  $t=4.68$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=8.97$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=4.29$ ,  $df=98$ ,  $p<0.01$ ). In the H physical aggressiveness group, the 5-minute waiting condition resulted in higher value scores than the other two conditions (30-minute:  $t=1.86$ ,  $df=98$ ,  $p=0.06$ ; 60-minute:  $t=4.59$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=2.72$ ,  $df=98$ ,  $p<0.01$ ).

An interaction effect between waiting place and waiting time was observed ( $F=5.79$ ,  $df=2/98$ ,  $p<0.01$ ). The effect of waiting place was significant for the 30- ( $F=14.20$ ,  $df=1/147$ ,  $p<0.01$ ) and 60-minute conditions ( $F=17.72$ ,  $df=1/147$ ,  $p<0.01$ ). The effect of waiting time was analyzed for each waiting place condition, and found to be significant for the park condition ( $F=47.91$ ,  $df=2/196$ ,  $p<0.01$ ).

The 5-minute waiting condition resulted in higher value scores than the other two conditions (30-minute:  $t=5.50$ ,  $df=196$ ,  $p<0.01$ ; 60-minute:  $t=9.86$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=4.36$ ,  $df=196$ ,  $p<0.01$ ). For the bookshop condition, the effect of waiting time was significant ( $F=19.08$ ,  $df=2/196$ ,  $p<0.01$ ). The 5-minute waiting condition resulted in higher value scores than the other two conditions (30-minute:  $t=2.30$ ,  $df=196$ ,  $p<0.05$ ; 60-minute:  $t=6.17$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher value scores than the 60-minute condition ( $t=3.87$ ,  $df=196$ ,  $p<0.01$ ).

Table 9 The means of waiting scores for Physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	2.69	3.00	2.96	2.89
Thirty minutes	2.36	2.86	2.76	2.79
Sixty minutes	1.96	2.09	2.24	2.59

Table 9 shows the mean waiting scores for the H and L physical aggressiveness groups. Using the waiting score as the dependent variable, ANOVA was performed as follows: 2 (physical aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=11.25$ ,  $df=1/49$ ,  $p<0.01$ ) and waiting time ( $F=35.72$ ,  $df=2/98$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher waiting scores than the other two conditions (30-minute:  $t=2.37$ ,  $df=98$ ,  $p<0.01$ ; 60-minute:  $t=8.27$ ,  $df=98$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher waiting scores than the 60-minute condition ( $t=5.91$ ,  $df=98$ ,  $p<0.01$ ).

The interaction effect between physical aggressiveness, waiting place, and waiting time was significant ( $F=7.18$ ,  $df=2/98$ ,  $p<0.01$ ). The interaction effect between physical aggressiveness and waiting place was significant for the 5- and 30-minute waiting conditions (5 minute:  $F=5.28$ ,  $df=1/147$ ,  $p<0.05$ ; 30-minute:  $F=7.62$ ,  $df=1/147$ ,  $p<0.01$ ). The interaction effect between physical aggressiveness and waiting time was significant for the bookshop condition ( $F=6.31$ ,  $df=2/196$ ,  $p<0.01$ ). The interaction effect between waiting place and waiting time was significant for both physical aggressiveness groups (L group:  $F=3.50$ ,  $df=2/98$ ,  $p<0.05$ ; H group:  $F=4.90$ ,  $df=2/98$ ,  $p<0.05$ ).

The effect of physical aggressiveness was analyzed for the six combinations of waiting place and waiting time. In the situation where subjects had been waiting for 30 minutes in the park condition, a physical aggressiveness effect was observed ( $F=4.81$ ,  $df=1/294$ ,  $p<0.05$ ), and the H physical aggressiveness group had higher waiting scores than the L physical aggressiveness group. In the situation where subjects had been waiting for 60 minutes in the bookshop condition, a physical aggressiveness effect was observed ( $F=7.56$ ,  $df=1/294$ ,  $p<0.01$ ), and the H physical aggressiveness group had higher waiting scores than the L physical aggressiveness group.

