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Assessment of Display and Events of Agro-Healing Experience Center for Visitors Satisfaction and Revisit Intention: A Case Study of 2018 Changwon Agricultural Technology Exhibition

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ABSTRACT

The purpose of this study is to investigate the effects of the exhibition displays and events of the Agro-healing Experience Hall in the Agricultural Technology Exhibition 2018 on satisfaction and revisit intention of visitors. A survey was conducted on visitors of the Agro-healing Experience Hall and the responses of 274 visitors excluding 26 cases with inappropriate responses were analyzed. For psychological measurement, the Perceived Restorativeness Scale (PRS), Profile of Mood States (POMS), level of plant gardening experience, satisfaction and loyalty were measured. There was a significant difference among age groups in all four factors of the PRS (repose, fascination, coherence, and legibility). In the case of education level, there was a significant difference in the three factors (repose, fascination, and legibility). In addition, average monthly income showed a significant difference among groups in the two factors (fascination and coherence). As a result of analyzing the mood states of visitors for the exhibition events of the Agro-healing Experience Hall, there was a significant difference among age groups only in the case of vigor ($p < .05$). As a result of analyzing the correlation between the level of plant gardening activities (3 factors) and PRS (4 factors) in the exhibition events of the Agro-healing Experience Hall, plant preference tendency and plant-related event showed a high positive correlation of 0.5 or more with repose of the PRS factors. A multiple regression analysis was conducted to investigate the effects of the level of plant gardening activities, PRS and POMS on the satisfaction and loyalty of visitors. As a result, it was found that in terms of relative explanatory power over independent variables affecting satisfaction and revisit intention, fascination had the greatest effect, followed by vigor, fatigue, and occupation (company employee). The results of this study suggest that exhibition events of the Agro-healing Experience Hall affect repose, fascination or vigor of visitors, and thus can be used positively to increase satisfaction and revisit intention of visitors.

Keywords: fascination, legibility, level of plant gardening activity, POMS, PRS

Introduction

Since the implementation of the local government system in 1995, many local governments in Korea have been hosting exhibitions to revitalize the regional economy, which has led to a growing interest in exhibitions in various themes (Lee et al., 2011). Furthermore, the International Agriculture Exhibition has been held annually since 2002, and the theme of the

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International Agriculture Exhibition 2012 was ‘The World of Life Opening Up a Green Future.’ There is more and more emphasis on safe foods as people today show greater interest in their health due to improved standard of living and economy, and they also tend to pay more attention to the value and culture of farming (Yun, 2012). The Agricultural Technology Exhibition introduces advanced agricultural technology and high value-added agriculture that provide farmers with a more easygoing life while maximizing production efficiency by setting up the ‘Smart Agriculture Hall’ and ‘Advanced Biotechnology Hall.’ In addition, the exhibition also sets up the ‘Agro-healing Experience Hall’ and ‘Health/Functional Agrifood Hall’ for people today that are interested in health care, while also providing healing programs and information about companion animals (Lee, 2018). Recently, it has become difficult to sustain eco-friendly life in the artificial urban environment, urban dwellers are exposed to physically, mentally and psychologically complicated and diverse illnesses. To solve these problems such as stress, mental instability and health problems due to environmental pollution (Kim et al., 2013), the need for agro-healing is on the rise as a means to provide spaces for pleasant repose and recreation in rural communities. Agro-healing (or care farming) refers to a series of processes in which various agricultural activities are used for therapy or promotion of health, and can be defined as the ‘activity and industry promoting physical, emotional, psychological, cognitive and social health of the people using agricultural and rural resources or related activities’ (Kim et al., 2014, Rural Development Administration, 2016). The effect of reducing stress with nature or green is a general outcome brought by not just a fragmentary stimulation but various stimulations of the five senses (Miyazaki et al., 2011). Participating in plant gardening activities as part of agro-healing experience gives pleasure, stability and confidence as well as psychological satisfaction, and increases interest and understanding of plants, thereby promoting interest in plant gardening activities and providing positive effects (Kim, 2001; Shin et al., 2007). Accordingly, agriculture exhibitions provide a venue for urban-rural exchange that enables people to take a look around the rural landscape and experience rural communities (Ahn and Yoo, 2016), while also opening up the future of agriculture in Korea. Studies on agriculture exhibitions include one that analyzes the program satisfaction of visitors at agriculture exhibitions in Korea and evaluating the event (Ahn and Yoo, 2016), and one that examines the effects of the quality of the local festival operation system on the satisfaction of visitors (Cho et al., 2018). Moreover, Gim et al. (2013) conducted research on development, operation and planning of an agro-healing program for the senary (sixth-level) industry, and investigated villages and organizations that have become the senary industry that carries out agro-healing for mental and spiritual healing in light of the needs for healing. However, there is insufficient research on the psychological effects, loyalty and satisfaction of visitors through agro-healing experience. Thus, this study proposes useful data for local festival operation systems such as agriculture exhibitions by analyzing satisfaction, loyalty and psychological effects of each group divided according to age, gender and occupation of visitors that attended the Agro-healing Experience Hall of the Changwon Agricultural Technology Exhibition.

