The Mediating and Moderating Role of Mood in Stimulus – Organism – Response Model

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ABSTRACT

The popularity of coffee drinking in Malaysia has attracted a lot of local and international retailers to invest in specialist coffeehouse chains. This study adapts the Stimulus – Organism – Response (SOR) model which has been used widely in the retailing environment. Past studies have suggested the role of mood in the SOR model. However, inconsistence in the findings regarding the role of mood in the SOR model has led this study to examine how mood is related to stimulus and response. A consumer intercept survey was conducted to collect data and a total of 377 questionnaires collected from customers of an international and a local coffeehouse chain. The Structural Equation Model was performed to analyse the data. The results indicate that mood has a mediating effect on the influence of stimulus towards customer response. Implications are suggestions to specialist coffeehouses for successful businesses.

Keywords: Stimulus, Organism, Response, Mood

INTRODUCTION

The coffee drinking culture has become popular in Malaysia, attracting a big number of specialist coffee retailers to invest in the store environment. In 2011, coffee sales were RM37.28 million and are projected to increase to RM42.90 in 2016 (Business Monitor International Ltd, 2012). Business Monitor International Ltd (2012) reports that Malaysia's café culture boom is likely to slow down marginally, but customers will look for premium coffee products and brands. In a competitive environment, local coffeehouses have to put in a lot of efforts to create a unique store environment to attract patrons. Old Town White Coffee coffeehouse has established itself as one of the largest operators of café chains in Malaysia with a total revenue of RM255,133 million (Insage.com, 2011). The competition is getting harder with specialist international brand coffeehouses such as Starbucks and Coffee Bean increasing their investment in Malaysia. Starbucks, the largest coffeehouse in the world, entered the Malaysian market in 1998. In 2013, Starbucks had 129 stores operating in Malaysia (Starbucks.com, 2013) and Old Town White Coffee, a Malaysian local coffeehouse, had franchised 224 stores (Starbucks.com, 2013). The competition between international and local coffee-house has been getting tougher. This work represents a rare study of the SOR model focusing on the specialist coffee house store.

Past literature has suggested that the Mehrabian and Russell affect model can be adopted to understand the effect of environments on customer behaviour (Baker, Levy & Grewal, 1992; Vieira, 2013). Most research in retailing has adopted the Mehrabian and Russell affect model and introduced the Stimulus–Organism–Response (SOR) model that requires a stimulus, a set of mediating variables, and behavioural responses (Spies, Hesse & Loesch, 1997; Turley & Milliman, 2000; Yoo, Park & Maclinnis, 1998; Vieira, 2013). The model indicates that the environment created (S – Stimulus) can influence customer mood and emotion (O – Organism) and evoke behaviour response (R – Response). Although a lot of research has adopted the SOR model in retailing, the results are inconsistent and no general model has been introduced. Gardner (1985) suggested that researchers can investigate the role of mood in understanding consumer behaviour, since small changes in environments may influence consumers' mood.

Past literature indicates that moods have consistently been shown to play an important role in the retail shopping experiences as an organism in the SOR model (Arnold & Reynolds 2009; Elen, D'Heer, Geuens & Vermeir, 2013; Gardner, 1985; Turley & Milliman, 2000). Gardner (1985) indicated that mood has an important effect on consumer behaviour, especially in the service industry. Arnold and Reynolds (2009) explained that very few studies have examined how mood influences

customer response. Past literature has suggested that two types of role are played by mood between stimulus and response. Firstly, mood has been identified as the mediator (Fiore & Kim, 2007; Gardner, 1985; Lam, Chan, Fong & Lo, 2011). Secondly, mood plays as the role of moderator (De Rojas & Camarero, 2008; Elen et al., 2013). Based on the contradictions in past literature results, additional study is needed to better understand how mood influences the relationship between stimulus and response. Therefore, this study aims to fill the gap to identify the role of mood in the SOR model.

LITERATURE REVIEW

The influence of the Mehrabian and Russell affect model has never been denied by past literature. The SOR model consists of stimulus as an independent variable, organism as mediator, and response as the dependent variable (e.g., Turley & Milliman, 2000; Yoo et al., 1998; Vieira, 2013). Most past literature, except for Daunt and Harris (2012), Lin (2004), and Wong, Osman, Jamaluddin and Chan (2012), has agreed on the three basic variables in developing a retailing model. The dimensions of each variable are varied in past literature (Table 1). For that reason, Turley and Milliman (2000) reviewed literature from 1975 to 1997 on the effect of atmosphere on buying behaviour. This study further reviews literature after 1997 that relates to the adaptation of the SOR model in service industries (Daunt & Harris, 2012; Dong & Siu, 2013; Kim & Moon, 2009; Lam et al., 2011; Walsh, Shiu, Hassan, Michaelidou & Beatty, 2011). Although a number of studies have been conducted on the adaptation of the SOR model in the service industries, current research does not provide an explanation for the effect of mood.