The effect of waiting place was analyzed for the six combinations of

physical aggressiveness and waiting time. In the situation where subjects with L physical aggressiveness had been waiting for 5 or 30 minutes, a waiting place effect was observed (5 minutes:  $F=7.13$ ,  $df=1/147$ ,  $p<0.01$ ; 30 minutes:  $F=17.60$ ,  $df=1/147$ ,  $p<0.01$ ), and the bookshop condition resulted in higher waiting scores than the park condition. In the situation where subjects with H physical aggressiveness had been waiting for 60 minutes ( $F=8.37$ ,  $df=1/147$ ,  $p<0.01$ ), the bookshop condition resulted in higher waiting scores than the park condition.

The waiting time effect was analyzed for the four combinations of waiting place and physical aggressiveness. In the situation where subjects with L physical aggressiveness had been waiting in the bookshop or park, a waiting time effect was observed (park:  $F=14.79$ ,  $df=2/196$ ,  $p<0.01$ ; bookshop:  $F=26.75$ ,  $df=2/196$ ,  $p<0.01$ ). In the park condition, the 5-minute waiting condition resulted in higher waiting scores than the other two conditions (30-minute:  $t=2.27$ ,  $df=196$ ,  $p<0.05$ ; 60-minute:  $t=5.09$ ,  $df=196$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher waiting scores than the 60-minute condition ( $t=2.86$ ,  $df=196$ ,  $p<0.01$ ). In the bookshop condition, the 5- and 30-minute waiting conditions resulted in higher waiting scores than the 60-minute condition (5-minute:  $t=6.36$ ,  $df=196$ ,  $p<0.01$ ; 30-minute:  $t=5.41$ ,  $df=196$ ,  $p<0.01$ ).

In the situation where subjects with H physical aggressiveness had been waiting in the park, a waiting time effect was observed ( $F=15.49$ ,  $df=2/196$ ,  $p<0.01$ ). The 5- and 30-minute waiting conditions resulted in higher waiting scores than the 60-minute condition (5-minute:  $t=5.82$ ,  $df=196$ ,  $p<0.01$ ; 30-minute:  $t=4.15$ ,  $df=196$ ,  $p<0.01$ ).

#### (4) Verbal aggressiveness

Data for the verbal aggressiveness subscale were incomplete for two subjects. Therefore, data from only 49 subjects were analyzed for this subscale. Participants with verbal aggressiveness scores above and below the median were classified into H and L verbal aggressiveness groups, respectively. The H group had significantly higher verbal aggressiveness scores than the L group.

Table 10 shows the mean anticipated frustration for both H and L verbal aggressiveness groups. Using anticipated frustration scores as the dependent variable, ANOVA was performed as follows: 2 (verbal aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting time ( $F=67.08$ ,  $df=2/94$ ,  $p<0.01$ ) and waiting place ( $F=33.39$ ,  $df=1/47$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in significantly lower anticipated frustration scores than the other two

Table 10 The means of anticipated frustration strength scores for verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H groups	
	Park	Book shop	Park	Book shop
Five minutes	2.22	2.00	1.90	1.45
Thirty minutes	3.56	2.67	3.55	2.25
Sixty minutes	4.44	3.67	4.35	3.00

Table 11 The means of value scores for verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	5.50	5.78	5.61	5.58
Thirty minutes	5.22	5.56	5.00	5.42
Sixty minutes	4.78	5.11	4.65	5.09

conditions (30-minute:  $t=6.76$ ,  $df=94$ ,  $p<0.01$ ; 60-minute:  $t=11.98$ ,  $df=94$ ,  $p<0.01$ ), and the 30-minute condition resulted in significantly lower anticipated frustration scores than the 60-minute condition ( $t=5.22$ ,  $df=94$ ,  $p<0.01$ ).