Research Methods

Analysis on the socio-demographic background of visitors and attitudes toward gardening activities

This study is to determine the effects of the exhibition events at the Agro-healing Experience Hall in the Agricultural Technology Exhibition 2018 on customer satisfaction and revisit intention. A survey was conducted on site targeting 300 visitors of the Agro-healing Experience Hall, and 274 cases were analyzed, excluding 26 cases with inappropriate responses (Figure 1). There were 85 male (31.0%) and 189 female (69.0%) respondents, and 27.0% were in their 20s, 21.2% in their 30s, 20.4% in their 40s, 20.1% in their 50s, 6.2% in their 60s or older, and 5.1% were younger than 20. Most of them were college graduates (or students) at 53.7%, followed by masters (or graduate students) at 20.8%, high school graduates at 15.3%, and others at 10.2%. Most of them had an average monthly household income of KRW 1.01-2 million

at 44.5%, followed by KRW 1 million or below at 18.4%, KRW 2.01-3 million at 18.0%, KRW 3.01-4 million at 10.6%, and KRW 4.01 million or above at 8.5%. As for occupation, 28.3% were company employees, 17.6% were professionals, 15.8% were involved in agriculture, forestry and fishery, 15.5% were students, 13.6% were others, 5.5% were full-time housewives, and 3.7% were self-employed (Table 1).

To determine the plant-related experience or perception of visitors of the Agro-healing Experience Hall in the Changwon Agricultural Technology Exhibition, this study presented 12 items rating the level of plant gardening activities (Rural Development Administration, 2017; Jang et al., 2018). With 4 items from A to D regarding plant experience, 4 items from E to H regarding plant preference tendency, and 4 items from I to L determining plant-related memories or events, there

Figure 1. Pictures of Agro-healing Experience Hall used in the survey, (A) agro-healing mini garden model; (B) bio wall using air purifying plants; (C) vegetable garden design; (D) fragrance garden; (E) a snail garden.

Table 1. Characteristics of survey respondents (N=274)

Variable	Category	Frequency	Percent (%)
Gender	Male	85	31.0
	Female	189	69.0
Age	Under 20	14	5.1
	20s	74	27.0
	30s	58	21.2
	40s	56	20.4
	50s	55	20.1
	Over 60	17	6.2
Education	High school graduate	42	15.3
	College graduate	147	53.7
	Postgraduate	57	20.8
	Others	28	10.2
Monthly income	Less than 1,000,000 won	50	18.4
	1,010,000~2,000,000 won	121	44.5
	2,010,000~3,000,000 won	49	18.0
	3,010,000~4,000,000 won	29	10.6
	More than 4,010,000 won	23	8.5
Occupation	Housewife	15	5.5
	Self-employed	10	3.7
	Professional	48	17.6
	Student	42	15.5
	Company employee	77	28.3
	Agriculture, forestry, and fishery	43	15.8
	Others	37	13.6

were total 12 items (plant gardening experience; A ‘I have much experience in plant gardening activities’: B ‘I actively participate in plant gardening activities’: C ‘I am always growing plants’: D ‘I think it is very important to grow plants in daily life’: plant preference tendency; E ‘I love all kinds of plants’: F ‘There are many plants in my house’: G ‘I am usually very interested in plants around me’: H ‘I frequently buy plants from flower shops (flower gardens, farms, etc.)’: plant-related event; I ‘I feel great when I find the plants I like’: J ‘Whenever I think of the plants I like, they recall certain memories’: K ‘The reason and motive for my love of plants still affect my life’: L ‘My experience of growing plants still affects my life’) rated on a 7-point Likert scale (1 point: most negative–7 points: most positive). Cronbach’s α of the scales for the level of plant gardening activities used in this study is plant gardening experience .847, plant preference tendency .836, and plant-related event .889. Moreover, the concurrent validity coefficient was (r) .30 ~ .83, showing relatively high validity.

Psychological characteristics of visitors in the Agro-healing Experience Hall

The Korean version of the Perceived Restorativeness Scale (PRS) and the abbreviated Profile of Mood States (POMS) were used as evaluation tools for psychological characteristics.

Korean PRS

The PRS was used to measure the level of perception by developing 16 items with 4 factors of the attention restoration theory (ART) by Kaplan and Kaplan (1989), which are ‘being away’, ‘extension’, ‘fascination’, and ‘compatibility’. The PRS was later revised to total 26 items after adding 10 items to the 16 items by Hartig et al. (1997). Recently, the PRS has been revised and supplemented by Lee and Hyun (2003) to 4 factors, such as ‘repose’, ‘fascination’, ‘coherence’, and ‘legibility’ as the Korean version. This Korean version of the PRS is a scale to measure how much the environment of measurement is restorative. The Cronbach’s α of this study was .755.

Abbreviated POMS

The POMS was developed in 1964 to conveniently determine the temporary and fickle affects, and has been used as a method to assess moods or emotional states of people since development (McNair and Lorr, 1964; Park, 2010; K.M. Kim, 2012; Jang et al., 2014; Yoo et al., 2015). The POMS categorized the moods of respondents into 6 factors through questions, assessing them as tension-anxiety (T–A), depression (D), anger-hostility (A–H), fatigue (F), confusion (C), and vigor (V). This study used the abbreviated POMS with 30 items and had the respondents answer on a 5-point Likert scale (Park, 2010; N.R. Kim, 2012; Jang et. al., 2014). The Cronbach’s α of this study was .729.

