



## **INVESTIGATING POST-PURCHASE DISSONANCE WITHIN THE GROCERY SHOPPING CONTEXT: A STUDY USING VIRTUAL REALITY SIMULATION**

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### **Abstract:**

Retail strategies geared towards prolonging the stay of shoppers or influencing them to impulse buy can actually be contradicting to their financial and marketing goals if the utilitarian nature of grocery shoppers is disregarded. This retailer-shopper conflict arises from the need of grocery shoppers to accomplish their task quickly and effortlessly and the goal of the retailer to make them spend more while in the store. With shoppers being influenced to deviate from their shopping goals, they are able to experience cognitive dissonance in the form of regret, an undesirable state which may have a negative impact on their repatronage towards the store. As a key element of this study, how shoppers rationalize their feelings of regret to maintain positive feedback towards the store by engaging in positive affect search is also investigated. This study considered service encounters assortment variety and salesperson responsiveness and their influence on the time shoppers spend in the store. Furthermore, it aims to determine the effect of prolonged shopping time on cognitive dissonance, as well as the response of shoppers towards cognitive dissonance in terms of their positive affect search and repatronage intention. To achieve these objectives, a simulation of grocery shopping was conducted. Using Multiple Linear Regression (MLR), results indicate that prolonged shopping can cause cognitive dissonance. While cognitive dissonance can lower repatronage, shoppers may engage in positive affect search to sustain it. With these findings, retailers can be aware of what drives customer repatronage in the grocery setting, which is rooted from the minimization of post-purchase dissonance. More importantly, despite modifying the store to prolong the stay of shoppers, it must be ensured that a good shopping experience must be instilled for shoppers to come back to the store.

**Key Words:** grocery shopping; utilitarian value; cognitive dissonance; service encounters; internal information search

### **1. INTRODUCTION**

Taking advantage of the services has been the focal point of retailers, the purpose of which is to make the consumer spend as much money as possible, spend more time within the store, or be influenced to impulse buy. These goals have been incorporated on how retailers designed their services as a means to continuously curb the competition. Examples of which are the modification of product arrangements (Simonson, 1999), promotional selling, e.g. 'buy one take one' and price discounts (Grewal, Krishnan, Baker, & Borin, 1998), enticing product displays (Kaltcheva & Weitz,

2006), and product demonstrations from salespersons. These strategies are some of the ways in which the retailer is able to influence the behavior of the consumer in accordance to their financial and marketing goals. However, taking into account the prevailing motive of grocery shoppers which is utilitarian (Irani & Hanzae, 2011), these strategies can actually backfire on the retailer's goals. Being utilitarian, upon entering grocery stores most shoppers expect to finish the shopping task as quick as possible, especially those belonging in the high income group who give more importance on time than on money (Punj, 2012). This is because grocery shopping is considered to be routine, monotonous and unexciting (Larson, Bradlow, & Fader, 2005; Popkowski-Leszyc, Sinha, & Sahgal, 2004). If their utilitarian expectations are not satisfied, negative evaluations towards the store can be formed, thus repatronage suffers.

The retailer-shopper goal conflict is investigated in this study by incorporating Festinger's (1957) model of Cognitive Dissonance, which primarily argues that dissonance occurs due to the inconsistency between a person's belief and action. In the shopping context, the person's utilitarian shopping expectations is taken as their belief, and their actual shopping trip as their action. Therefore, this study aims to identify if prolonged shopping time, which is the inconsistency between their expected shopping time and actual time spent shopping, increases cognitive dissonance. Additionally, cognitive dissonance's negative relationship on satisfaction and repeat purchase has been studied abundantly in consumer goods industry and online retailing (Keng & Liao, 2009; Park, Cho, & Rao, 2012). Cognitive dissonance is considered an undesirable state, and thus rouses avoidance tendencies towards the store (Arnold & Reynolds, 2012). In this regard, this study also aims to identify if cognitive dissonance lowers repatronage. Lastly, Keng & Liao (2009) stated that one of the ways in which shoppers reduce cognitive dissonance is by engaging in internal information search. Simply put, it is the recall of positive aspects of the shopping experience to substantiate their decision, thereby lowering feelings of regret. Therefore, this study also aims to determine if positive affect search mediates between cognitive dissonance and repatronage intention. The complete framework is shown on Figure 1.