The interaction effect between waiting place and waiting time was significant ( $F=9.76$ ,  $df=2/94$ ,  $p<0.01$ ). A waiting place effect was observed for the 30- and 60-minute conditions (30-minute:  $F=35.77$ ,  $df=1/141$ ,  $p<0.01$ ; 60-minute:  $F=34.26$ ,  $df=1/141$ ,  $p<0.01$ ). The waiting time effect was significant for both waiting place conditions (park:  $F=72.64$ ,  $df=2/188$ ,  $p<0.01$ ; bookshop:  $F=33.61$ ,  $df=2/188$ ,  $p<0.01$ ).

In the park condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=7.86$ ,  $df=188$ ,  $p<0.01$ ; 60-minute:  $t=12.34$ ,  $df=188$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.48$ ,  $df=188$ ,  $p<0.01$ ). In the bookshop condition, the 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions (30-minute:  $t=3.89$ ,  $df=188$ ,  $p<0.01$ ; 60-minute:  $t=8.49$ ,  $df=188$ ,  $p<0.01$ ), and the 30-minute condition resulted in lower anticipated frustration scores than the 60-minute condition ( $t=4.60$ ,  $df=188$ ,  $p<0.01$ ).

Table 11 shows the mean values for the waiting object in the H and L verbal aggressiveness groups. Using the value scores for the waiting object as the dependent variable, ANOVA was performed as follows: 2

(verbal aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=10.69$ ,  $df=1/47$ ,  $p<0.01$ ) and waiting time ( $F=29.49$ ,  $df=2/94$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in a higher value of the waiting object than the other two conditions (30-minute:  $t=3.57$ ,  $df=94$ ,  $p<0.01$ ; 60-minute:  $t=7.95$ ,  $df=94$ ,  $p<0.01$ ), and the 30-minute condition resulted in a higher value of the waiting object than the 60-minute condition ( $t=4.39$ ,  $df=94$ ,  $p<0.01$ ).

An interaction effect between waiting place and waiting time was observed ( $F=2.99$ ,  $df=2/94$ ,  $p=0.06$ ). The waiting place effect was significant for the 30- ( $F=10.60$ ,  $df=1/141$ ,  $p<0.01$ ) and 60-minute waiting conditions ( $F=11.53$ ,  $df=1/141$ ,  $p<0.01$ ). The effect of waiting time was significant for both waiting place conditions (park:  $F=28.80$ ,  $df=2/188$ ,  $p<0.01$ ; bookshop:  $F=13.83$ ,  $df=2/188$ ,  $p<0.01$ ). For the park condition, the 5-minute waiting condition resulted in a higher value of the waiting object than the other two conditions (30-minute:  $t=4.14$ ,  $df=188$ ,  $p<0.01$ ; 60-minute:  $t=7.87$ ,  $df=188$ ,  $p<0.01$ ), and the 30-minute condition resulted in a higher value of the waiting object than the 60-minute condition ( $t=3.72$ ,  $df=188$ ,  $p<0.01$ ). For the bookshop condition, the 5- and 30-minute waiting conditions resulted in a higher value of the waiting object than the 60-minute condition (5-minute:  $t=5.36$ ,  $df=188$ ,  $p<0.01$ ; 30-minute:  $t=3.57$ ,  $df=188$ ,  $p<0.01$ ).

Table 12 shows the mean waiting scores for the H and L verbal aggressiveness groups. Using the waiting scores as the dependent variable, ANOVA was performed as follows: 2 (verbal aggressiveness)  $\times$  2 (waiting place)  $\times$  3 (waiting time). The main effects of waiting place ( $F=6.37$ ,  $df=1/47$ ,  $p<0.01$ ) and waiting time ( $F=34.23$ ,  $df=2/94$ ,  $p<0.01$ ) were significant. The 5-minute waiting condition resulted in higher waiting scores than the other two conditions (30-minute:  $t=2.39$ ,  $df=94$ ,  $p<0.05$ ; 60-minute:  $t=8.33$ ,  $df=94$ ,  $p<0.01$ ), and the 30-minute condition resulted in higher waiting scores than the 60-minute condition ( $t=5.94$ ,  $df=94$ ,  $p<0.01$ ).

