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**The Impact of Impulsive Behavior on Fresh Produce Purchase: Do the Shopping
Companions Matter?**

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The Impact of Impulsive Behavior on Fresh Produce Purchase: Do the Shopping Companions Matter?

Xuqi Chen, Zhifeng Gao

Abstract

Impulsive purchase is defined as a consumer's unplanned buying behavior, which is of significance in marketing and consumer behavior. They usually occur when consumers experience a sudden urge to purchase something immediately without additional substantive evaluation, and execute based upon that urge. This study exams the influence of shopping companions upon consumers, with a particular focus on impulsive behavior. Previous literature has indicated a significant correlation between emotion and consumer final purchase decisions. However, few researchers before conducted the study studied the influence of various companions and their influence on consumers impulsive purchasing. Around 2,400 participants joined in this survey, gave their responses of most frequent grocery shopping companions and usual responses to the suggestions from these companions. In addition, participants' impulsiveness, emotion, and emotional level were tested and corresponding index was created. Results indicate that dad/mom and wife/husband were the two most frequent and influential grocery shopping companions. Participants were very likely to accept the impulsive suggestions from these two groups. As for the regression, multiple factors were found significant, while the results diverse when applying to different shopping companion groups.

Key words: Impulsive Purchasing, Shopping Companions, Emotion, Grocery

Shopping, Impulsiveness

Introduction

Impulsive purchase is defined as a consumer's unplanned buying behavior, which is of significance in marketing and consumer behavior (Rook, 1987). They usually occur when consumers experience a sudden urge to purchase something immediately without additional substantive evaluation, and execute based upon that urge (Billieux, Rochat, Rebetez, & Linden, 2008; Kwak, Zinkhan, DeLorme, & Larsen, 2006).

Impulsive purchase often occurs in supermarkets and grocery stores, and could account for as much as 62% of supermarket sales, and even 80% of all sales in certain product categories (Cheng et al., 2013). Companies and retailers try to promote impulse purchases strategically through, for example new packages, store design, product display, discount on combined item etc. Advances in technology such as inventions of modern payment methods further facilitate impulsive purchase as buyers no longer need to worry about not carrying enough cash (Cheng et al., 2013).

Although impulsive purchase is a popular research topic of importance in the fields such as psychology, behavioral economics, and marketing, the reasons behind this type of behavior remain largely unknown.

Previous research on impulsive purchase proposed that consumers might make an impulsive purchase under any kind of circumstance (Jones et al., 2003). The trigger conditions of impulsive purchase include but not limited to, a sudden urge to buy something, a change in the shopping environment, and the unavailability of original planned commodities (Billieux, Rochat, Rebetez and Linden 2008; Kwak, Zinkhan, Delorme and Larsen 2006). Baumeister (2002) concluded that impulse purchase and

self-control were like two sides of a coin. When the impulsive purchase occurred, it meant the failure of one's self control or surrender to temptation (Baumeister, 2002). Other effects of external cues such as window display, credit card, and promotional activities (cash discount, free product) have been proven to have a pivotal relationship with the consumer impulse purchasing behavior (Karbasivar and Yarahmadi, 2011). However, most prior research on this topic focused on the individual-level factors, including both internal individual characteristics and influence brought to the individual by products or environment when shopping.

Shopping, however, especially in store, is a social experience that always consists of social contacts (Borges, Chebat and Babin 2010). People tend to be socialized to avoid loneliness and thus are likely to shop with some companions, like family members, friends or colleagues (Borges, Chebat and Babin 2010). Even if the consumers go shopping alone, they may still have some communications with the sellers or other customers in the store. The social contact in store is believed to affect decision-making (Cheng et al., 2013). Therefore, an important question is whether the existence of companions and social contact in store would trigger impulsive purchase, and what group of people are more motivated to comply with others. Meanwhile, it is substantial to determine who the "others" are, the relationship between the primary shoppers and the "others", and the effectiveness of these companions that lead to impulsive purchase. Although previous researchers Beatty and Ferrell (1998) and Cheng et al. (2013) have studied the effects of gender of the companions on impulsive purchasing, the gap between the effects of companions and impulsive purchasing is

still distinct, because of the existence of varied and robust nature of differentiation in characteristics and relationship beside gender.

The objective of this study is to determine the influence of different types of companions upon impulsive purchase, of fresh produce in grocery stores. Particularly, we classify consumers into different impulsive buyer groups and examine the difference in responses towards various shopping companions. We hope to contribute to the literature by providing more information about the impacts of different social contacts in store on consumer grocery shopping decision, as well as helping grocery stores more effectively promote the sales of fresh fruits and vegetables eventually.