Satisfaction and revisit intention of visitors

Satisfaction used in this study turned out not to have an issue in reliability and validity, and thus the three items of satisfaction adjusted and used by Lee (2016) in the visitor satisfaction survey on the expectation-outcome of visitors at the Suncheonman National Garden were used in this study. Each item was rated on a 5-point (1: negative – 5: positive) Likert scale. Moreover, loyalty refers to consumer loyalty in buying behavior, defined as the degree of affection that represents constant attachment to a certain brand (Aaker, 1992) as well as product repurchase intention and behavior (Lee, 2003). Loyalty is the consumer’s desire to repurchase and is defined as consumer devotion, and can be classified into emotional, cognitive and behavioral loyalty (Oliver, 1999). Thus, if visitors have their emotional or cognitive loyalty satisfied by agro-healing experience at the Agro-healing Experience Hall, they have repurchase or revisit intention and tend to recommend it to people they know (Zeithaml et al., 1996). The loyalty scale used in this study is a modified version of the customer loyalty scale used by Gremler (1995) according to the circumstances of the Agro-healing Experience Hall, consisting of 3

items from loyalty A to C, each rated on a 5-point (1: negative-5: positive) Likert scale (Zeisel, 1981). The Cronbach's α of satisfaction and loyalty in this study was .904.

Statistical analysis

The statistical analysis of this study was conducted using IBM SPSS ver. 25.0. Cronbach's α was calculated for reliability analysis of the measurement tools. One-way ANOVA was used for plant-related experience, Korean PRS (Lee and Hyun, 2003; Lee, 2006), and the POMS, and Tukey's multiple range test was conducted for posttest. Pearson's correlation coefficient was used for correlation among key variables, and frequency analysis was conducted on demographic characteristics. Regression analysis was conducted to analyze the effects of the level of plant gardening activities, PRS, POMS and demographic variables on satisfaction and loyalty. In the survey on general matters, gender, age, education, occupation, and purpose of visiting the Agro-healing Experience Hall were investigated with a nominal scale, and thus were converted to dummy variables in regression analysis. For occupation, starting with housewife, total 7 occupations such as self-employed, professionals, students, company employees, agriculture, forestry and fishery, and others were converted to dummy variables. For the question on the purpose of visiting the Agro-healing Experience Hall, total 7 purposes such as experience, viewing, information gathering, family visit, group research and others were converted to dummy variables.

Results and Discussion

Motivations of use and purpose of visit

Most respondents found out about the Agricultural Technology Exhibition through other forms of media (37.6%), followed by the internet (25.2%), friends/close friends (21.0%), advertisements (8.3%), TV/radio (4.5%), newspapers (2.3%), and outdoor advertising (1.1%). Most of them visited the Agro-healing Experience Hall in the purpose of viewing (41.0%), followed by experience (24.5%), information gathering (19.9%), group research (10.0%), others (3.4%), and family visit (1.2%) (Table 2).

Table 2. Motivations and purposes of visit (N=274)

Variable	Category	Frequency	Percent (%)
Hosted information media	TV/radio	12	4.5
	Newspaper	6	2.3
	Internet	67	25.2
	Outdoor advertising	3	1.1
	Friend	56	21.0
	Advertisement	22	8.3
	Others	100	37.6
Purpose of visit	Experience	64	24.5
	Viewing	107	41.0
	Information gathering	52	19.9
	Family visit	3	1.2
	Group research	26	10.0
	Others	9	3.4

Plant-related experience and perception of visitors at the Agro-healing Experience Hall

As a result of investigating the plant-related experience and perception of visitors at the Agro-healing Experience Hall, among three factors, plant-related event showed the highest ratio (4.903 ± 1.29) followed by plant gardening experience (4.779 ± 1.28) and plant preference tendency (4.633 ± 1.27). Tukey's post-hoc test is conducted to verify the statistical significance by age regarding plant-related experience and perception (Table 3), and the results showed that the difference between respondents in their 20s and 50-60s was significant in plant gardening experience ($p < .001$), and there was also a statistically significant result between respondents in their 20-40s and 50-60s in plant preference tendency. Moreover, there was a statistically significant result among respondents in their 20s, below 20 and 50-60s or above in plant-related event ($p < .001$), and all three factors of the level of plant gardening activities showed lower mean in younger age and higher mean in older age. This result indicates that middle-aged and elderly people in their 50s or above have more experience growing plants, higher preference, and more memories or events related to plants than the younger generation in terms of plant-related experience or perception.

By determining plant-related experience and perception by education level, there was no statistical significance in plant gardening experience and plant preference tendency, while in plant-related event, high school graduates had more events or memories related to plants than college graduates or higher (Table 4).

Analysis on the psychological characteristics of visitors at the Agro-healing Experience Hall

Korean PRS

As a result of determining the difference in the four factors of the PRS by age (Table 5), there was a statistical significance among 20-30, below 20, and 50s for 'repose', between 20-40 and below 20 for 'fascination', between 20-50s and 60 or above for 'coherence', and between 20-30s and 60 or above for 'legibility'. In particular, those below 20 and in 50s felt most repose and fascination at the Agro-healing Experience Hall. However, coherence and legibility of the Agro-

Table 3. Differences in plant-related experience and perception by ages of Agro-healing Experience Hall visitors

Factor	Under 20	20s	30s	40s	50s	Over 60	F	p
Plant growing experience	4.696 $\pm$ 0.89 ^{ab}	4.432 $\pm$ 1.41 ^a	4.557 $\pm$ 1.23 ^{ab}	4.638 $\pm$ 1.20 ^{ab}	5.414 $\pm$ 1.13 ^{bc}	5.531 $\pm$ 0.95 ^c	5.846	.001 ^{***}
Plant preference tendency	4.946 $\pm$ 1.03 ^{ab}	4.247 $\pm$ 1.33 ^a	4.353 $\pm$ 1.11 ^a	4.446 $\pm$ 1.24 ^a	5.350 $\pm$ 1.20 ^b	5.279 $\pm$ 0.84 ^b	7.523	.001 ^{***}
Plant-related event	5.286 $\pm$ 1.00 ^{bc}	4.436 $\pm$ 1.34 ^a	4.621 $\pm$ 1.22 ^{ab}	4.768 $\pm$ 1.26 ^{ab}	5.662 $\pm$ 1.09 ^c	5.618 $\pm$ 0.91 ^c	8.680	.001 ^{***}

Note. Mean $\pm$ standard deviation (N=274). Mean separation within rows by Tukey's multiple range test, 5% level.