Table 12 The mean waiting scores for verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	2.89	2.83	2.81	3.00
Thirty minutes	2.50	2.61	2.68	2.94
Sixty minutes	1.83	2.06	2.29	2.55

## (5) Relationship between anticipated frustration scores, value scores, and waiting scores

The correlation coefficients between anticipated frustration scores and value scores, between anticipated frustration scores and waiting scores, and between value scores and waiting scores were calculated for the H and L groups in each of the four subscales of the BAQ. These results are shown in Tables 13 through 24.

Table 13 The correlation coefficients between anticipated frustration strength scores and value scores for the irritability L and H groups

	Irritability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	-.53**	-.38	-.66**	-.69**
Thirty minutes	-.74**	-.62**	-.62**	-.72**
Sixty minutes	-.73**	-.66**	-.54**	-.64**

Table 14 The correlation coefficients between anticipated frustration strength scores and value scores for the hostility L and H groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	-.71**	-.50*	-.50*	-.63**
Thirty minutes	-.73**	-.74**	-.69**	-.61**
Sixty minutes	-.64**	-.62**	-.66**	-.64**

Table 15 The correlation coefficients between anticipated frustration strength scores and value scores for the physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	-.56**	-.55**	-.60**	-.60**
Thirty minutes	-.77**	-.86**	-.60**	-.55**
Sixty minutes	-.74**	-.80**	-.59**	-.43*

Table 16 The correlation coefficients between anticipated frustration strength scores and value scores for the verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	-.64**	-.82**	-.47**	-.41*
Thirty minutes	-.82**	-.95**	-.57**	-.53**
Sixty minutes	-.74**	-.81**	-.60**	-.53**

Table 17 The correlation coefficients between anticipated frustration strength scores and waiting scores for the irritability L and H groups

	Irritability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	-.32	-.86**	.03	-.31
Thirty minutes	-.59**	-.46*	-.42*	-.46*
Sixty minutes	-.67**	-.91**	-.28	-.31

Table 18 The correlation coefficients between anticipated frustration strength scores and waiting scores for the hostility L and H groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	-.00	-.68**	-.20	-.36
Thirty minutes	-.44*	-.39*	-.56**	-.45*
Sixty minutes	-.29	-.39*	-.61**	-.74**

Table 19 The correlation coefficients between anticipated frustration strength scores and waiting scores for the physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	-.18	/	-.44*	-.58**
Thirty minutes	-.48*	-.34	-.54**	-.54**
Sixty minutes	-.55**	-.75**	-.36	-.31

Table 20 The correlation coefficients between anticipated frustration strength scores and waiting scores for the verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	-.27	-.66**	-.12	/
Thirty minutes	-.52*	-.61**	-.44*	-.26
Sixty minutes	-.49*	-.54*	-.46*	-.57**

Table 21 The correlation coefficients between value scores and waiting scores for the irritability L and H groups

	Irritability L group		Irritability H group	
	Park	Book shop	Park	Book shop
Five minutes	.23	.30	-.05	.22
Thirty minutes	.39*	.33	.32	.30
Sixty minutes	.45*	.64**	.18	.34

Table 22 The correlation coefficients between value scores and waiting scores for the hostility L and H groups

	Hostility L group		Hostility H group	
	Park	Book shop	Park	Book shop
Five minutes	.11	.33	.10	.21
Thirty minutes	.34	.41*	.55**	.31
Sixty minutes	.31	.42*	.34	.51**

Table 23 The correlation coefficients between value scores and waiting scores for the physical aggressiveness L and H groups

	Physical aggressiveness L group		Physical aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	.07	/	.35	.30
Thirty minutes	.29	.31	.51**	.36
Sixty minutes	.31	.54**	.30	.35

Table 24 The correlation coefficients between value scores and waiting scores for the verbal aggressiveness L and H groups

	Verbal aggressiveness L group		Verbal aggressiveness H group	
	Park	Book shop	Park	Book shop
Five minutes	.49*	.45*	-.01	/
Thirty minutes	.47*	.64**	.28	.17
Sixty minutes	.61**	.63**	.12	.39*

## Discussion

The main effect of irritability on waiting behavior was observed. However, no such effect was observed on anticipated frustration scores and the value of the waiting object. Furthermore, the main effect of the irritability on waiting behavior was contrary to our prediction, and the H irritability condition resulted in higher waiting scores than the L irritability condition; this result did not support hypothesis (1).