Literature Review

Impulsive purchasing behavior

Impulsive purchase, defined as a consumer's unplanned purchasing behavior, is an important part of buyer behavior (Rook, 1987). Impulsive purchase has the following characteristics with: (1) an intense or overwhelming feeling of having to buy the product immediately; (2) a disregard for potentially negative purchase consequences; (3) feelings of euphoria and excitement; and (4) a conflict between control and indulgence (Cheng et al. 2013). An impulse purchase is an act that is not consciously planned, but arises immediately upon confrontation with a certain stimulus, and is defined as an "unplanned yet sudden" purchase, which distinguishes it from an ordinary purchase (Beatty & Ferrell, 1998). This kind of behavior usually happens

during the shopping procedure, and normally not planned or scheduled before the shopping (Kacen & Lee, 2002; Sharma, Sivakumaran, & Marshall, 2010). Previous researchers have noticed such behavior and conducted studies upon this behavior.

Jones et al. (2003) proposed and found that individuals could make an impulse purchase in a various cases of situations: when one is looking around without a certain purchase target; when one is not intended to make a purchase; or when one is engaged with a certain shopping task such as looking for a birthday gift.

Previous research in impulsive purchasing more focused on the individual level while did not go too much into depth about the case when that individual is shopping with a companion, such as a peer, family member, or coworker. In fact, even when individuals were shopping alone in the store, they may still be affected and arose the flame of shopping intention and spur by observing other people buying something they felt interested. For instance, consumers prefer stores where they have a feeling that other consumers were alike them, thus have a high level of self-identification and satisfactory (Borges et al., 2010; Chebat, Sirgy, and St-james, 2006).

Dittmar et al. (1995) proposed in his study that gender, as one of the most important factors that influence the social distance, has a significant effect on both the products bought impulsively and the intention behind it. In the study conducted by Dufwenberg and Muren (2006), they found distinguish in how men and women have different strategies and emphases when making purchasing decisions. Men, usually go extremes by consider either perfectly selfish, or very selfless, while, women, would usually care more about equalizing and harmony.

Impulsiveness is sometimes viewed associated with immature behavior in the eyes of some psychologists, as they believe the impulsive behavior is the processed results from mental desire for immediate gratification and satisfaction. Consumer researchers also draw attention to the potential relationship between impulsive acts and negative outcomes (Rook & Fisher, 1995). Serious problem such like drug/alcohol addiction (Hirschman, 1992) and criminal delinquency (Eysenck and McGurk, 1980) can be rooted from impulsive acts. Impulsive purchasing, similarly, may potentially cause the problem such like social disapproval, post-purchasing financial problems, feeling of guilt, product disappointment, etc. (Rook, 1987).

In social science, one concept called social distance is viewed as of significance, and could potentially affect and even decide the consumers' final decision choice in the marketing field. It is defined by Kazdin (2000) as "the perceived distance between individuals or groups." Conceptually, the social distance includes both distance from substance and psychoactive, such as income, social class, ethnicity, belief etc. According the theory put forward by Akerlof (1997), social distance has magnificent importance when evaluating economic decision that would have a social effect. In study conducted by Bogardus (1926), they created a scale of social distance, and used it to measure participants' willingness to engage in social contact with people from various social groups, in different level of closeness.

According previous research output on social distance, it has very interesting results on its influence upon consumers' behavior. When a huge social distance between the two people exists, they tend to act more independently and less likely to

comply with the other's expectation. When the 'huge' distance is getting closer, although they still majorly make their decisions spontaneously and tend to act according to their own level of altruism, they become more likely to become acceptable to their sudden desire to buy. When the social distance becomes extremely close, interesting things may happen, as people may no longer surrender to the other's expectation, while may want the other people to accept their own suggestions (Cheng et al., 2013). Thus, people in a high-cohesive group are more dependent and relatively easier to conform to group's expectations. For this reason, Cheng et al. posit that the possibility of impulsive purchasing is increased when an individual shops with a companion, with whom they share a high cohesive relationship.

From another aspect, previous researchers introduced the conception of susceptibility. Susceptibility to interpersonal influence, rooted from a personality trait, is a key factor that may affect or even decide consumer final purchasing decision. It can be defined as individual's willingness to accept suggestions from other people when making purchasing decisions (Bearden and Etzel, 1982). People who are highly susceptible to others influence would give a large consideration of the suggestions from others, and were usually easier to comply with or accept others' expectations, because they also care how others would judge themselves based on the response they gave to the suggestions.