*** $p < .001$ by one way ANOVA.

Table 4. Differences in plant-related experience and perception by education background of Agro-healing Experience Hall visitors

Factor	High school graduate	College graduate	Postgraduate	Others	F	p
Plant growing experience	5.030 $\pm$ 1.11 ^a	4.637 $\pm$ 1.35 ^a	4.830 $\pm$ 1.31 ^a	5.046 $\pm$ 1.04 ^a	1.566	.198
Plant preference tendency	4.881 $\pm$ 1.05 ^a	4.488 $\pm$ 1.40 ^a	4.684 $\pm$ 1.15 ^a	4.911 $\pm$ 1.05 ^a	1.653	.177
Plant-related event	5.335 $\pm$ 1.06 ^b	4.701 $\pm$ 1.39 ^a	4.934 $\pm$ 1.17 ^a	5.268 $\pm$ 1.11 ^a	3.578	.014 [*]

Note. Mean $\pm$ standard deviation (N=274). Mean separation within rows by Tukey's multiple range test, 5% level.

* $p < .05$ by one way ANOVA.

healing Experience Hall was highest among the 60 or above. This result is due to the fact that those below 20 that are familiar with the smart era and the 50s that are soon-to-be silver generation perceived a high level of attractive features or interest. However, older silver generation in their 60s or above are more sensitive to coherence, which include ‘This place is too crowded’ and ‘This place is too chaotic,’ and realistic factors such as ‘This place is easy to find’ and ‘This place is organized intelligibly’.

Moreover, as a result of determining the difference in the four factors of the PRS by education level (Table 6), ‘repose’ and ‘legibility’ of the visitors were highest among the high school graduates at 8.004 and 7.468 and lowest among the college graduates at 7.288, while ‘fascination’ was lowest among masters with statistical significance. ‘Coherence’ was lowest among the high school graduates with statistical significance.

As a result of determining the difference in the four factors of the PRS by average monthly income, ‘repose’, ‘fascination’, and ‘legibility’ did not show statistically significant difference depending on average monthly income. However, ‘coherence’ was higher in KRW 4 million or above than KRW 3 million or below. This result shows that repose, fascination, or understanding of place or space tended to be similar despite the gap in average monthly income, but coherence such as ‘This place is too chaotic’ is perceived more greatly among the respondents with higher income (Table 7).

Abbreviated POMS

As a result of determining the difference in the mood changes by age of the visitors (Table 8), negative emotions such as tension-anxiety, depression, anger-hostility, fatigue, and confusion were low in all ages without statistically significant difference, while positive emotion such as vigor was high with statistical significance. In particular, those below 20s that are currently students tended to show lower tension, depression, anger-hostility, confusion and fatigue and higher vigor

Table 5. Differences of psychological repose, fascination, coherence and legibility depending on ages using perceived restorativeness scale of Agro-healing Experience Hall visitors

Variance	Under 20	20s	30s	40s	50s	Over 60	F	p
Repose	8.305±0.97 ^b	7.122±1.46 ^a	7.084±1.22 ^a	7.394±1.37 ^{ab}	8.315±1.15 ^b	7.493±2.14 ^{ab}	7.171	.001***
Fascination	8.830±1.07 ^b	7.652±1.33 ^a	7.520±1.30 ^a	7.880±1.20 ^a	8.453±1.22 ^{ab}	7.993±2.24 ^{ab}	4.675	.001***
Coherence	7.554±1.33 ^{ab}	6.660±1.22 ^a	6.634±1.36 ^a	6.652±1.54 ^a	6.808±1.75 ^a	7.956±1.55 ^b	3.284	.007**
Legibility	7.214±1.81 ^{ab}	6.419±1.96 ^a	6.284±1.79 ^a	6.685±1.73 ^{ab}	7.303±1.93 ^{ab}	7.824±2.48 ^b	3.331	.006**

Note. Mean ± standard deviation (N=274). Mean separation within rows by Tukey’s multiple range test, 5% level.

** $p < .01$, *** $p < .001$ by one way ANOVA.

Table 6. Differences of psychological repose, fascination, coherence and legibility depending on education background using perceived restorativeness scale of Agro-healing Experience Hall visitors

Variance	High school graduate	College graduate	Postgraduate	Others	F	p
Repose	8.004±1.28 ^b	7.288±1.53 ^a	7.425±1.26 ^{ab}	7.935±1.32 ^{ab}	3.793	.011*
Fascination	8.185±1.22 ^{ab}	7.795±1.46 ^{ab}	7.735±1.26 ^a	8.487±1.30 ^b	2.875	.037*
Coherence	6.367±1.54 ^a	6.893±1.43 ^{ab}	6.706±1.47 ^{ab}	7.232±1.66 ^b	2.267	.081
Legibility	7.468±1.85 ^b	6.649±1.91 ^{ab}	6.348±1.94 ^a	7.024±2.07 ^{ab}	3.113	.027*

Note. Mean ± standard deviation (N=274). Mean separation within rows by Tukey’s multiple range test, 5% level.

* $p < .05$ by one way ANOVA.

