



Citation for published version:

Thompson, ER & Prendergast, GP 2015, 'The influence of trait effect and the five-factor personality model on impulse buying', *Personality and Individual Differences*, vol. 76, pp. 216-221.
<https://doi.org/10.1016/j.paid.2014.12.025>

DOI:

[10.1016/j.paid.2014.12.025](https://doi.org/10.1016/j.paid.2014.12.025)

Publication date:

2015

Document Version

Peer reviewed version

[Link to publication](#)

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(Corrected final draft 27 November 2017, as published in PAID)

Title page

The influence of trait affect and the five-factor personality model on impulse buying *

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Abstract

Research into the influence of affect on impulse buying has to date produced contradictory results, partly due to confusion between the potentially discrete influences of, respectively, state and trait affect. Additionally, studies on how the five-factor personality model's dimensions influence impulse buying have also produced contradictory results. Moreover,

while the established link between trait affect and personality suggests dimensions of this latter could account for whatever influence the former has on impulse buying, no study has yet attempted to examine this possibility. We draw on self-regulation theory to examine three unanswered questions: (1) the extent to which trait affect influences impulse buying whilst controlling for state affect; (2) establish which dimensions of the five-factor personality model predict impulse buying; and (3) test whether or not any influence of trait affect on impulse buying is additive to the effects of the five-factor personality model. Analyses of cross-sectional data (n=842) find that trait affect does have a significant ($p < .05$) influence on impulse buying controlling for state affect, but that this influence is fully accounted for by the five-factor personality model ($p < .001$), the extraversion, conscientiousness and neuroticism dimensions of which are found consistently to predict impulse buying.

Key words: Impulse buying; Compulsive buying; Trait affect; Five-factor model; Self-regulation.

1. Introduction

While the psychological determinants of general impulsivity and compulsive buying disorders have attracted considerable research attention (Billieux, Rochat, Rebetz & Van der Linden, 2008; Claes, Bijttebier, Van den Eynde, Mitchell, Faber, de Zwaan & Mueller, 2010; Mueller, Claes, Mitchell, Faber, Fischer & de Zwaan, 2011; Otero-Lopez, Pol, Bolano & Marino, 2011; Otero-Lopez & Pol, 2013), the individual difference and personality determinants of *compulsive* buying's milder *impulse* buying antecedents have received relatively little attention (Bratko, Butovic & Bosnjak, 2013; Lucas & Koff, 2014), and empirical results have been equivocal.

Beatty and Ferrell (1998, p. 184) suggest 'individual difference variables ... contribute to the impulse buying process,' but focus mainly on examining and finding an influence for *state* affect, a transient mood determined as much, and arguably more, by

environmental circumstances than stable individual differences. Studies on the influence of the stable individual personality difference of *trait* affect on impulse buying have produced contradictory results (Verplanken, Herabadi, Perry & Silvera, 2005; Silvera, Lavack & Kropp, 2008), and whether or not *trait* affect has any influence on impulse buying after controlling for possible confounding effects from *state* affect remains open to question.

Verplanken and Herabadi (2001, p. 81) suggest ‘the tendency to buy on impulse is rooted in personality’. However, their findings in relation to the five-factor personality model are only partially supported by Bratko et al’s (2013) subsequent research, suggesting further research is needed to resolve the question of how this personality model influences impulse buying. Moreover, the established link between personality and affect found in meta-analyses (DeNeve & Cooper, 1998) begs the question of whether or not any influence that *trait* affect may have on impulse buying is in fact partially or wholly accounted for by personality.

Resolving these unanswered questions is important because around 90 percent of people make impulse purchases (Hausman, 2000). Such impulsive buying behavior is argued (d’Astous, 1990; Verplanken & Sato, 2011) and empirically found (Sun, Wu & Youn, 2004) to predict compulsive buying, a self-regulation disorder affecting around 5 percent of individuals (Claes et al, 2010). We empirically address these unanswered questions through the theoretical lens of self-regulation dysfunction (Baumeister, 2002).

1.1. Impulsive and compulsive buying

Common to all conceptualizations of impulse buying are unplanned, unreflective, spontaneous purchasing (Piron, 1991). Several researchers (d’Astous, 1990; DeSarbo & Edwards, 1996) consider such purchasing as the initial stage of a continuum leading some individuals progressively to become habituated, addicted, and then, ultimately, compulsive buyers who exhibit marked ‘repetitive buying and a lack of impulse control over buying’ (Ridgway, Kukar-Kinney & Monroe, 2008, p. 662). This contention is supported by Sun et al

(2004, p. 8) who find a significant path coefficient of .59 from impulsive to compulsive buying in a structural equation model of this latter's causality.

1.2. Determinants of impulse buying

Several researchers suggest impulse buying results from self-regulation dysfunction (Claes et al, 2010; Rook, 1987; Vohs & Faber, 2007). Baumeister (2002) argues that individuals' maintenance of self-regulation depends on goal adherence, self-monitoring, and impulse-restraint capacity. Hence, self-regulation can fail and result in impulse buying when (a) longer-term goals (like saving money) cease to be adhered to because they are temporarily superseded by short-term objectives seemingly achievable by unplanned purchasing; when (b) conscious self-monitoring of buying and its consequences is suspended; or when (c) impulse-restraint capacity is reduced through ego depletion. Self-regulation dysfunction has been linked to several impulsive behaviors and compulsive disorders (Magar, Philips & Hosie, 2008), and found to be facilitated by individual differences in both affect and personality (Solberg Nes, Carlton, Crofford, de Leeuw & Segerstrom, 2011).