Table 1 shows that emotion has been suggested as playing an important role in the SOR model. Most past literature agrees on the role of emotion as the mediator between stimulus and response (e.g., Lin, 2004; Yoo et al., 1998; Vieira, 2013; Walsh et al., 2011). Gardner (1985) explained that emotion is different compared to mood. Mood usually affects the behaviour of customers more directly and indirectly. Since the impact of the stimulus is beyond a customer's emotion, the effects of mood cannot be denied. For that reason, Moody, Kinderman, and Sinha (2010) introduced both mood and emotion as the mediator. Spies et al., (1997) claimed that very little research had introduced mood as the mediator in the SOR model. The effect of mood on consumer behaviour has been an important issue in retailing studies (Gamble, Garling, Vastfjall, & Marell, 2005) and has been central in studies of retailing model (Arnold & Reynolds, 2009).

Spies et al., (1997) and Gardner (1985) indicated very few studies have attempted to investigate the effects of store environment on customers' mood as the mediator. Spies et al., (1997) specified that mood mediates the relationship between the store atmosphere and the customer's satisfaction and purchasing behaviour. Swinyard (2003), and Yildirim, Akalin-Baskaya and Hidayetoglu (2007) indicated that consumer mood is influenced by the store atmosphere. As a consequence, mood has been found to be associated with customers' evaluation (Bambauer-Sachse & Gierl, 2009; Gardner, 1985). Additionally, Arnold and Reynolds (2009) found mood is directly influenced by marketing stimulus and influences customer reaction. The above findings lead to the following hypothesis:

Table 1: Summary of SOR model

CITATION	INDUSTRY	STIMULUS	ORGANISM	STORE ATTITUDES
Yoo et al (1998)	Retailing	1. Product Assortment 2. Value of Merchandise 3. Salesperson Service 4. After Sale Service 5. Facilities 6. Atmosphere 7. Store Location	Positive Emotions Negative Emotions	Store Attitudes
Turley and Milliman (2000)	Review Past Literature	1. Exterior 2. General Interior 3. Store Layout Interior Displays 4. Human Variables	Employees Customers	Employees Customers
Lin (2004)	Review	1. Visual cues 2. Auditory cues 3. Olfactory Cues	–	1. Emotional response 2. Cognition 3. Behavioural

Kaltcheva and Weitz (2006)	Experiment, participants' view computer screens	Environment characteristics	Arousal Pleasantness	Shopping behaviour
Fiore and Kim (2007)	Literature	1. Ambient cues 2. Design cues 3. Social cues	1. Cognition 2. Consciousness 3. Affect 4. Emotion	1. Actual resource expenditure 2. Perceived resource expenditure 3. Behavioural intentions 4. Composite measures
Kim and Moon (2009)	Restaurant	1. Facility Aesthetics 2. Layout 3. Electric Equipment 4. Seating Comfort 5. Ambient conditions	Pleasure-feeling Perceived Service Quality	Revisit Intention
Lam et al. (2011)	Casino	1. Ambience 2. Navigation 3. Seating Comfort 4. Interior décor 5. Cleanliness	Customer Satisfaction 1. Cognitive 2. Affective	1. Desire to Stay 2. Intention to revisit
Walsh, et al. (2011)	Coffee Shops	1. In-store music 2. In-store aroma 3. Merchandise quality 4. Service quality 5. Price	Emotions (Arousal, Pleasure)	Outcome 1. Store satisfaction 2. Store loyalty
Daunt and Harris (2012)	Hospitality	1. Physical Servicescape 2. Social Servicescape	–	Customer disaffection (Inequity, Dissatisfaction)
Wong, et al. (2012)	Shopping mall	1. Mall/store quality 2. Quality of merchandise 3. Convenience 4. Enhancements 5. Price orientation	–	Shopping enjoyment
Dong and Siu (2013)	Theme park visitors	1. Substantive staging (background, functional) 2. Communicative Staging (Employee behaviour, employee image, cultural, atmospherics)	Service experience Evaluation	1. Experience Intensification 2. Experience Extension
Vieira (2013)	Past literature review	The Environment Characteristic	Emotional - Pleasure - Arousal - Dominance	Shopping Behaviour

H1: Mood has mediating effect on the influence of stimulus towards customer response.

