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Effects of Interior Colors, Lighting and Decors on Perceived Sociability, Emotion and Behavior Related to Social Dining

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Abstract

Today's customers tend to select eating-places for satisfying pleasures through experiential socialization. This study explores how color, lighting and décors have effects on customers' perceived sociability, emotion and behavioural intention on social dining occasions. Experimental method was used and 162 senior students were involved. The results showed that the restaurant with monochromatic colors, dim lighting and plain décors yielded a statistically significant difference in the entire dependent variables with almost any other interior conditions on romantic dining, as opposed to the case of casual dining. Further research on subtler and diverse dimensions of interior element is suggested to enrich previous findings.

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Keywords: Interior elements; perceived sociability;emotion; social dining behavior

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1. Introduction

After the post-industrialization era that we have been through where foods and drinks are abundant and ubiquitously offered, consumer motives of consumption have shifted from meeting our basic nutritional needs to a more pleasurable experience (Macht et.al, 2005).

The development of atmospheric eating-places has gained more interests among restaurant owners to attract customers who seek exceptional and extraordinary places for leisure (Scott, et.al, 2009). This trend clearly indicates how customers celebrate experience economy. In such economic situation, tourism or retail business investors are focusing their attention on innovating their goods and services trying to transform them into experience products that are memorable to customers (Joseph Pine II and James H. Gilmore, 1998). These authors have found five key experience design-principles for designing memorable experience including: “1. Theme the experience, 2. Harmonize impressions with positive cues, 3. Eliminate negative cues, 4. Mix in memorabilia, 5. Engage all five senses”. Among eating activities hedonic eating may represent the need of memorable eating experience, where stimuli consisting of foods, physical environment and social factors as human external factors play a role in satisfying customers (Macht et.al., 2005). These authors elaborate that environmental condition including, temperature, lighting, and acoustic should be set up appropriately to support pleasurable eating. In addition, the attendance of familiar eating partners such as, the family, friends or special friends will increase appetite and pleasure which may be identified through psychological manifestation like eating behavior and subjective experiences, beside other more physical responses. Wansink (2006) also adds this notion that pleasurable moments can be attained when we share food with family and friends. In fact, gathering with friends or meeting new relatives becomes a common reason for hangout and eating out. Many types of eating-places like coffee houses, cafés, or bistros among many others have long been developed trying to find the best solution to fit that need, the place where people gather for informal and relax socialization. Ray Oldenburg (1997) terms such places, beside book shops, beauty salon, fitness center and the like as third place, after second place or office where people go for working and first place, the home the most vital place of all where we spend most of our time for our domestic life. Although we spend time the least in the third place and less prominent in our life compared to the first and second one, it is still considered essential for balancing the quality of our life. However, since the way people interact with others differs to one another depending on their innate characteristic and how they learned since childhood (Flanagan, C., 1999), the place for their socialization may be different too the characteristic of which might even be hard to tell. Unfortunately research on sociability as part of socio-psychological aspects of consumer in relation to the need of place for eating is very scarce. Therefore a question of how eating-places can be set up for satisfying the need for informal gathering to cultivate our social life may not easily be answered.

Colors, lighting and décor are some of common major elements of physical service environment. This study tries to explore how these support people’s eating intention on dining with a friend/s and with a special friend? Which of these elements play most significant role than the other to encourage sociability for each social dining intention? We hope to find elements of interior easy and inexpensive so that the application of these can attract customers making the service businesses more competitive. We assume that participants would be more satisfied if their positive responses are higher. Based on this assumption we propose two hypotheses as follows:

Hypothesis 1: The change of variable of interior elements will have a significant effect on the subjects’ psychological responses on dining with a friend/s

Hypothesis 2: The change of variable of interior elements will have a significant effect on the subjects’ psychological responses on dining with a special friend

2. Literature Review

Sociability is part of five basic inborn personality attributes along with “ activity level, irritability or emotionality, soot ability and fearfulness” Goldsmith et. al (1987) said as Flanagan (1999) quotes, the human complexity of which might be even more when people are incidentally placed with unexpected environmental influences. For example, environmental stress such as severe temperature, humidity, ventilation, vibration, noise and glare may all become irritating for a couple to talk (Wheldall, 1975).