Susceptibility is obviously a very important factor as an indication of individual difference. While in this study, we decided to use the impulsive factor as the indication of that individual difference on the subject side.

In most recent years' research on impulsive buying, researchers appear to agree that impulsive purchasing usually includes a hedonic and affective component (Cobb and Hoyer 1986; Rook, 1987; Weinberg and Gottwald, 1982). In the study of Rook (1987), he reports that compromised consumers who made impulsive purchase felt the item was calling them, almost 'demanding' them to purchase it. These findings on the behavioral elements led to the definitions of impulse. Impulsive buying is tend to occur with diminished regard for its consequences (Rook, 1987).

As for the crucial elements in impulsive purchasing, Rook and Hock (1983) identify five most obvious ones: a sudden and spontaneous desire to purchase, a state of psychological disequilibrium, the onset of psychological conflict and struggle, a reduction in cognitive evaluation, and a lack of regard for the consequences of impulsive purchasing (Karbasivar and Yarahmadi, 2011).

Another interesting point is affective influence. Mostly shoppers would view an impulsive purchase as the failure of a resistance to the desire and temptation in mind, as a negative result. However, at other times, they are also more likely to rationalize the feelings and make the purchase anyway. This indicates that although buyers would deliberate the purchase decision at a cognitive level, the affective factor in the decision-making procedure, would win over the cognitive willpower and lead to the purchase (Karbasivar and Yarahmadi, 2011). These findings were consistent with the conclusions of the study of Weinberg and Gottwald (1982), that although cognitive deliberation would play a role in consumers' impulsive purchasing decision, the influence was still not as substantial as that of the affective factors.

Several types of impulsive purchasing behavior. In a magnificent study, Stern (1962) classified four different types of impulsive purchasing based on the input amount of affect versus cognition presence in the decision-making procedure. From descending /ascending order, the impulsive purchase was classified into: pure impulsive purchasing, with least amount of cognition involvement; and other three types with a combination of affective and cognitive influence, with increase in cognition involvement respectively.

Factors affecting impulsive purchasing behavior

Both internal personality traits and external factors were concluded to account for impulsive purchasing (Wansink, 1994). Since most of the impulsive purchasing was triggered by stimulus from outside (Rook and Fisher, 1995), that more the exposure such like more social contact and stimuli, would almost certainly increase the likelihood an impulsive purchasing (Iyer, 1989).

External factors of impulsive purchasing

External factors usually refer to marketing cues or stimuli that are manipulated to spur or lure consumers' into actual purchasing behavior (Youn and Faber, 2000).

Consumers usually would be stimulated to purchase impulsively when visually encountering cues such as promotional incentives (Rook, 1987).

Internal factors of impulsive purchasing.

Internal factors of impulsive purchasing focus directly on the individual personality traits and characteristics. Personality traits such as emotional states, the normative evaluation of impulsive purchasing, and demographics, which would determine the degree of their impulse buying tendency (IBT) (Kacen and Lee, 2002).

Many previous researchers have provided theoretical frameworks for exploring impulsive purchasing related to psychological variables (e.g. personality traits, self-control), hedonic experiences (e.g. shopping enjoyment, emotional status, mood), and situational variables (e.g. available time, money) in a shopping context (Beatty and Ferrell, 1998; Rook and Fisher, 1995).

To divide these factors into two parts, a person's emotional status, mood, self-feeling, and self-control can be classified as individual affective factors (Youn, 2000). When consumers received a stimulus from outside, they would process it either affectively or cognitively, resulting in either impulsive purchase, or non-impulsive behavior. As a result, these feelings may include an "irresistible urge to buy, positive buying emotions and mood management" (Coley and Burgess, 2003). To be more specific, when the consumers felt a sense of "irresistible urge to buy", they feel compelled to make the purchase. Some researchers have pointed out that some personality traits may help consumers become more resistant to that pulse (Beatty and Ferrell, 1998; Rook and Fisher, 1995), and these personality traits can also help determine the degree of a person's IBT (Beatty and Ferrell, 1998; Rook and Fisher, 1995).

Data Collection

A national wide online survey was sent out by a survey company in 2014. A representative sample of about 2,500 participants across the United States was collected. Besides, the routine demographics, we collected the key factors and variables as follows.