Gamble et al., (2005) found the moderating effects of mood on consumer choice. Based on previous findings, different results were reported by De Rojas and Camarero (2008), and Elen et al., (2013), who suggested that mood plays a role as moderator between stimulus and response. Elen et al., (2013) indicated various explanations for mood effects on consumer behaviour. The study explained that people have a tendency of not using cognition, but rely more on their mood in processing information. Because of the influence of mood on information processing, the study suggested that mood plays a role of moderator in consumer behaviour. Based on the suggestion above, the following

hypothesis was developed. Figure 1 illustrates the research framework.

H2: Mood has a moderating effect on the influence of stimulus toward customer response.

METHOD & MATERIALS

A total of 400 questionnaires were distributed using consumer intercept to the customers of an international and a local coffee houses. Both of these were selected because they are the largest international and local houses in Malaysia. This exclusion is based on the suggestion by Malhotra (2002). The customers were selected because they are directly involved in the service operation and are knowledgeable about the
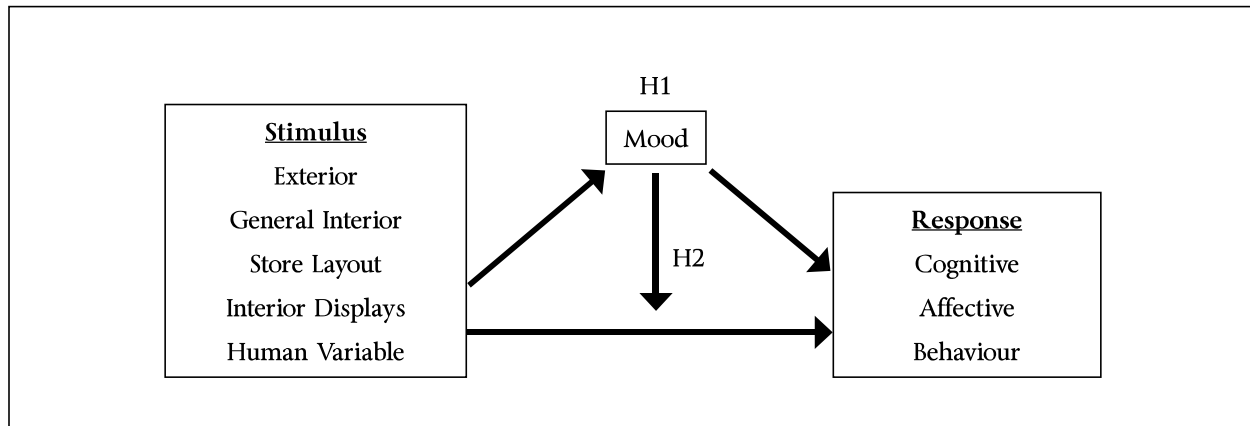
Figure 1: Research Framework

subject under study. The sample was not randomly selected; convenience sampling was adopted. Out of 400 questionnaires distributed, 377 (94.25%) were usable and valid for analyses while 23 had to be dropped due to incomplete response. The usable questionnaires obtained were above the acceptable response rate of 70% as suggested by past literature. Respondents consisted of 50.90% from the international coffee house and 49.1% from the local coffeehouse.

The instrument was developed based on previous studies, which consists of three variables, namely stimulus, mood, and response. The items assessed five dimensions of the stimulus, including exterior, interior, layout, display, and human. The stimulus consists of 33 items from past literature (Daunt & Harris, 2012; Dong & Siu, 2013; Kim & Moon, 2009; Lam et al., 2011; Lin, 2004; Turley & Milliman, 2000; Wong et al., 2012; Yoo et al., 1998; Walsh et al., 2011). The mood consists of 6 items and the items were adopted from Bambauer-Sachse and Gierl (2009), and Kim and Mattila (2010). The response consists of three dimensions (cognitive, affective, and behavioural) and 17 items adopted from Bruggen, Foubert, and Gremler (2011). A five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree was used.

The results of the reliability test show Cronbach's alpha for dimensions of organizational climate that ranged from 0.62 to 0.89 (Table 2). Confirmation Factor Analysis (CFA) was performed to check the validity of the instrument. All items were loaded above 0.50 and the Average Variance Extracted (AVE) was above 0.50 (Table 2). Therefore, no items needed to be dropped from the factors. The results of the standard deviations

(SD) and skewness values did not suggest problems with the assumptions of normality.