In terms of how environmental settings support orientation of people when talking, Gifford and Gallagher (1985) theorize that beside person-based variables and social context, physical settings are important factors, which influence how people interact each other. They regulate how furniture should be arranged in order that conversation can work effectively. However, apart from how environment should practically support social interaction, people will also value whether an environment is appropriate or not for a particular motive depending on their perception and emotional response that may occur before, during and after they experience it. There are studies, which explore the effects of restaurant environment on consumer behavior. For example, Lin (2004) found that servicescapes offer a subsequent impression to the customers before being served. Therefore this relationship overshadows their contact with service staff. However it seems that we cannot learn from this study how customers react cognitively or emotionally to servicescape, which is important to assure an effective design of servicescape. To answer this issue, Ryu and Jang (2007) using structural equation modeling analysis found that facility aesthetics, involving visual cues like: furniture, color, lighting and décor, ambience (non visual cues) and employees influenced significantly on the level of customer pleasure, and particularly ambience and employees gave impact significantly to arousal. Liu and Jang (2009) using an extended model of Mehrabian and Russel model proved that all the environmental features of a restaurant, tangible or intangible one gave significant impact to those psychological responses of customer.. They concluded that it is vital to consider the effect of restaurant atmosphere to enhance customers’ perceived value to ensure their return patronage.

However, correlational studies between environment and customer behavior discussed above are not in the context of a particular dining motive, which is important to consider. In fact the success of satisfying customer is not only determined by that relationship in isolation but also by other factors, factor of meal partner or other guests. The existence of a restaurant, café or any other form of eating-place is now a spatial representation of social formation where people, a couple of friends, relatives or lovers meet (Diane, 2005). Good company either as customer’s eating companion/s or other guests is considered the most important factor to predict dining experience for the latter can become an important reference of how customers expect from the restaurant in terms of financial value, said Anderson and Mossberg (2004) as quoted by Azizi (2010). Oldenburg (1997) gives a clue that people may tend to seek informal eating or drinking places as “neutral ground”, which allow everybody to come, be humble, and lead them to create a sense of belonging for the places making them feel free and fun to talk about personal, community and world issues. On the contrary, there might be the case when places fail to welcome or attract people because they cannot meet those criteria.

From the above reviews it is obvious that perception, emotion and behavior of customers as well as the presence of their eating companions are important socio-psychological factors that determine their eating experience satisfaction. But there is no detailed explanation how service environment should be prepared to achieve that goal in the context of social eating intention.

3. Method of research

3.1. Participants

Participants were asked from 162 senior students or aged between nineteen and twenty two years of age. They were selected from a survey to 395 students based on their willingness for participation and views on social dining attitude to make sure how familiar they are on the research issue. They were then grouped into eight groups of twenty except one other is twenty-two. In return for their participation a voucher of beverage at a café was given as a compliment.

3.2. Design of experiment

To answer the research questions an experimental method specifically stimulus response experiment will be applied. Three factors of restaurant interior environment including colors, lighting and décors will be examined, and in order to study more detail on them each of these factors was developed into two levels making up all these factors into 8 different conditions, as independent variables, described in detail later.

The dependent variables were psychological factors consisting of perceived sociability, emotional response and behavioral intention, which were prepared in the questionnaires and to be filled in by the participants during the experiment.

Eight groups of participants of 20 set up from 162 students were independently assigned to value eight different pictures (between subject designs) according to the psychological responses described above. Each group of them carried out two trials; the first trial was to evaluate one picture in the context of dining with a friend/s and the second, evaluation performed to the same picture in the context of dining with a special friend.

3.3. Stimulus, questionnaire and facility

In this experiment we use a digital simulation to consider the practicality and effectiveness of the experiment. In fact, such technique of visual simulation has been widely used for a visual perception and behavioral response experiment. The simulation was developed using 3D-Max computer graphic software to create eight different pictures of restaurant interior atmosphere based on one model of a restaurant. This model shows a corner of simple restaurant interior with some sets of chairs and tables, which become a fixed element except the colors of the wall, ceiling, floor, the table cloth, the pendant lamps, and the décors, the design of which considered some general criteria appropriate for common casual dining space that is accessible, simple and informal (Oldenburg, 1997).