The buying impulsivity measurement developed by Rook and Fisher (1995) was used in this study. The measurements include nine statements, each describing one type of impulsive purchase behavior¹. Using five point Likert scales, respondents were asked to state their agreement/disagreement of each statement and scored accordingly. The possible range of the score is from nine to forty-five, and a higher score indicates a higher level of buying impulsivity of that respondent.

To measure participants' initial emotion, they were asked a simple question about their mood (e.g. sad, happy etc.) when taking the survey using a 5-point Likert scale. After measuring participants' initial mood, an animated happy face image was shown to them, and they were asked whether the happy face made them happier. Following the happy face, an animated sad face image was displayed, and participants were then asked whether the sad face made them unhappier. Both changes in mood were measured using a 5-point Likert scale. Answers to these three questions enable us to estimate the participants' final mood and represent how easily the participants' mood were affected by external factors.

Respondents were also asked to select their most frequent companions when

¹With one exception of statement, "I carefully plan most of my purchase".

shopping for fresh produce. The companions include 1) dad and/or mom; 2) wife or husband; 3) boyfriend or girlfriend; 4) colleagues; 5) sons and/or daughters; 6) close friends; and 7) other shoppers. For each selected companion, the respondents were asked how often they went grocery shopping with each of the above companions. Then for each of the shopping companions indicated, participants were asked how likely they would buy the product that was recommended by this specific companion, but not in their original shopping plan using a 5-point Likert scale. By these two questions, we could be gather the information about who the most frequent companions are and how likely these companions' impulsive suggestion would be purchased in the grocery stores.

Model Specification

A system of equations of likelihood to purchase corresponding to selected companions was built and analyzed. The model can be estimated with the ordered logistic model as:

$$\begin{aligned}
 &Likelihood_to_Purchase_i \\
 &= \alpha_i + \beta_i \cdot X_i + \gamma_i Impulsive_Score_i + \delta_i \cdot Final_Emotion_i + \theta_i \\
 &\cdot Emotion_Index_i + \varepsilon_i
 \end{aligned}$$

where $Likelihood_to_Purchase_i$ are purchase responses according to the each selected companions; X_i is a vector of demographic variables; $Impulsive_Score_i$ is the measurement of buying impulsivity; $Final_Mood_i$ is the index indicating the

mood after viewing the two faces. $Emotion_Index_i$ is the index measuring how easily an individual's mood was influenced by external factors (e.g. whether they are emotional);

Results

Sample Statistics

The demographics of the sample was summarized in Table 1. The final sample consists of a total number of 4,509 observations for behavior of response of companion behavior, while about 2,271 were used for regression analysis². Among them, 56.47% were females and about 76.95% of the participants had an education level of college/bachelor's degree or above. The median of the household annual income lay in the range from \$35,000 to \$49,999. As for the weekly food expenditure, most household falls in the range from \$50 to \$149 (61.86%). The median falls in the range from \$100 to \$149.

[Insert Table 1 about here]

Measurements of Impulsiveness

The measurements we used in this study was borrowed from the methodology implemented in Rook and Fisher (1995). The methods consists of nine statements,

²Only half of the responds received the emotion questions, which were needed to enter the final regress analysis. The rest half were majorly focused on companion behaviors.

each describing one type of impulsive purchase behavior³. Using five point Likert scales, respondents were asked to state their agreement/disagreement of each statement and scored accordingly. The possible range of the score is from nine to forty-five, and a higher score indicates a higher level of buying impulsivity of that respondent.

The results of the distribution of the score the participants obtained are presented in Figure 1. It is noticeable that participants in this study have a diverse level of impulsiveness. Many of them have a score ranged from 19 to 34 in terms of impulsiveness. It is to be noticed that an extremely high percentage of the whole sample (over 7%) have a score of 27, which is exactly the mid-point of the possible score range (9 to 45).

[Insert Figure 1 about here]

Impulsive Responses to Different Companions

Participants' impulsive responses to each of the seven companions were presented in Figure 2 and Figure 3, with different emphasis. In Figure 2, it is clearly indicated that for suggestions from wife/husband and dad/mom, around 50% of the total participants who were companied by these two groups would definitely or most likely buy what was suggested. For the group of boy/girlfriend and close friends, the results were very alike one the other, with about 10% for definitely will buy, about 15% most likely will buy, and a 20% sometimes will buy. Even for the negative side responses were very

³With one exception of statement, "I carefully plan most of my purchase".

similar in these two groups. For suggestions came from sons/daughter, the impulsive was not as positive as suggestions from wife/husband and dad/mom, while still a little better than those from close friends and boy/girlfriend. For suggestions from colleagues and other shoppers, the responses would tend to be more rejective, as over 40% claimed they would definitely not or most likely not purchase what was suggested, with additional around 20% claimed undecided.