FINDINGS AND DISCUSSION

Structural Equation Model (SEM) test was performed to investigate the mediating and moderating role of mood on the influence of stimulus towards customer response. Table 3 presents the results. Both the goodness-of-fit index (CFI) and normed fit index (NFI) values exceeded the recommended 0.90. The root mean squared error of approximation (RMSEA) for mood as a moderator between stimulus and response was slightly high compared with an accepted level of 0.08, but for mood as the mediator role was less than the recommended value. Overall, the proposed model provided an acceptable fit to the data.

The hypothesized relationships in the model were assessed and the results are shown in Table 4. With respect to the mediating effect of mood, the stimulus significantly influenced the response (β=0.49, p=0.001). The stimulus significantly and positively influenced mood (β=0. 89, p=0. 001), and the mood significantly influenced the response (p=0. 26, p=0. 001). The regression weight for mood as mediator was significant (p<0.01), but not significant as moderator (p>0.05).

To determine whether the influence of the stimulus on response is partially mediated by mood, bootstrapping was employed and found the standardized indirect effects of stimulus toward response equal to 0.22. Therefore, mood was found to play a role as mediator between stimulus and response. Figure 2 illustrates the role of mood as mediator and Figure 3 illustrates the role of mood as moderator. These results suggest

Table 2: Descriptive Analysis

VARIABLE	DIMENSIONS	NO. OF ITEMS	CRONBACH'S ALPHA	AVE	MEAN	SD	SKEWNESS
Stimulation	Exterior	6	0.78	0.60	3.37	0.67	-0.16
	General Interior	11	0.87	0.61	3.43	0.64	-0.43
	Store Layout	7	0.81	0.62	3.37	0.63	-0.31
	Interior Display	3	0.75	0.71	3.38	0.77	-0.28
	Human Variable	6	0.84	0.69	3.38	0.71	-0.27
Organism	Mood	6	0.85	0.59	3.37	0.72	-0.43
Response	Cognitive	4	0.81	0.73	3.41	0.77	-0.28
	Affective	4	0.81	0.73	3.47	0.75	-0.32
	Behavioural	9	0.91	0.73	3.28	0.76	-0.27

that mood does not play a dual role in influencing the relationship between stimulus and customers' response.

Hypothesis 1 (H1) is supported and consistent with Arnold and Reynolds (2009), Bambauer-Sachse and Gierl (2009), Spies et al. (1997), and Swinyard (2003). The indirect effect of mood was found to answer Gardner's (1985) doubt. Hypothesis 2 (H2) was not supported and not consistent with De Rojas and Camarero (2008) and Elen et al., (2013). The results should come as no surprise, because the review of past literature of Fiore and Kim (2007) and Turley and Milliman (2000) found mood not listed as the moderator. Three possible moderators were identified from past literature, namely personal traits, demographic characteristics, and market segments (Fiore & Kim, 2007).

CONCLUSION & IMPLICATIONS

This study provides two conclusions. First, the results show that stimulus directly influences customer mood and has an indirect influence on customers' cognitive, affective, and behavioural responses. Second, the results found that mood does not play a role as moderator between stimulus and response as claimed by past literature.

This work represents a rare study of the SOR model focusing on the specialist coffeehouse store. This study further verifies the findings of past studies which confirm that the role of mood between stimulus and response. The results of this study contribute to theories of how mood influences the relationship between stimulus and response. The conceptual framework tested in this study helps explain the relationships of mood as the mediator in enhancing customers' response. Although

Table 3: Fit Indices of the Model

	χ^2	df	χ^2/df	GFI	NFI	RMSEA
Mediating	97.26	25	3.89	0.94	0.97	0.08
Moderating	143.69	25	4.64	0.93	0.97	0.09