Eight pictures were differentiated based on that model, each of which uses one alternative level of color, lighting and décor turning them into eight different restaurant interiors resulted from 2 levels of color (monochromatic and complementary colors) x 2 levels of lighting quality (bright and dim lighting) x 2 levels of décor qualities (elaborate and plain decors), see Table 1 below.

Table 1. Scheme of research stimuli

Monochromatic Color Scheme		Complementary Color Scheme	
	Bright Lighting	Dim Lighting	
Elaborate Decor	Elaborate Decor Bright Lighting Monochromatic Color	Elaborate Decor Dim Lighting Monochromatic Color	Elaborate Decor Bright Lighting Complementary Color
	Elaborate Decor Dim Lighting Complementary Color	Elaborate Decor Bright Lighting Complementary Color	Elaborate Decor Dim Lighting Complementary Color
Plain Decor	Plain Decor Bright Lighting Monochromatic Color	Plain Decor Dim Lighting Monochromatic Color	Plain Decor Bright Lighting Complementary Color
	Plain Decor Dim Lighting Complementary Color	Plain Decor Bright Lighting Complementary Color	Plain Decor Dim Lighting Complementary Color

The color schemes (monochromatic and complementary color) applied in these pictures were defined according to some principles of Mussel color harmony. The color specifications adopted Adobe RGB (1998) standard color as also applied by some researchers like Cheng, Lee and Lee (2007), Junko, Masashi, and Minoru (2006), which can also refer to chromaticity coordinates as described and shown on Figure 1-8 below.

Wall (RGB:178,131,87/ X: 0.5137,Y: 0.341)
Floor (RGB: 185,140,85/ X: 0.5490,Y: 0.3333)
Ceiling (RGB: 255,255,255/ X: 0.3457,Y: 0.3585)



Wall (RGB: 139,89,66/ X:0.3490,Y: 0.2588)
Floor (RGB: 175,115,55/ X:0.4509, Y: 0.2156)
Ceiling (RGB: 229,229,229/ X :0.3298, Y: 0.3340)



Fig. 1. Monochromatic color, bright lighting, elaborate décor; Fig. 2. Monochromatic color, dim lighting, elaborate decor

Wall (RGB: 129,203,176/ X: 0.7690,Y: 0.6901)
Floor (RGB: 185,140,85/ X: 0.5490,Y: 0.3333)
Ceiling (RGB:163,90,99/ X: 0.3529, Y: 0.3882)



Wall (RGB:89,132,112/ X: 0.5176,Y: 0.4392)
Floor (RGB:175,115,55/ X:0.4509, Y: 0.2156)
Ceiling (RGB:120,67,73/ X:0.2627,Y: 0.2862)



Fig. 3. Complementary color, bright lighting, elaborate décor; Fig. 4. Complementary color, dim lighting, elaborate décor

Wall (RGB:178,131,87/ X: 0.5137,Y: 0.341)
 Floor (RGB: 185,140,85/ X: 0.5490,Y: 0.3333)
 Ceiling(RGB:255,255,255/X:0.3457,Y:0.3585)



Wall (RGB: 139,89,66/ X:0.3490,Y: 0.2588)
 Floor (RGB: 175,115,55/ X:0.4509, Y: 0.2156)
 Ceiling (RGB: 229,229,229/ X :0.3298, Y: 0.3340)



Fig. 5. Monochromatic color, bright lighting, plain décor; Fig. 6. Monochromatic color, dim lighting, plain decor

Wall (RGB: 129,203,176/ X:0.7690,Y: 0.6901)
 Floor (RGB: 185,140,85/ X:0.5490,Y: 0.3333)
 Ceiling (RGB:163,90,99/ X:0.3529, Y: 0.3882)



Wall (RGB: 89,132,112/ X:0.5176,Y: 0.4392)
 Floor (RGB:175,115,55/ X:0.4509,Y: 0.2156)
 Ceiling (RGB:120,67,73/ X:0.2627,Y: 0.2862)



Fig. 7. Complementary colour, bright lighting, plain décor; Fig. 8. Complementary colour, dim lighting, plain decor

Beside the color factor specified above, the lighting in particular was set up to apply a different lamp and light setting in the computer. In the case of bright lighted restaurants, the lamp and light was set using fluorescent (day light) and 15.000 lm, and in the case of dim lighted restaurants: fluorescent (warm white) and 5.000 lm. In differentiating the images in terms of the décor variable (the paintings, plants, lighting armature) an exploratory approach was applied by considering the amount of décors (elaborate and plain) used as clearly shown on the pictures.