The bookshop condition resulted in lower anticipated frustration scores than the park condition. Therefore, the bookshop condition resulted in a higher value of the waiting object than the park condition. Therefore, the bookshop condition resulted in higher waiting scores than the park condition; this result supported the hypothesis (2).

The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions. Thus, the 5-minute waiting condition led to higher values for the waiting object than the other two conditions, thereby resulting in higher waiting scores. In addition, the 30-minute waiting condition resulted in lower anticipated frustration scores than 60-minute condition, thereby resulting in a higher value of the waiting object. Therefore, the 30-minute waiting condition resulted in higher waiting scores than the 60-minute condition; this result supported hypothesis (3).

Furthermore, an interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. For the 5-minute waiting condition, the park condition resulted in higher anticipated frustration scores than the bookshop condition. However, the anticipated frustration scores associated with the park condition were low because the waiting time was 5 minutes. Therefore, no significant difference in the value of the waiting object was observed between the park and bookshop conditions.

In the 30-minute waiting condition, the bookshop resulted in lower anticipated frustration scores than the park condition. Therefore, the bookshop condition was associated with a higher value of the waiting object. In the 60-minute waiting condition, the anticipated frustration scores increased and the value of the waiting object decreased. However, the bookshop condition resulted in lower anticipated frustration scores than the park condition, and was therefore associated with a higher value of the waiting object than the park condition in the 60-minute

condition.

Thus, an interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. However, no interaction effect was observed between waiting time and waiting place in the waiting scores. Further research is needed to better understand this result.

In the waiting scores, the interaction effect between irritability and waiting time was significant. However, the H irritability group only had higher waiting scores than the L irritability group in the 60-minute condition. We were unable to interpret this result. In addition, no significant interaction effect was observed between irritability and waiting time for anticipated frustration scores and the value of the waiting object.

No effect of hostility on anticipated frustration scores, the value of the waiting object, or waiting behavior was observed; this result also failed to support hypothesis (1). The bookshop condition resulted in lower anticipated frustration scores than the park condition, and was thereby associated with a higher value of the waiting object. Therefore, the bookshop condition resulted in higher waiting scores than the park condition; this result supported hypothesis (2).

The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions. Thus, the 5-minute condition was associated with a higher value of the waiting object and higher waiting scores than the other two conditions. The 30-minute waiting condition resulted in lower anticipated frustration scores than the 60-minute condition. Therefore, the 30-minute condition was associated with a higher value of the waiting object and higher waiting scores than the 60-minute condition; this result supported hypothesis (3).

An interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. In the 5-minute condition, the park condition resulted in higher anticipated frustration scores than the bookshop condition. However, anticipated frustration scores associated with the park condition were low because the waiting time was only 5 minutes. Therefore, no significant difference was observed between the park and bookshop conditions in the waiting value.

In the 30-minute waiting condition, the bookshop condition resulted in lower anticipated frustration scores than the park condition. Thus, the bookshop condition was associated with a higher value of the waiting

object than the park condition in the 30-minute condition. In the 60-minute condition, anticipated frustration scores increased and the value of the waiting object decreased. However, the bookshop condition resulted in lower anticipated frustration scores than the park condition. Therefore, the bookshop condition was associated with a higher value of the waiting object than the park condition.

Thus, an interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. However, no interaction effect was observed between waiting place and waiting time for the waiting scores. Further research is needed to better understand this result.

No effect of physical aggressiveness on anticipated frustration scores, the value of waiting object, or waiting behavior was observed. Therefore, hypothesis (1) was not supported. The bookshop condition resulted in lower anticipated frustration scores than the park condition. Therefore, the bookshop condition was associated with a higher value of the waiting object and higher waiting scores than the park condition; this result supported hypothesis (2).