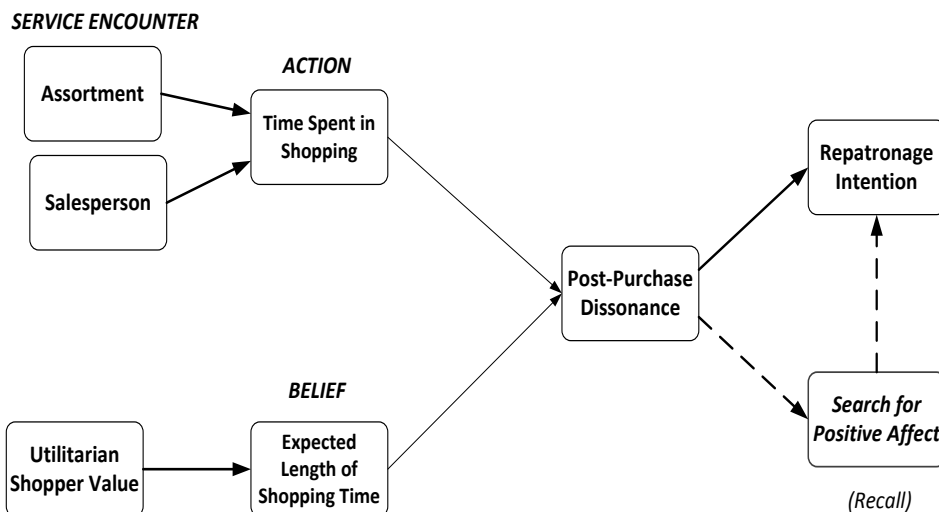


Figure 1: Cognitive Dissonance in the Grocery Shopping Context

## 2. METHODOLOGY

A respondent actually partaking in a grocery shopping task was studied. Thus, a grocery shopping environment where respondent can shop in was developed. The environment will allow the respondent to shop and roam freely, enabling them to make deliberate decisions on what products to purchase. In this regard, a virtual grocery store where respondents can be immersed in was created to simulate the shopping task (

**Figure 2).** In terms of suitability, non-immersive VR has been found to be sufficient in ensuring the involvement of the respondents when used as an experimental tool (Fencott, van Schaik, Ling, & Shafiullah, 2003; Lange, 2001). Assortment variety and salesperson responsiveness were the independent variables considered to manipulate the shopping time. These service encounters were chosen as these are deemed to be directly linked to the shopper's decision making (Borle, Boatwright, Kadane, Nunes, & Shmueli, 2005; E.Ketel, 2006; Oppewal & Koelemeijer, 2005; Shao & Shao, 2010).



Figure 2: Virtual Grocery Store

Overall, fifty two respondents were immersed in the virtual grocery store, and were provided with a shopping task and a shopping list to accomplish. Four different grocery stores were created, corresponding to the high and low levels of the independent variables. At the end of the experiment, the respondents were asked to answer a survey to measure four post-test variables – time spent shopping, post-purchase dissonance, repatronage intention and positive affect search. Multiple linear regression was used to analyze the relationships between the four post-test variables.



### 3. RESULTS AND DISCUSSION

The results show that when shoppers experience prolonged shopping time (i.e. shopping task took longer than they expected), feelings of cognitive dissonance arise. At the post-purchase stage, shoppers became aware that the time it took them to complete shopping was inconsistent with what they planned it to be. Additionally, cognitive dissonance was found to have a negative impact on repatronage intention; that is, the shopper is less likely to visit the store in the future due to feelings of dissonance. Most importantly, it was found that shoppers engage in positive affect search, in which despite prolonged shopping time, repatronage is still sustained. Shoppers were able to substantiate feelings of regret with regards to the time they have spent by recalling the positive aspects of the shopping experience, attributed to the assortment variety and salesperson responsiveness.

Table 1: Summary of Hypothesis Testing Results

Hypothesis (Direction)	Independent Variable	Dependent Variable	Result	P-Value	r <sup>2</sup>
1 (+)	Time Spent Shopping	Post-Purchase Dissonance	Supported	0.008	13.4%
2 (-)	Post-purchase dissonance	Repatronage Intention	Supported	0.001	20.8%
3 (-)PPD, (+)PAS	Post-purchase Dissonance Mediator: Positive Affect Search	Repatronage Intention	Supported	0.001	62.5%