Table 7. Differences of psychological repose, fascination, coherence and legibility depending on monthly average income using perceived restorativeness scale of Agro-healing Experience Hall visitors

Variance	Repose	Fascination	Coherence	Legibility
Under 1,000,000 (KRW)	7.508±1.55 ^a	8.160±1.52 ^a	7.155±1.20 ^{ab}	7.007±1.87 ^a
1,010,000~2,000,000	7.386±1.36 ^a	7.680±1.34 ^a	6.499±1.52 ^a	6.420±2.00 ^a
2,010,000~3,000,000	7.226±1.67 ^a	7.821±1.52 ^a	6.543±1.39 ^a	6.677±1.91 ^a
3,010,000~4,000,000	7.977±1.15 ^a	8.197±1.16 ^a	7.164±1.34 ^{ab}	7.391±1.56 ^a
Over 4,010,000	7.997±1.28 ^a	8.496±1.03 ^a	7.739±1.66 ^b	7.181±2.13 ^a
F	2.136	2.685	5.381	2.209
p	.077	.032 [*]	.001 ^{***}	.068

Note. Mean ± standard deviation (N=274). Mean separation within columns by Tukey's multiple range test, 5% level.

^{*}p < .05, ^{***}p < .001 by one way ANOVA.

Table 8. Differences of psychological tension, depression, anger, tiredness, confusion and vitality depending on ages using profile of mood states (POMS) of Agro-healing Experience Hall visitors

Variance	Tension-anxiety	Depression	Anger-hostility	Fatigue	Confusion	Vigor
Under 20	0.200±0.35 ^a	0.043±0.16 ^a	0.057±0.21 ^a	0.129±0.32 ^a	0.743±0.21 ^a	2.993±0.80 ^a
20s	0.501±0.69 ^a	0.338±0.68 ^a	0.276±0.53 ^a	0.616±0.84 ^a	0.822±0.62 ^a	2.207±0.95 ^a
30s	0.455±0.64 ^a	0.308±0.59 ^a	0.242±0.53 ^a	0.528±0.72 ^a	0.821±0.55 ^a	2.178±0.81 ^a
40s	0.388±0.42 ^a	0.114±0.26 ^a	0.186±0.51 ^a	0.327±0.59 ^a	0.779±0.40 ^a	2.513±0.87 ^{ab}
50s	0.605±0.67 ^a	0.325±0.65 ^a	0.306±0.63 ^a	0.375±0.56 ^a	0.944±0.53 ^a	2.530±1.13 ^{ab}
Over 60	0.621±0.60 ^a	0.303±0.68 ^a	0.426±0.66 ^a	0.435±0.73 ^a	0.812±0.46 ^a	2.735±0.81 ^{ab}
F	1.528	1.640	1.007	2.122	0.681	3.238
p	.191	.150	.414	.063	.638	.007 ^{**}

Note. Mean ± standard deviation (N=274). Mean separation within columns by Tukey's multiple range test, 5% level. Each item was rated on 5-point scale, where 0=not at all; 1=a little; 2=moderately; 3=quite a bit; 4=extremely.

^{**}p < .01 by one way ANOVA.

than those in their 20-30s with realistically higher stress than other ages, which proved that 20-30s stressed from work or in marriageable age tended to have more negative emotions, while those below 20s living under their parents' protection tended to be more positive.

As a result of determining the difference in the mood changes by occupation of the visitors (Table 9), there was no statistically significant difference in the five negative emotions among the respondents, but there was a statistically significant difference in the positive emotion of vigor partially between the agriculture, forestry and fishery group and housewives. Moreover, housewives showed higher negative emotions such as tension-anxiety, anger-hostility and confusion as well as positive emotion such as vigor than other occupations. Company employees showed lowest vigor among all occupations, and respondents working in agriculture, forestry and fishery showed higher depression and fatigue than other occupations. Company employees mainly showed higher negative emotions, but overall, they showed low negative emotions such as tension-anxiety, anger-hostility and confusion and high positive emotion such as vigor at the Agro-healing Experience Hall. Yoo et al. (2015) reported that restorativeness of a residential space decorated in green was higher for housewives than company employees working in an office space, and that company employees tended to feel more fatigue than house-

wives or students. This was similar to the findings of this study that company employees felt higher depression or fatigue than housewives or other occupations. Moreover, it is also similar to the study results by K.M. Kim (2012) proving that merely looking at green plants lowered fatigue, anger-hostility and anxiety in the POMS, and also to the report by Jang et al. (2016) that employees showed lower tension, depression, anger-hostility and fatigue in an office space with an indoor garden compared to an office space without it. This implies that plants and natural objects in the Agro-healing Experience Hall may have had effects on positive emotions of the visitors.

Moreover, as a result of determining the mood changes by average monthly income of the visitors (Table 10), there was no statistically significant difference in the five negative emotions among the respondents, but there was a statistically significant difference in the positive emotion of vigor. Those with an average monthly income of KRW 1.01-3 million showed lowest vigor, which is a positive emotion, whereas those with an average monthly income of KRW 4.01 million and higher showed highest vigor, showing statistically significant difference.