[Insert Figure 2 about here]

As for the responses were reported in Figure 3, things can be a little different in items of how many participants in this survey were actually companied by. As it is indicated in the figure, the most participants claimed companioned by wife/husband and reported a response of attitude, with about 2,869 out of 4,509 total respondents. Other shoppers, although most of the impulsive response was not that positive, have the second highest number of participants who claimed being influenced and gave an attitude. Dad/Mom, which received almost as positive as response as from wife/husband, ranked the third place, with most number of participants claimed affected. The other four groups, including colleagues, sons/daughters, close friends, and boy/girlfriend do not differ too much in terms of the total number of participants report, while it is noticed thought that boy/girlfriend was not the group with the least number of participants claimed.

[Insert Figure 3 about here]

Ordered Logistic Regression Model

Likelihood-to-purchase was regressed using ordered logistic model and results were presented in Table 2. For group of dad and mom, age is the only significant variable among the demographics; older participants would tend to accept the suggestions from dad and mom. Impulsiveness and emotion index were not significant as for the likelihood to purchase for this group. While participants' final emotion would have a negative effect on participants' likelihood-to-purchase for the suggestions from dad/mom.

For the group of wife/husband, income becomes the only significant variable among demographics, as higher income household would have a lower likelihood-to-purchase for suggestions from wife or husband. Final emotion no longer was significant as for in this group, while impulsiveness become a very significant variable. Participants with a higher impulsiveness score would have a higher possibility to make an impulsive purchase for the suggestions from wife and husband.

For the group of sons/daughters, age and gender were the two significant variables among the demographics. Elder female participants would have lower likelihood to agree with a impulsive purchase for the item being suggested by sons/daughters while not in the original shopping plan. Final emotion, in this case was a significant variable. It indicates that participants who have a happier final emotion would have a higher possibility to commit the impulsive purchase of the item suggested by sons/daughters.

For the first group of non-family members, close friends, many more variables

were indicated significant for this group. Among demographics, age, income, education, and gender were all significant in this group. Elder female participants with higher level of education would have a less possibility of purchase item impulsively being suggested by close friends. The participants with higher income would tend to make the impulsive purchase anyway. Impulsiveness becomes negative significant as for the group of close friend, meaning that participants who were higher level of impulsiveness would on the contrary become more vigilant and less likely to the impulsive purchase suggested by close friend.

The second non-family member group consist of a relationship a little closer than 'close friend' does, which is boy/girlfriend. Similarly as in the close friend group, that people with higher income would more likely to purchase the item impulsively suggested by boy/girlfriend. Age and gender, play a total opposite role as the results in the group of close friend. Namely, elder and female participants would have higher⁴ possibility to purchase the item suggested by their boy (girl) friend than their younger and male counterpart would.

The colleague group, which may show some different results as in the close friend group, indeed present some of the similar results in some aspect. The influence of income and education, for instance, have a similar positive effect of income, and a similar negative impact of education as the close friend group. The difference lies in that female participants now have a higher possibility to purchase the item impulsively than males. In addition, final emotion level has a negative impact on the

⁴ It was lower in the case of close friend group.

likelihood-to-purchase as it was for the dad and mom group.

Last but not least, the influence of other shoppers as the shopping companion was a little different from all the other companions, in terms of the impact of food expenditure. It, for the first time, become significant for the likelihood-to-purchase, as participants who have a higher food expenditure would have less possibility to make an impulsive purchase for the item being suggested by other shoppers. Income however, plays a positive effect on the likelihood, and impulsiveness plays a negative impact, very similar as the case of close friend group.

[Insert Table 2 about here]

Conclusions and Implications

In this study, we have estimated participants impulsive purchase response to different companions, and explored the significant variables affecting such likelihood-to-purchase, including impulsiveness, emotion, and emotional levels. A quick conclusion of the participants' response indicate that suggestions from dad/mom and wife/husband were most welcoming, and over half of the participants most likely would buy such suggested items. Suggestions or indications from colleagues and other shoppers, comparatively were not very easy to acceptable, for over half of the participants as they claimed would not purchase that impulsively. The situations in close friends, son/daughter, and boy/girlfriend were very similar in terms of acceptance of suggestions of an impulsive purchase. As for indications of most

frequent companions in the grocery shopping, wife/husband was the winner, followed by other shoppers, and dad/mom. Colleague, son/daughter, and close friends were pretty much at the same level, and boy/girlfriend group has the least account for frequency.