Relevant literature and experts were referred to develop how such dependant variables were measured, including Mehrabian and Russel (1974) and Ryu and Jang (2007). Interviews were also conducted with two groups of student to identity valuable clues in related to their social dining experiences. As a result, a questionnaire containing three sets of psychological response were defined including, perceived sociability, emotional response and behavioral intention, consisting of, first (15 pairs of perceptual adjective words): “appealing, attractive, welcoming, friendly, warm, hospitable, cozy, secure, private, convenient, homey, intimate, casual, familiar and unique” second (8 emotional adjective words): “happy, satisfied, bored, melancholic, awake, aroused, excited, and stimulated”; and third (3 behavioral statements): “want to revisit several times, to linger long, and do not mind to wait”, respectively. These variables were measured using seven point-scale semantic differential methods (+3 to -3).

To support this study a room of around 4 x 4 m², at the Human-behavior relationship research unit, Faculty of Fine Art and Design, Bandung Institute of Technology, Indonesia, designated for a lighting laboratory, was used for doing the experiment. In this room the illumination can be controlled to set it

free from any possible glare from daylight distraction. In addition, table lamps were also provided to make sure that when the experiment was running and the room light was set to dim in order that the projected image appeared clearly, the subjects could still clearly see the questionnaire. To facilitate the experiment four tables, chairs and equipments were provided for the research participants, researcher. The equipments used for the experiment were a new high lumen video projector SONY VPL-ES7: 2000 lm, and a large portable screen, MacBook laptop (Mac OSX Version 10.5.8, Processor 2.4 GHz Intel Core 2 Duo, Memory 2 GB 667 MHz DDR2 SDRAM) and portable projection screen.

3.4. Experimental Procedure

The picture was projected to the screen at around 2.5 m distance away from where the subjects sit. Each of the groups was independently assigned and only observed and rated one picture (between subject design). The order of presentation per session or day was not tightly regulated as it depended so much on the students' time availability, but since every group was independent, basically the presentation could be flexibly conducted. The presentation of picture was also not timely limited as we expected that the participants could observe it very carefully to ensure more convincing responses they could give.

4. Method of research

The mean scores for perceived sociability, emotional response, and behavioral intention on dining with a friend/s and with a special friend, see Figure 9, Figure 10 and Figure 11 respectively below. To find out whether there is a statistical difference in each of dependent variables between each of the groups, we run Anova tests. The change of interior condition in the case of dining with a friend/s did not show any statistically significant effect in all the variables either on the subjects' perceived sociability ($F=.802$, $P=.587$), emotion ($F=.969$, $P=.456$), and behavioral intention ($F=.571$, $P=.779$) respectively.

In the context of dining with a special friend the change of interior condition yielded a significant effect in the entire variables between some groups: perceived sociability ($F=4.366$, $P=.000$), emotion ($F=5.007$, $P=.000$), and behavioral intention ($F=6.698$, $P=.000$) respectively. The interior condition of group 6 applying monochromatic colors, dim lighting and plain décor resulted in a statistically significant difference in perceived sociability compared with the entire restaurant conditions, including with group 1