Table 9. Differences of psychological tension, depression, anger, tiredness, confusion and vitality depending on occupation using profile of mood states (POMS) of Agro-healing Experience Hall visitors

Variance	Tension-anxiety	Depression	Anger-hostility	Fatigue	Confusion	Vigor
Housewife	0.680±0.67 ^a	0.317±0.66 ^a	0.440±0.71 ^a	0.440±0.73 ^a	0.907±0.47 ^a	3.027±0.85 ^b
Self-employed	0.300±0.22 ^a	0.040±0.08 ^a	0.060±0.13 ^a	0.185±0.18 ^a	0.680±0.37 ^a	2.720±0.64 ^{ab}
Professional	0.511±0.53 ^a	0.276±0.54 ^a	0.309±0.66 ^a	0.463±0.72 ^a	0.900±0.50 ^a	2.491±0.86 ^{ab}
Student	0.463±0.63 ^a	0.295±0.68 ^a	0.262±0.55 ^a	0.500±0.81 ^a	0.829±0.58 ^a	2.390±1.08 ^{ab}
Company employee	0.382±0.56 ^a	0.213±0.51 ^a	0.169±0.41 ^a	0.434±0.65 ^a	0.790±0.41 ^a	2.244±0.90 ^a
Agriculture, forestry and fishery	0.584±0.71 ^a	0.438±0.70 ^a	0.398±0.67 ^a	0.605±0.76 ^a	0.884±0.70 ^a	2.260±0.86 ^a
Others	0.534±0.71 ^a	0.174±0.50 ^a	0.178±0.42 ^a	0.316±0.59 ^a	0.785±0.57 ^a	2.470±1.00 ^{ab}
F	1.014	1.202	1.516	0.871	0.503	1.942
p	.416	.306	.173	.516	.806	.074 [*]

Note. Mean ± standard deviation (N=274). Mean separation within columns by Tukey's multiple range test, 5% level. Each item was rated on 5-point scale, where 0=not at all; 1=a little; 2=moderately; 3=quite a bit; 4=extremely.

* $p < .05$ by one way ANOVA.

Table 10. Differences of psychological tension, depression, anger, tiredness, confusion and vitality depending on monthly average income using profile of mood states (POMS) of Agro-healing Experience Hall visitors

Variance	Tension-anxiety	Depression	Anger-hostility	Fatigue	Confusion	Vigor
Under 1,000,000 (KRW)	0.449±0.55 ^a	0.231±0.54 ^a	0.248±0.55 ^a	0.456±0.72 ^a	0.792±0.50 ^a	2.451±1.05 ^{ab}
1,010,000~2,000,000	0.499±0.68 ^a	0.331±0.66 ^a	0.286±0.57 ^a	0.500±0.68 ^a	0.868±0.56 ^a	2.299±0.95 ^a
2,010,000~3,000,000	0.498±0.65 ^a	0.291±0.58 ^a	0.265±0.51 ^a	0.510±0.72 ^a	0.822±0.59 ^a	2.213±0.97 ^a
3,010,000~4,000,000	0.447±0.48 ^a	0.145±0.31 ^a	0.262±0.62 ^a	0.441±0.86 ^a	0.793±0.48 ^a	2.586±0.75 ^{ab}
Over 4,010,000	0.491±0.48 ^a	0.122±0.37 ^a	0.087±0.38 ^a	0.133±0.30 ^a	0.843±0.45 ^a	2.957±0.71 ^a
F	0.091	1.136	0.638	1.454	0.248	3.188
p	.985	.340	.636	.217	.911	.014 [*]

Note. Mean ± standard deviation (N=274). Mean separation within columns by Tukey's multiple range test, 5% level. Each item was rated on 5-point scale, where 0=not at all; 1=a little; 2=moderately; 3=quite a bit; 4=extremely.

* $p < .05$ by one way ANOVA.

Correlation among key variables of visitors at the Agro-healing Experience Hall

As a result of determining the correlation between the three factors of the level of plant gardening activities (plant gardening experience, plant preference tendency, plant-related event) and the four factors of the PRS of the visitors, the three factors of the level of plant gardening activities had a statistically significant correlation with repose, fascination and legibility among the PRS. However, there was no statistically significant correlation with coherence (consisting of ‘This place is too crowded’, ‘This place is too confusing’, ‘This place is too chaotic’, ‘This place is too disordered’) (Table 11). As a result of determining the correlation between the three factors of the level of plant gardening activities and mood states, plant gardening experience, plant preference tendency, and plant-related event did not show a correlation with the negative emotions of mood states such as tension-anxiety, anger-hostility, and confusion, while there was a statistically significant correlation between the positive emotion of vigor and plant preference tendency and plant-related event (Table 12). This implies that depending on the level of plant gardening experience of visitors, it will be possible to exert positive and useful influence over their restorativeness or emotional changes.

Table 11. Correlation between level of plant gardening activity and perceived restorativeness scale of Agro-healing Experience Hall visitors

Variance	Plant gardening experience	Plant preference tendency	Plant-related event	Repose	Fascination	Coherence	Legibility
Plant gardening experience	1						
Plant preference tendency	.677**	1					
Plant-related event	.632**	.803**	1				
Repose	.366**	.506**	.513**	1			
Fascination	.282**	.397**	.380**	.787**	1		
Coherence	.032	.068	.073	.292**	.407**	1	
Legibility	.103	.217**	.191**	.383**	.430**	.436**	1

** $p < .01$ (N=274).

Table 12. Correlation between level of plant cultivation activity and profile of mood states (POMS) of Agro-healing Experience Hall visitors

Variance	Plant gardening experience	Plant preference tendency	Plant-related event	Tension-anxiety	Depression	Anger-hostility	Fatigue	Confusion	Vigor
Plant gardening experience	1								
Plant preference tendency	.677**	1							
Plant-related event	.632**	.803**	1						
Tension-anxiety	.018	.003	.025	1					
Depression	.006	-.054	-.009	.786**	1				
Anger-hostility	-.032	-.036	-.007	.716**	.841**	1			
Fatigue	-.037	-.116	-.117	.722**	.778**	.769**	1		
Confusion	.078	.058	.040	.700**	.708**	.695**	.674**	1	
Vigor	.102	.247**	.221**	-.136*	-.289**	-.212**	-.326**	.094	1

* $p < .05$, ** $p < .01$ by one way ANOVA (N=274).