As regard for the regression, results turned out be quite diverse as for different group of companions. For the family as dad/mom, wife/husband and sons/daughters, there were no single significant variables for all the three groups. Age, income, and gender were the significant variables among the demographics. Impulsiveness and final emotion were the two significant variables in wife/husband and sons/daughters group respectively. In the non-family group, including close friends, boy/girlfriend, and colleague, there seems to have many more significant variables than the family group. Participants who have a higher level of education would mostly consistently have a lower possibility to make the impulsive purchase as for the suggestions from close friend and colleague. Interestingly, there were significant variables but in opposite signs as for different groups indicated by this study. For instance, Elder participants would have higher possibility of make impulsive purchase for suggestions from boy/girlfriend while would do the opposite for the close friends. Gender, another example, would have possibility for impulsive purchase of suggestions from boy/girlfriend and colleague, but lower for close friends. Impulsiveness was only indicated to negative affect suggestions from close friend, and final emotion would only negatively affect that of colleagues.

The special case is other shoppers, in our study, since on one hand, other shoppers

would be theoretically, the most often ‘companion’ in grocery shopping generally.

While the difference lies in that it has the weakest social connection and longest social distance with the consumers themselves. Meanwhile, the remote distance, and nature of a stranger would contribute to the impulsive purchase in some aspect, as the decision would not be remembered, and plausibility of such a recommendations. Thus, there were both good things and bad things about such impulsive purchase recommendations, and different consumers may have a quite different response to this special group.

As indicated by the results of regression in this study, it is indicated that people with higher income does not really care and would have a higher possibility to accept the suggestions from strangers like other shoppers. While these participants who have a higher food expenditure did not follow the suggestions from other shoppers that easy, which may implies that these consumers have routine brand or type of grocery shopping items, thus, were not that easy to pick up these impulsively suggested by other shoppers. Impulsiveness, on the other hand, was indicated that participants, although may be impulsive in general, actually was relative vigilant in treating suggestions from other shoppers. Thus, they show slight reluctance to accept their suggestions as a result.

Nonetheless, we have admit that we may suffer from the multi-companion influence situation that when participants were companioned by wife/husband, sons/daughters, and suggested by other shopper at the same time. It may be accounted for by combining some of the family groups or non-family groups in the future

development of this study. To answer the questions about the influence of each companion and multi-companions at the same time, further research and studies are still needed on this subject.

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Table 1. Demographics of the Sample (N=2,271)

Sample Variable	Percentage (% if not remark)
Female	56.47
Age (18–39 years old) ^a	34.86
Age (40–59 years old)	36.62
Age (≥ 60 years old)	28.52
Some High School/High School Graduate	23.05
College/Bachelor's Degree	63.70
Post-graduate Degree	13.25
Income ($< \$14,999$) ^b	9.71
Income (\$15,000 – 24,999)	12.38
Income (\$25,000 – 34,999)	14.04
Income (\$35,000 – 49,999)	15.00
Income (\$50,000 – 74,999)	22.57
Income (\$75,000 – 99,999)	12.20
Income (\$100,000 – 149,999)	9.67
Income (\$150,000 – 199,999)	2.49
Income ($\geq 200,000$)	1.92
Food Expenditure ($< \$49$) ^c	10.39
Food Expenditure (\$50 – 99)	32.80
Food Expenditure (\$100 – 149)	29.06
Food Expenditure (\$150 – 199)	13.83
Food Expenditure (\$200 – 249)	5.33
Food Expenditure (\$250 – 299)	2.95
Food Expenditure (\$300 – 349)	1.72
Food Expenditure (\$350 – 399)	1.06
Food Expenditure (\$400 – 449)	1.10
Food Expenditure (\$450 – 499)	0.88
Food Expenditure ($> \$550$)	0.88

Notes:

^a There are 14 age categories in the survey; for reporting purposes, we combined some categories into a total of 3 categories.