The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions. Thus, the 5-minute condition was associated with a higher value of the waiting object and higher waiting scores than other two conditions. The 30-minute condition also resulted in lower anticipated frustration scores than the 60-minute condition. Thus, the 30-minute condition was associated with a higher value of waiting object and higher waiting scores than the 60-minute condition; this result supported hypothesis (3).

Interaction effects between waiting place, waiting time, and physical aggressiveness were observed for the waiting scores. However, we were unable to interpret the effect of physical aggressiveness observed in this interaction. That is, we could not explain the result that the H physical aggressiveness group had higher waiting scores than the L physical aggressiveness group. No interaction effect was observed between waiting place, waiting time, and physical aggressiveness for anticipated frustration scores and the value of the waiting object.

An interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. In the 5-minute condition, the park condition resulted in higher anticipated frustration scores than the bookshop condition. However, the anticipated frustration scores in the park condition were low because the

waiting time was only 5 minutes. Therefore, no significant difference was found in the value of the waiting object between the park and bookshop conditions.

In the 30-minute condition, the bookshop condition resulted in lower anticipated frustration scores than the park condition. Thus, the bookshop condition was associated with a higher value of the waiting object. In the 60-minute condition, anticipated frustration increased and the value of the waiting object decreased. However, in the 60-minute condition, the bookshop condition resulted in lower anticipated frustration than the park condition. Thus, the bookshop condition was associated with a higher value of the waiting object.

Thus, an interaction effect between waiting place and waiting time was observed for anticipated frustration scores and the value of the waiting object. However, no interaction effect was observed between waiting place and waiting time for the waiting scores. Further research is needed to better understand these results.

No effect of verbal aggressiveness was observed on anticipated frustration scores, the value of the waiting object, or waiting behavior. Therefore, hypothesis (1) was not supported. The bookshop condition resulted in lower anticipated frustration scores than the park condition, and was thereby associated with a higher value of the waiting object and higher waiting scores than park condition. Therefore, hypothesis (2) was supported.

The 5-minute waiting condition resulted in lower anticipated frustration scores than the other two conditions. Thus, the 5-minute condition was associated with a higher value of the waiting object and higher waiting scores than the other two conditions. The 30-minute condition also resulted in lower anticipated frustration scores than the 60-minute condition. Therefore, the 30-minute condition was associated with a higher value of the waiting object and higher waiting scores than the 60-minute condition. Thus, hypothesis (3) was supported.

Interaction effects between waiting place and waiting time were observed for anticipated frustration scores and the value of the waiting object. In the 5-minute condition, no significant difference was found in anticipated frustration scores between the bookshop and park conditions. Thus, in the 5-minute condition, no significant difference was observed in the value of the waiting object between the park and bookshop conditions.

In the 30-minute condition, the bookshop condition resulted in lower

anticipated frustration scores and was associated with a higher value of the waiting object than the park condition. In the 60-minute condition, the anticipated frustration scores increased and the value of the waiting object decreased. However, the bookshop condition resulted in lower anticipated frustration scores than the park condition. Therefore, the bookshop condition was associated with a higher value of the waiting object.

Thus, an interaction effect between waiting place and waiting time was observed for the anticipated frustration scores and the value of the waiting object. However, no interaction effect was found between waiting place and waiting time for the waiting scores. Further research is needed to better understand these results.

In the present study, we focused on a variety of personality factors and investigated their effects on waiting behavior. We also investigated the interaction effects of personality and situational factors on waiting behavior. Based on our results, hypothesis (1) was not supported on all subscales, while hypotheses (2) and (3) were.

Interaction effects between waiting place and waiting time were observed for anticipated frustration scores and the value of the waiting object. However, this interaction effect was not observed for waiting behavior. In the future, it will be necessary to re-investigate whether the interaction effect observed between waiting place and waiting time is observed for waiting behavior.

As shown in the Table 13-24, Hypothesis (4) was partially supported for the H and L aggressiveness conditions. In the future, it will be necessary to develop a more detailed cognitive value evaluation model.

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