Satisfaction of visitors and percentage of revisit intention

As a result of rating the satisfaction and revisit intention of visitors with the Agro-healing Experience Hall in the Agricultural Technology Exhibition on a 5-point Likert scale, at least 90% of the visitors gave positive responses such as ‘strongly agree’ and ‘agree’ for satisfaction in all three items of loyalty. 0% gave the most negative response of ‘strongly disagree,’ proving that the visitor satisfaction is very high (Table 13). Moreover, at least 83% of the visitors gave positive responses such as ‘strongly agree’ and ‘agree’ for loyalty in all three items of loyalty, followed by ‘average’ and ‘disagree’ (Table 14). Satisfaction with the Agro-healing Experience Hall in the Agricultural Technology Exhibition has a significant effect on revisit intention (Park, 2014), and revisit intention has significance in assessing the Agro-healing Experience Hall, and thus can be an important variable in securing the market for demands (Kim, 2006). Thus, the report by Ahn and Yoo (2016) in which 82% of the visitors responded that they were satisfied with the Agricultural Technology Exhibition and most of them had revisit intention supports the utility of this study result showing a highly positive response of more than 82% of the visitors regarding satisfaction and loyalty.

Effects of key variables and demographic variables of visitors on satisfaction and revisit intention

A multiple regression analysis was conducted to determine the effects of the level of plant gardening activities, restorative environment and mood states on satisfaction and revisit intention of visitors at the Agro-healing Experience Hall (Tables 15-16). In diagnosing multicollinearity to determine whether each independent variable is independent from one another, tolerance and VIF are close to 1 and thus there is low correlation among independent variables, thereby showing no multicollinearity. Moreover, Durbin-Watson that determines the existence of autocorrelation is close to 2, and thus there is no autocorrelation. The revised R^2 values are all 0.2 or higher, thereby having sufficient explanatory power (data not shown). Thus, a multiple regression analysis was conducted to determine the effects of the level of plant gardening activities (3 factors: plant gardening activities, plant preference tendency, and plant-related event), PRS (4 factors: repose,

Table 13. The visitors' satisfaction in Agro-healing Experience Hall

Evaluation item	Strongly disagree		Disagree		Average		Agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
Visiting this place was better than I thought.	0	0.0	2	0.7	24	8.8	89	32.5	159	58.0
Visiting this place was a wise choice.	0	0.0	2	0.7	24	8.8	86	31.4	162	59.1
Overall, I am satisfied with the visit here.	0	0.0	5	1.8	19	6.9	83	30.4	167	60.9

Note. Satisfaction was rated on 5-point scale where 1=strongly disagree, 5=strongly agree.

Table 14. The visitors' revisit intention in Agro-healing Experience Hall

Evaluation item	Strongly disagree		Disagree		Average		Agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
I am able to talk positively to other people about Agro-healing experience.	3	1.1	3	1.1	37	13.5	114	41.6	117	42.7
After visiting this place, I am willing to try the Agro-healing experience again.	2	0.7	8	2.9	34	12.5	102	37.2	128	46.7
I will strongly recommend to Agro-healing experience to relatives or friends.	3	1.1	3	1.1	41	15.0	91	33.3	273	49.5

Note. Loyalty was rated on 5-point scale where 1=strongly disagree, 5=strongly agree.

Table 15. The effect of level of plant gardening activity, perceived restorativeness scale, profile of mood states and demographic variables on satisfaction

Independent variable	B	β	t	R^2	Change in R^2	F
(Constant)	2.87					
Fascination	0.17	.36	6.09***	.28	0.19	31.43
Vigor	0.14	.22	3.80***		0.05	
Work dummy variable-5 (Company employee)	-0.33	-.19	-3.53***		0.04	

Note. Dependent variable: Satisfaction. Satisfaction was rated on 5-point scale where 1=strongly disagree, 5=strongly agree.

Satisfaction item 1=Visiting this place was better than I thought; 2=Visiting this place was a wise choice; 3=Overall, I am satisfied with the visit here.

*** $p < .001$ (N=274).

Table 16. The effect of level of plant gardening activity, perceived restorativeness scale, profile of mood states and demographic variables on loyalty

Independent variable	B	β	t	R^2	Change in R^2	F
(Constant)	1.95					
Fascination	0.29	.50	9.45***	.37	0.26	17.75
Fatigue	-0.17	-.16	-3.11**		0.03	
Work dummy variable-1 (Housewife)	0.53	.14	2.57**		0.01	
Work dummy variable-3 (Professional)	0.35	.18	3.23***		0.01	
Work dummy variable-4 (Student)	0.28	.18	3.22***		0.01	
Age dummy variable-2 (20s)	0.23	.13	2.35**		0.01	
Visit dummy variable-1 (Experience)	-0.18	-.12	-2.31*		0.02	
Visit dummy variable-5 (Group research)	0.43	.10	2.00*		0.01	

Note. Dependent variable: loyalty. Loyalty was rated on 5-point scale where 1=strongly disagree, 5=strongly agree.

Loyalty item 1=I am able to talk positively to other people about Agro-healing experience; 2=After visiting this place, I am willing to try the Agro-healing experience again; 3=I will strongly recommend to Agro-healing experience to relatives or friends.