^b Household annual income

^c Household weekly food expenditure

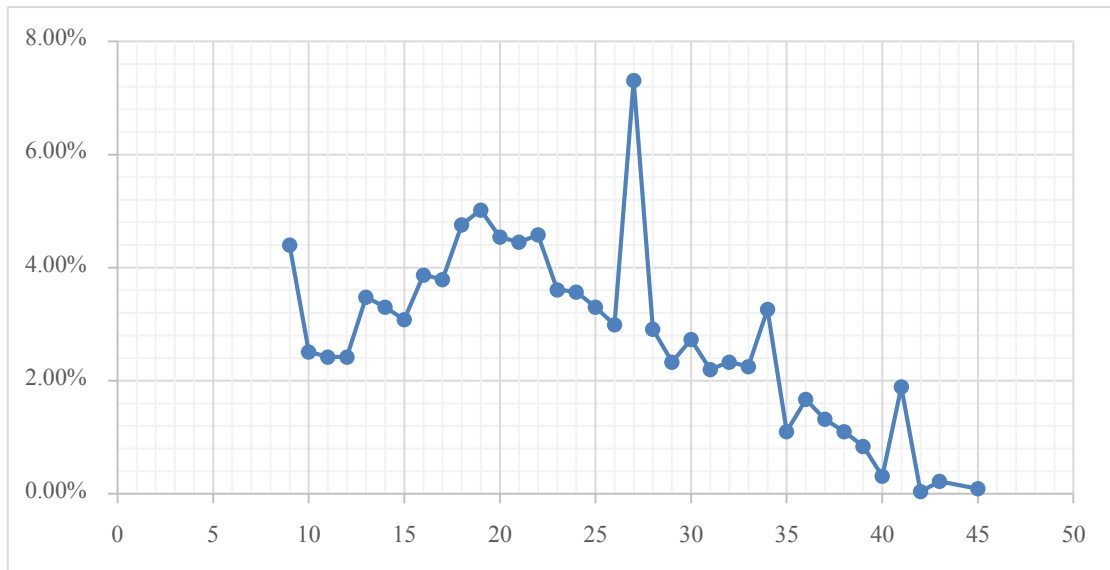


Figure 1. Measurements of Participants Impulsiveness (large number indicates higher level of impulsiveness)

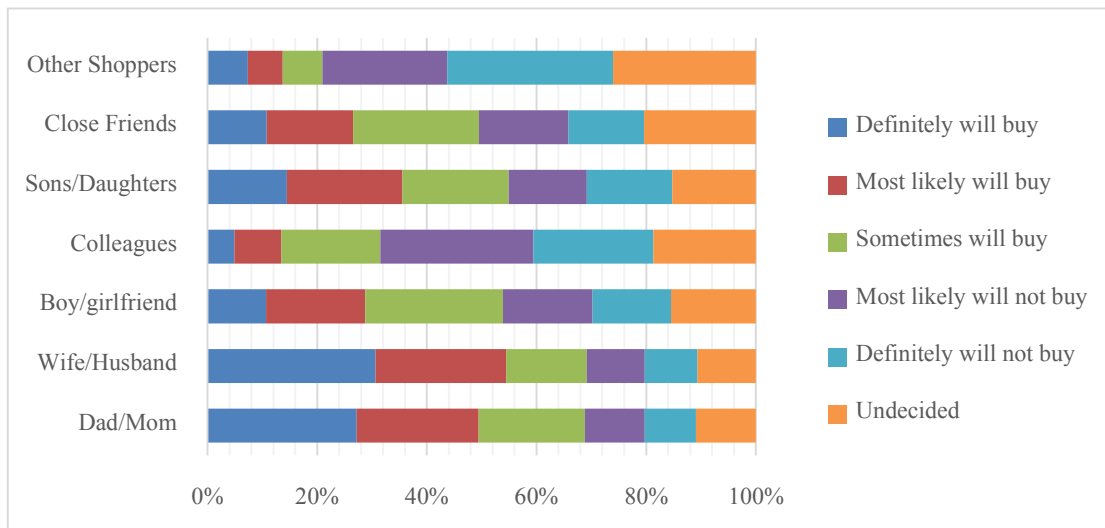


Figure 2. Impulsive Responses to Different Companions (in terms of percentage)