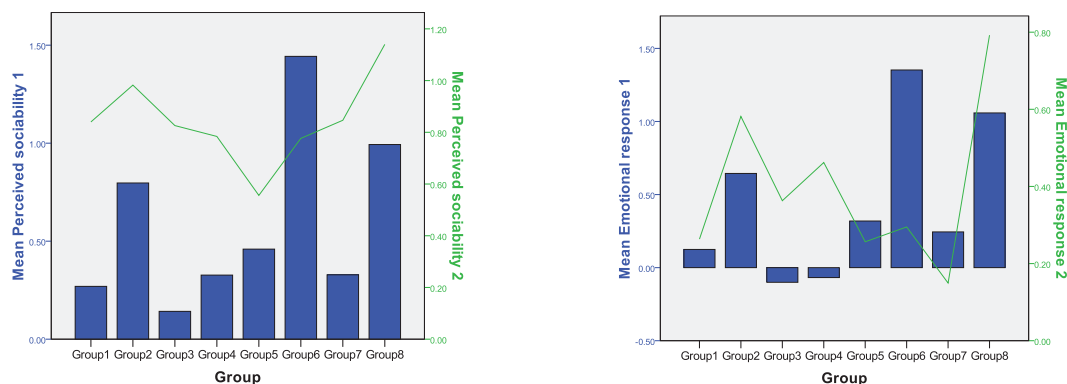


Fig. 9. Mean scores of perceived sociability on dining with a friend/s (col.) and dining with a special friend (line); Fig. 10. Mean scores of emotional response on dining with a friend/s (col.) and dining with a special friend (line)

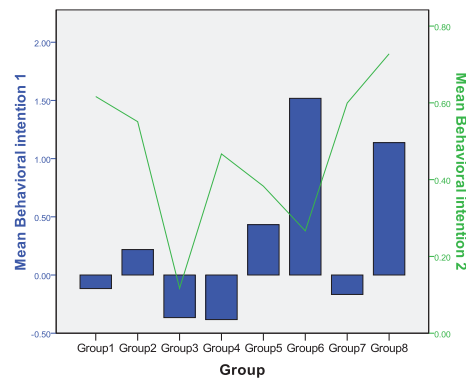


Fig. 11. Mean of scores of behavioral intention on dining with a friend/s (col.) and dining with a special friend (line)

(monochromatic colors, bright lighting, and elaborate décor – Mean diff.: 9.800, $P=.009$), group 3 (complementary colors, bright lighting, and elaborate décor–Mean diff.=11.600, $P=.001$), group 4 (complementary colors, dim lighting and elaborate décor - Mean diff. 11.350, $P=.001$), group 7 (complementary colors, bright lighting, and plain décor–Mean diff.=8.850, $P=.027$). But it was not significantly different with group 2 (monochromatic colors, dim lighting and elaborate décor–Mean diff.=5.650, $P=.422$), group 5 (monochromatic colors, bright lighting, and plain décor – Mean diff. =8.250, $P=.052$) and group 8 applying complementary colors, dim lighting, and plain décor- (Mean diff.=2.345, $P=.987$). With regard to emotional response, group 6 also resulted in a significant difference compared with group 1 (Mean Diff.=2.850, $P=.004$), group 3 (Mean diff.=19.450, $P=.001$), group 4 (Mean diff.= 16.700, $P=.008$), group5 (Mean diff.=14.700, $P=.031$) and group 7 (Mean diff. 16.650, $P=.008$), whereas with group 2 and group 8, it did not show any significant difference. Comparing with the previous result, only with group 5 their result was different. However if we notice, the P value of group 5 in comparison with group 6 is only a little larger than the significant value: .052, so between perceived sociability and emotional value it seems that the interior condition of group 6 compared with the rest of the group can be considered the same.

Similar to the previous variables, group 6 in behavioral intention showed a significant difference with almost the entire groups including with group 1 (Mean diff.=4.900, $P=.001$), group 2 (Mean diff.=3.900, $P=.024$), group 3 (Mean diff. = 5.650, $P=.000$), group 4 (Mean diff.=5.700, $P=.000$), and group 7 (Mean diff. =5.050, $P=.001$), whereas with group 5 and group 8 it did not show any significant difference (Mean diff.= 3.250, $P=.110$ and Mean diff.=1.141, $P=.974$ respectively).