* $p < .05$, ** $p < .01$, *** $p < .001$ (N=274).

fascination, coherence, and legibility), mood states (6 factors: tension-anxiety, depression, anger-hostility, fatigue, confusion, and vigor), and demographic variables (control variables) on satisfaction. The results showed that fascination among the four factors of the PRS, the positive emotion of vigor among the six factors of the POMS, and company employees among the occupations turned out to be variables affecting satisfaction of visitors at the Agro-healing Experience Hall. In other words, higher fascination and vigor led to higher satisfaction of visitors, and company employees showed lower satisfaction than other occupations. On the other hand, control variables of the visitors such as age, education level, average monthly income, and purpose of visit did not affect satisfaction. These variables explained satisfaction by 28%, and fascination in the PRS has highest explanatory power at 19%, which is increased by 5% by adding vigor and 4% by adding occupation (company employees), thereby having total 28% explanatory power. Moreover, the F-value 31.43 was significant at $p < .001$, showing that the regression model below is suitable. Thus, in the relative explanatory power for independent variables affecting satisfaction of visitors, fascination has the greatest effect, followed by vigor and occupation (company employee), among which fascination turned out to be the most influential variable out of the four factors of the PRS.

Furthermore, a multiple regression analysis including dummy variables was conducted to determine the effects of the

level of plant gardening activities (3 factors: plant gardening activities, plant preference tendency, and plant-related event), PRS (4 factors: repose, fascination, coherence, and legibility), mood states (6 factors: tension-anxiety, depression, anger-hostility, fatigue, confusion, and vigor), and demographic variables (control variables) on loyalty. The results showed that fascination among the PRS, the negative emotion of fatigue among mood states, occupation (students, professionals, housewives), age (20s), and purpose of visit (experience, group research) were variables affecting loyalty of visitors at the Agro-healing Experience Hall. In other words, higher satisfaction and lower fatigue led to higher loyalty. As for occupation, students, professionals and housewives had high loyalty while company employees had low loyalty. Moreover, visitors whose purpose of visit was for experience had low loyalty, whereas visitors visiting for group research showed high loyalty. On the other hand, control variables of the visitors such as education level and average monthly income did not affect loyalty. These variables explained loyalty by 37%, and fascination in the PRS has highest explanatory power at 26%, which is increased by 3% by adding fatigue among the negative mood state and 1% each by adding occupations (students, professionals, housewives), thereby having total 37% explanatory power. Moreover, the F-value 17.75 was significant at $p < .001$, showing that the regression model below is suitable. Thus, in the relative explanatory power for independent variables affecting loyalty of visitors, fascination has the greatest effect, followed by fatigue and occupation, among which fascination turned out to be the most influential variable out of the four factors of the PRS as did in satisfaction. Results of previous studies proving that when a certain environment has many attractive elements, it naturally captures attention without a specific mental effort (Kaplan, 1993), the report by Hartig et al. (1991) that the natural environment has many features that restore attention, and the research by Lee (2007) showing that encountering the natural environment restores attention, reduces the negative effects of stress, and promotes emotional stability all support the utility of this study result, proving that the level of plant gardening activities, restorative environment and mood changes according to the Agro-healing Experience Hall have influence over satisfaction and loyalty of visitors.

Conclusion

This study is to determine the effects of the exhibition events of the Agro-healing Experience Hall in the Agricultural Technology Exhibition 2018 on visitor satisfaction and revisit intention. A survey was conducted on 300 visitors of the Agro-healing Experience Hall, and the responses of 274 visitors excluding 26 cases with inappropriate responses were analyzed. For psychological measurement, the PRS, POMS, level of plant gardening experience, satisfaction and loyalty were measured, and one-way ANOVA, Pearson's correlation analysis, and multiple regression analysis were conducted. There were 85 male and 189 female respondents. Most of them (37.6%) found out about the exhibition through other forms of media, followed by the internet (25.2%), and 41.0% visited for viewing and 24.5% visited for experience. As a result of analyzing the psychological indicators about the image of the Agro-healing Experience Hall by the demographic variables of visitors regarding the three factors of the level of plant gardening activities (3 factors: plant gardening experience, plant preference tendency, plant-related event), there was no statistical significance according to age and average monthly income. As a result of determining the difference by occupation regarding plant preference tendency and plant-related event, these two factors turned out to be higher among housewives than company employees and students with statistical significance ($p < .05$). There was a significant difference among age groups in all factors of the PRS (4 factors: repose, fascination, coherence, legibility), and education level showed a significant difference among groups in repose, fascination and legibility. Moreover, average monthly income showed a significant difference among groups in fascination and coherence. As a result of analyzing mood states by average monthly income and age, tension-anxiety, depression, anger-hostility, fatigue, and confusion did not show statistically significance according to average monthly income and age, while only vigor showed a significant difference among age groups ($p < .05$). The image of the environment in which

people can encounter plants such as the Agro-healing Experience Hall may have positive effects as proved by Hartig et al. (1991) and Ulrich et al. (1991), who reported that nature and green landscape reduce negative emotions such as fear, anger-hostility, tension and anxiety while increasing positive emotions. Moreover, as a result of determining the correlation between the three levels of plant gardening experience and 4 factors of the PRS, plant preference tendency and plant-related event had a high positive correlation of more than 0.5 with repose among the PRS factors. As a result of conducting a multiple regression analysis to determine the effects of the level of plant gardening activities, PRS and POMS on satisfaction and revisit intention of visitors at the Agro-healing Experience Hall, it was found that in terms of relative explanatory power over independent variables affecting satisfaction and revisit intention, fascination had the greatest effect, followed by vigor, fatigue and occupation (company employees), among which fascination turned out to be the most influential variable out of the four factors of the PRS. The results of this study suggested that exhibition events of the Agro-healing Experience Hall affect repose, fascination or vigor of visitors, and thus can be used positively to increase satisfaction and revisit intention of visitors.

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