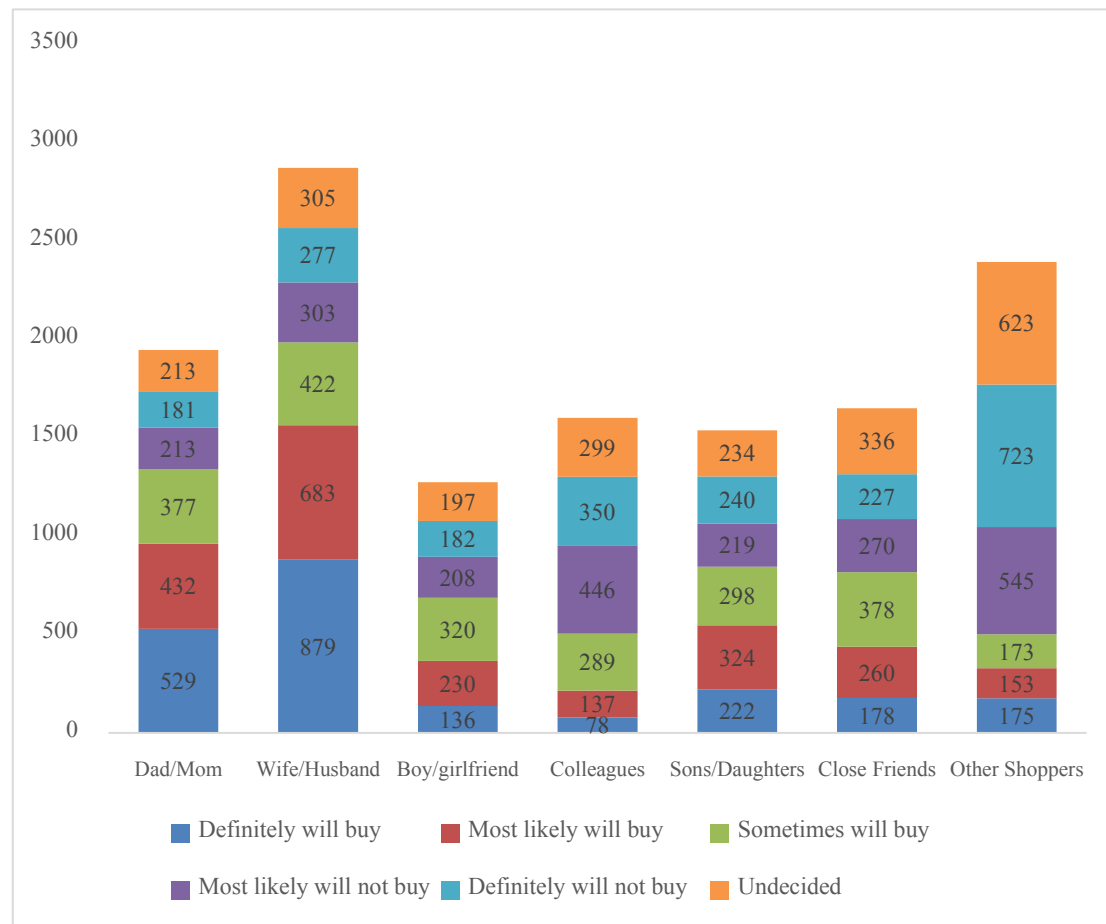


Figure 3. Impulsive Responses to Different Companions (in terms of frequency)

Table 2. Regression Results of Likelihood to Purchase using Ordered Logistic Model

Independent Variables	Dependent Variable: (Likelihood to purchase for each companion)						
	Dad/Mom	Wife/Husband	Sons/Daughters	Close Friends	Boy/Girlfriend	Colleague	Other Shoppers
	1	2	3	4	5		
Intercept 1	-3.34***	-3.88***	0.30	-0.76**	-4.27***	-1.66***	-1.72***
Intercept 2	-2.26***	-2.79***	1.28***	0.32	-2.97***	-0.08	0.00
Intercept 3	-0.44	-1.02***	2.86***	2.45***	-1.01***	2.07***	2.06***
Intercept 4	0.65**	0.15	4.32***	3.83***	0.29	3.51***	2.74***
Age	0.06***	-0.01	-0.14***	-0.04**	0.10***	0.00	0.02
Income	0.02	-0.10***	-0.02	0.05*	0.07*	0.07**	0.07**
Education	-0.01	0.03	0.03	-0.07**	-0.01	-0.08***	0.03
Gender	0.14	-0.05	-0.74***	-0.30***	0.48***	0.30***	0.16
Food_Expenditure	0.02	0.00	-0.02	0.02	0.04	0.01	-0.06*
Impulsiveness	-0.01	0.03***	0.00	-0.02***	0.00	-0.01	-0.01*
Final_Emotion	-0.08*	0.03	0.07*	-0.02	0.03	-0.12***	0.07
Emotion_Index	-0.06	0.02	0.00	-0.04	0.03	0.04	-0.07

Note: *, **, and *** indicate significant at 10%, 5% and 1% level of significance.