### 4. CONCLUSIONS

Through this study, it was validated that cognitive dissonance manifests during the post-purchase stage, in which it is triggered by the prolonged shopping time of customers. By prolonging their shopping time, a conflict arises in their subconscious that is powerful enough for cognitive dissonance to manifest. Hence, by manipulating the store components to force the customers to stay longer, the retailers are causing a problem for the customers. The problem is that customers who experienced high cognitive dissonance will tend to avoid that same store. Although the customers stayed longer in the store and bought more grocery items, it does not guarantee that they were satisfied with the service experience they had in that grocery store. Fortunately, this study has also proven that the occurrence of high cognitive dissonance can be remedied. It was proven that in the context of grocery shopping high cognitive dissonance could be lessened through a positive reinforcement– in the form of positive affect search. This reinforcement has to do with a positive experience that the customer had during the shopping activity. In the scope of this study, assortment variety and salesperson responsiveness could induce that positive reinforcement that the customer would remember. Through that positive reinforcement, the customers will tend to go back to the same store even though they had experienced high cognitive dissonance from prolonged shopping time. Future researches may include the extension of using virtual reality as a tool for simulation in other fields, investigation of post-purchase dissonance in other service industries, and incorporation of affective design in services.



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## 6. REFERENCES

- Arnold, M., & Reynolds, K. (2012). Approach and Avoidance Motivation: Investigating Hedonic Consumption in a Retail Setting. *Journal of Retailing*, xxx, 1–13.
- Borle, S., Boatwright, P., Kadane, J., Nunes, J., & Shmueli, G. (2005). The Effects of Product Assortment Changes on Customer Retention. *Marketing Science*, 616–622.
- E.Ketel. (2006). *How Assortment Variety Affects Assortment Attractiveness: A Consumer Perspective*. Erasmus Research Institute of Management (ERIM). Erasmus University Rotterdam, Rotterdam.
- Fencott, C., van Schaik, P., Ling, J., & Shafiullah, M. (2003). The effects of movement of attractors and pictorial content of rewards on users' behaviour in virtual environments: an empirical study in the framework of perceptual opportunities. *Interacting with Computers*, 15(1), 121–140. doi:10.1016/S0953-5438(02)00030-9
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, California: Stanford University Press.
- Grewal, D., Krishnan, R., Baker, J., & Borin, N. (1998). The Effect of Store Name, Brand Name and Price Discounts on Consumer's Evaluations and Purchase Intentions. *Journal of Retailing*, 74(3), 331–352.
- Irani, N., & Hanzae, H. (2011). The effects of Iranian consumer's buying tendencies on utilitarian and hedonic shopping value. *African Journal of Business Management*, 7449–7460.
- Kaltcheva, V., & Weitz, B. (2006). When Should a Retailer Create an Exciting Store Environment? *Journal of Marketing*, 70, 107–118.
- Keng, C., & Liao, T. (2009). Consequences of Postpurchase Dissonance: The Mediating Role of an External Information Search. *Social Behavior and Personality*, 37(10), 1327–1340.



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- Lange, E. (2001). The limits of realism: perceptions of virtual landscapes. *Landscape and Urban Planning*, 54(1-4), 163–182. doi:10.1016/S0169-2046(01)00134-7
- Larson, J., Bradlow, E., & Fader, P. (2005). An Exploratory Look at Supermarket Shopping Paths. *International Journal of Research in Marketing Volume 22(4)*, 395–414.
- Oppewal, H., & Koelemeijer, K. (2005). More choice is better: Effects of assortment size and composition on assortment evaluation. *International Journal of Research in Marketing*, 45–60.
- Park, I., Cho, J., & Rao, H. R. (2012). The effect of pre- and post-service performance on consumer evaluation of online retailers. *Decision Support Systems*, 52(2), 415–426. doi:10.1016/j.dss.2011.10.001
- Popkowski-Leszyc, P., Sinha, A., & Sahgal, A. (2004). The Effect of Multi-Purpose Shopping on Pricing and Location Strategy for Grocery Stores. *Journal of Retailing*, 85–99.
- Punj, G. (2012). Income effects on relative importance of two online purchase goals: Saving time versus saving money? *Journal of Business Research*, 65(5), 634–640. doi:10.1016/j.jbusres.2011.03.003
- Shao, W., & Shao, G. (2010). Understanding choice-goal compatibility, dissonance and decision satisfaction. *Australasian Marketing Journal*, 19, 14–21.
- Simonson, I. (1999). The Effect of Product Assortment on Buyer Preferences. *Journal of Retailing*, 347–370.