Two tailed t -tests were also run to see differences in any variable within subjects in each of the groups. The basic objective of such test is to find out how social dining motives influence the way the subjects value the restaurant interior. In this experiment we compared their valuations of the restaurants between dining with a friend/s and dining with a special friend. In the case of perception of sociability group 1 ($t=4.498$, $df=19$, $Sig.=.000$), group 3 ($t=2.944$, $df=19$, $Sig.=.008$), group 4 ($t=-2.880$, $df=19$, $Sig.=.008$), group 6 ($t=-2.718$, $df=19$, $Sig.=.010$) and group 7 ($t=14.812$, $df=19$, $Sig.=.030$) the results showed a statistical difference between the two dining occasions, whereas in the case of emotional response the significant differences only occurred on group 4 ($t=2.658$, $df=19$, $Sig.=.016$) and group 6 ($t=-4.379$, $df=19$, $Sig.=.000$). Similar to the result of t -test of the groups in perception, group 1 ($t=3.584$, $df=19$,

Sig.=.002) group 4 ($t=4.579$, $df=19$, Sig.=.016), group 6 ($t=-1.279$, $df=19$, Sig.=.005) and group 7 ($t=2.299$, $df=19$, Sig.=.033) also showed a significant difference in behavioral intention.

From the Anova test result we notice that in the case of dining with a/friends it seems that the subjects was not so sensitive with the manipulation of interior element as there was no statistical difference between one group to another. Referring to one of behavior-environment relationship theories that is, stimulation theory (Kopec, 2006), we can also say that none of the groups could benefit more from the stimulation of its restaurant atmosphere than the other, because it seemed that the subjects did not rate any of the eight restaurants significantly stronger than the other. Such finding can also imply that casual relationships between customers may not need a specially conditioned interior environment to support their dining motives. In addition, from the perspective of restaurant design, the insignificant different responses toward any of the groups given by the subjects may also be resulted from the fact that all the conditions was considered acceptable, or the difference of interior condition was not too bad for them to dine with a friend/s.

In the case of dining with a special friend, the significant differences in the way people psychologically valued the restaurant atmosphere were clearly shown. The subjects of group 6 rating a restaurant with monochromatic color, dim lighting and plain décor performed the highest positive perceived, emotional and behavioral value compared with most of other groups. This means that such environmental condition was effective to stimulate the subjects in the way they perceive, feel and behave towards the restaurant when dining on a date. Their preference of such atmosphere may come from the fact that all the elements is not visually stimulating as the colors are less contrast, the light level is moderately low, and the décor is much simpler, which may be required for a couple to have a relaxing and romantic chat. Of all these elements, the lighting characteristic is the most effective one to stimulate the subjects' motivation for such dining motive. With a moderately low level of light, the application of complementary color or of elaborate décor could still be effective to support that dining occasion as shown in group 2, group 5 and group 8, which are not significantly different from group 6 in most of the variables evaluated.

From this Anova tests result in some variables we can prove that atmospheric quality as created by the three elements used in this experiment have effects on the subjects' perception of sociability, emotional, and behavioral intention, which was consistent to Mehrabian and Russell theory.

In addition, the perceived sociability and emotional response towards the restaurant interiors seemed to have a strong relationship to one another as indicated by their very similar results. However, in the case of behavioral intention the subjects seemed not to be very strongly influenced by what they perceived and felt. This was indicated by a slight different result with that of the previous variables. This finding seemed to be quite consistent with the previous statements of Woodruff (1997; Parasuraman and Grewal (2000); Cronin et.al (2000) as quoted by Liu and Jang (2009) stating that perceived values have effects on behavioral intentions.

From the T-test's result we could infer that only in group 1, group 4, group 6, and group 7 the subjects responded significantly different in related to the two dining motives. However, only with the output of the Anova test we can infer more consistently why the differences occurred. For example, we notice that group 1 was not preferable for dining with a special friend, as well as group 4 and group 7. Because, beside that these groups were statistically difference from group 6 in the Anova test in the case of dining with a special friend, group 1 probably was too bright, and the elaborate décor was visually too striking, whereas in group 4 although the lighting was dim but it seemed that the complementary color and elaborate décor might be too stimulating, and group 7, although the décor was plain but it might seem that stimulating effects resulted from the complementary colors and the bright lighting was not appropriate for dining on a date. Indeed, when these two elements are used effectively they may become a strategic element to stimulate people, otherwise people will easily feel unpleasant and avoid.