Table 4: Regression Weights of the SOR Model

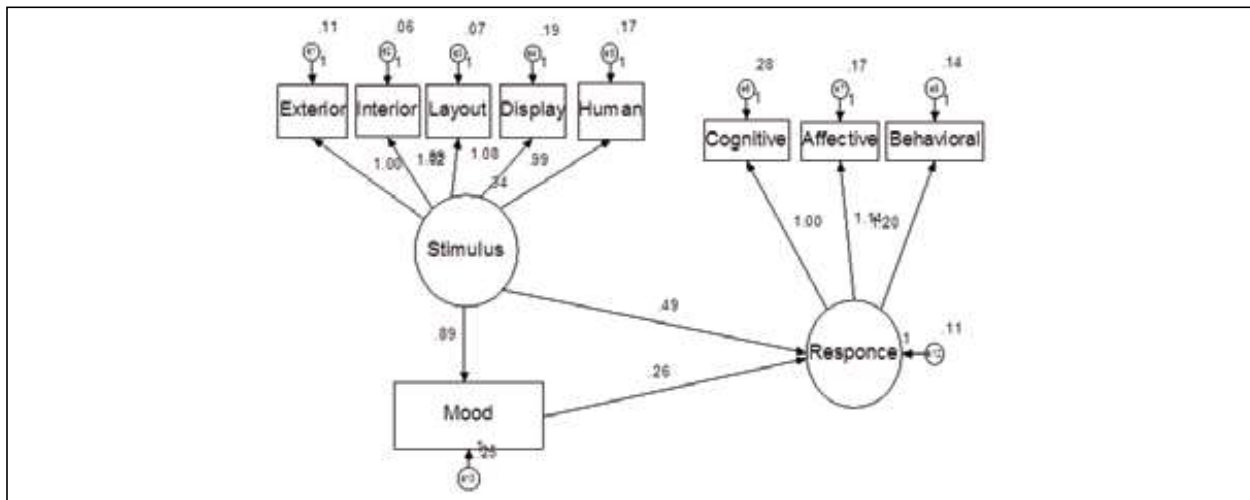| Mood			Mediator			Moderator		
	Path		Estimate	SE	p	Estimate	SE	p
Mood	←	Stimulus	0.89	0.054	0.001**	1.09	0.55	0.05*
Response	←	Mood	0.26	0.045	0.001**	0.26	0.06	0.07
Response	←	Stimulus	0.49	0.062	0.001**			
Response	←	Stimulus*Mood				-0.16	0.14	0.25

Note. *p<0.05, ** p<0.01
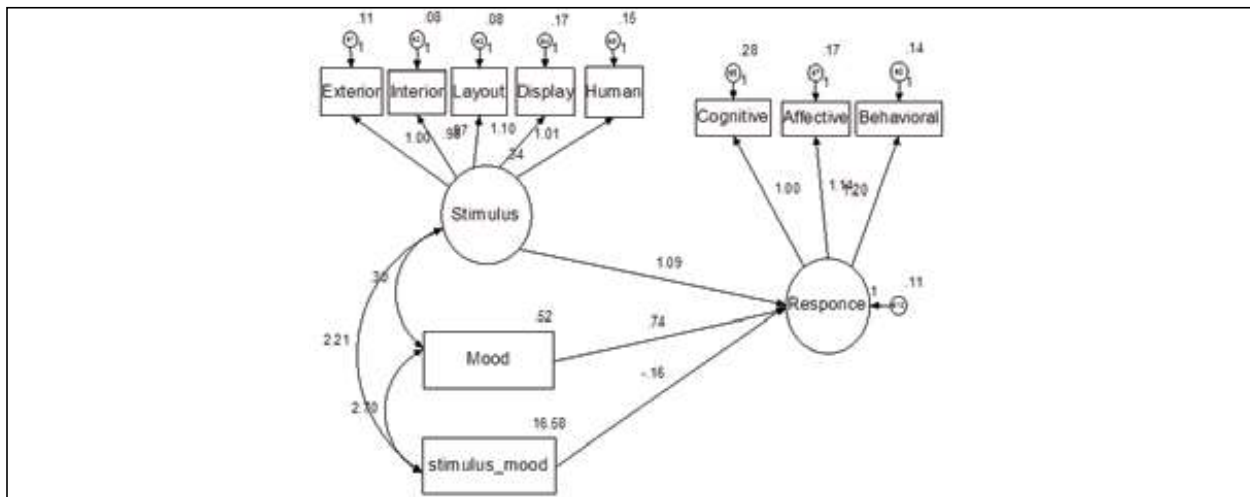
Figure 2: Mood as Mediator

Figure 3: Mood as Moderator

stimulus directly influences customer response, the stimulus by the retailer has a stronger influence on the customer's mood. Specialist coffeehouses invest a lot of money to ensure that their customers have an excellent environment while dining in their stores. This study provides insight into how customer mood influences customer response towards the store environment. Retailers can use different elements of the store environment to influence the mood of the customer. An employee that serves customers directly plays an important role to ensure the customer keeps a positive mood.

There are ample opportunities remaining for further research. First, the model may help researchers develop future research in identifying the role of mood in the SOR model. Moreover, future research may investigate new mediators and moderators in the SOR model. Second, the model can be tested with other coffeehouse stores involving more brands. Since the samples used in this study were only from two coffeehouse stores, the sampling may be biased. For the sake of generalisation, future studies should collect data that involve more stores. Another limitation pertains to the measurement of mood. Past literature shows the redundancy of items that load on the variables between mood and emotion. Future research may consider developing better instruments that clarify the dimensions of the organism. Finally, a moderator can be introduced in the model. Most past studies suggested various types of moderator such as personality, culture, and customers' involvement level. ∎

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