5. Conclusion

The study of interior elements and its effect on social behavior is still immature. Regardless of this study's weaknesses, such initiative shares one of the lacking reference that offers evidence on the fact that colors, lighting and décor do influence social dining behavior. The colors, lighting and décors, used as physical stimuli in this experiment were defined by qualitative approach, because this study is still considered exploratory. As a consequence this study may give fairly limited implication to the profession. In the future, when the similar stimuli are used, a more quantitative approach using standardized measure may be suggested to expect broader practical implication. In addition, a more focused of research could be suggested considering the particular finding of this study, for instance: the lighting, which plays most important role in creating intimate spaces. In this case, some measurable quality of lighting, for instance illuminance level, types of luminaries and luminance distribution may be considered for future study. Beside the eating places used in this study other commercial places where more specific sociability may also profoundly occur could also be considered. In fact, this exploratory study found that the character of social relationship influenced differently to the way people select atmosphere. However, the social relationships we studied as mediator for social dining were common, and there are still many more complex relationship people may create, whose social dining mediation-role may even be more complex leading to a more sophisticated need of restaurant atmosphere. In addition, we have not also considered the cultural influences (Rozin, P. et.al. 2002, Prescott, et.al., 2002) or any other personal attributes of the subjects, which may become an important moderator in how their relationship influence the way they choose a restaurant. For example, Japanese couples may choose a different dining atmosphere compared to Western couples. A similar question may be raised for those with different age, religion or lifestyles. All these curiosities are crucial as they are potential customers for service business industries. We, design scientists are in need for some more clues from them to create guidelines for designers, which may need a distinctive modus operandi to explore, as how this study has introduced for studying the effects of environmental stimuli on human social behavior in a non-dining setting.

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References

- Azizi, T. (2010). *The Dining Experience*. Canada. The University of Lethbridge
- Cheng, H., Lee, K., & Lee, H. (2007). *Color Preference of the Korean Elderly*. International Association of Societies of Design Research, The Hongkong Polytechnic University.
- Diane, S. (2005). Environmental distinctions: the discriminating dining environment. *Les Cahiers du CICALS*, 6, 55-7.
- Flanagan, C. (1999). *Early Socialisation: Sociability and attachment*. London, Routledge Modular Psychology Series.
- Gifford, R. & Gallagher, M.B. (1985). Sociability: Personality, Social Context, and Physical Setting. *Journal of Personality and Social Psychology*, 48, 1015-1023.
- Junko, I., Masashi, N., & Minoru, M. (2006). The Influence of colors on the psychological image of the wooden interior: application of the image analysis in consideration of the accent color. *Zairyo*, 55, 373-377.
- Kopeck, D. (2006). *Environmental Psychology for Design*. New York, Fairchild Publications, Inc.
- Lin, I.Y. (2004). Evaluating servicescape: the effect of cognition and emotion. *Hospitality Management*, 23, 163-178.

- Liu, Y. & Jang, S. (2009). *The Effects of Dinning Atmospherics; An extended Mehrabian-Russel model*. International Journal of Hospitality Management, 28, 494-503.
- Macht, M., Meiningier, J., & Roth, J. (2005). The Pleasures of Eating: a Qualitative Analysis. *Journal of Happiness Studies*. 6, 137-160
- Mehrabian, A., and Russel, J.A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA: MIT Press.
- Oldenburg, R. (1997). *Great Good Place*, Cambridge, Da Capo Press
- Pine, J & Gilmore J.H. (1999). *The Experience Economy*. Boston, Harvard Business School Press
- Prescott, J., Young, O., O'Neill, L., Yau, N.J.N., & Stevens, R. (2002). Motives for food choice: a comparison of consumers from Japan, Taiwan, Malaysia and New Zealand. *Food Quality and Preference*, 13, 489-495.
- Rozin, P., Kruzer, N.C., & Cohen, A. (2002). Free Associations to "food": the effects of gender, generation, and culture. *Journal of Research in Personality*, 36, 419-441.
- Scott, N., Laws, E., & Boksberger, P. (2009). The marketing of Hospitality and Leisure Experiences, *Journal of Hospitality Marketing & Management*, 18, 99-110.
- Wansink, B. (2006). *Mindless Eating: Why we eat more than we think*. New York, Bantam Books.
- Wheldall, K. (1975). *Social Behavior: Key problems and social relevance*. London, Methuen.