1.2.1 Affect

Affect has long been suggested to influence impulse buying (Rook & Gardner, 1993), but there is little consensus about how it does so because there is little consensus about how affect influences self-regulation (Aspinwall, 1998; Fedorikhin & Patrick, 2010). This stems partly from the sometimes differing influences of negative and positive affect on self-regulation (Leith & Baumeister, 1996), and partly from the difficulty of separating the differing influences of, respectively, *trait* and *state* affect.

Little research on *trait* affect and specifically impulse buying exists, and what there is provides inconsistent results. Verplanken et al (2005) find no relationship between trait affect and impulse buying. Silvera et al's (2008, p. 28) research finds support for this non-

relationship regarding *positive* trait affect, but finds a significant positive correlation between impulse buying and *negative* trait affect. This latter finding is in line with research on self-regulation where the roles of positive and negative trait affect have received more research attention (Aspinwall, 1998).

Positive trait affect is suggested by Trope and Pomerantz (1998) to result in a hedonic surplus that obviates subconscious needs to supersede long-term affective goals with short-term mood rectification objectives. Further, Aspinwall (1998) suggests that positive trait affect enables better self-monitoring due to improved thoroughness, efficiency and flexibility in information processing. Aspinwall (1998) also indicates that positive trait affect may facilitate greater psychological resource deployment to counter ego depletion. *Negative* trait affect, a chronic hedonic deficit, would seem to produce the opposite effect, with Koff and Lucas (2011) finding self-regulatory dysfunction associates negatively with trait positive affect and positively with trait negative affect.

Studies on compulsive buying consistently find associations with trait affect that are predicted by research on self-regulation. Positive trait affect is found by Faber and Christensen (1996) to be negatively associated with compulsive buying. Conversely, negative trait affect is found to be positively associated with compulsive buying in several studies (Billieux et al, 2008; Faber & O'Guinn, 1992; Mueller et al, 2011). Overall, these findings suggest positive trait affect should diminish, and negative trait affect should increase, impulse buying.

However, studies of *trait* affect's influence on compulsive and impulsive buying do not control for the influences of *state* affect, influences that appear in impulse control studies to vary depending on context (Fishbach & Labroo, 2007). For example, Fedorikhin and Patrick (2010) find that positive *state* affect decreases self-monitoring efficacy, concluding that elevated mood heightens arousal and thereby distracts from both motivation and perceived need for self-monitoring while simultaneously producing ego depletion. But

Aspinwall (1998) suggests positive *state* affect may actually increase self-monitoring and assessment of costs and benefits of switching from long- to short-term goals. Negative *state* affect has been found by Leith and Baumeister (1996) to decrease self-regulation. But other research finds negative *state* affect can increase effort to self-regulate (Erber & Tesser, 1992).

Contradictory evidence on the influences of positive and negative *state* affect on impulsive behavior is reflected in research specifically on impulse buying, with Rook and Gardner (1993) finding both positive and negative state affect are related to increased impulse buying. Clearly, with the influences of *state* affect on impulse buying being equivocal, any examination of the role of *trait* affect in impulse buying needs overtly to control for *state* affect. Hence we hypothesize that:

H1. Controlling for state affect, positive trait affect will decrease impulse buying, while negative trait affect will increase impulse buying.

1.2.2 Personality

Self-regulation (Gramzow, Sedikides, Panter et al, 2004) and effortful control (Jensen-Campbell, Rosselli, Workman et al, 2002) are consistently found to be associated positively with the conscientiousness, and negatively with the neuroticism, dimensions of the five-factor personality model, although their relationships to extraversion, agreeableness and openness are equivocal (Whiteside & Lynam, 2001). Studies on compulsive buying broadly mirror these associations (Mowen & Spears, 1999; Mueller et al, 2011, Sun et al, 2004). Recent research by Otero-Lopez and Pol (2013) find compulsive buying positively associated with neuroticism and negatively associated with conscientiousness and agreeableness.

However, studies specifically on the relationship between impulse buying and the five-factor model have produced inconsistent findings. Verplanken and Herabadi (2001) find significant relationships between impulse buying and only extraversion (positive) and conscientiousness (negative). But Bratko et al (2013) find significant relationships for only

extraversion and neuroticism, both positive. As the only two studies we could locate on the five-factor model and impulse buying concur that extraversion predicts the latter, and because we suspect that impulse buying's association with conscientiousness and neuroticism should reflect consistent findings relating to self-regulation and these two dimensions, we hypothesize that:

H2. Impulse buying will be negatively associated with conscientiousness, but positively associated with neuroticism and extraversion.

1.2.3 Trait Affect and personality

The five-factor model's dimensions are found to predict positive and negative trait affect (Stafford, Ng, Roger & Bard, 2010), raising the possibility that any influence of these latter on impulse buying might, at least in part, be accounted for by elements of the five-factor personality model. This possibility is lent support by DeNeve and Cooper's (1998, p. 210) meta-analysis that finds significant correlations as high as .23, .20 and -.14 between affect and, respectively, neuroticism, extraversion and conscientiousness across 126 studies. Further support is provided by Weiss, Bate and Luciano's (2008, p.209) twin study that finds trait affect to be 'genetically indistinct from personality traits, especially those reflecting emotional stability [low Neuroticism], social and physical activity [high Extraversion], and constraint [high Conscientiousness]' (parentheses *not* added). These findings suggest not only that trait affect and these three dimensions of the five-factor model are correlated, but that trait affect is in fact a direct manifestation of those three dimensions. As such, any shared variance between trait affect and impulse buying ought to be accounted for, at least to some extent, by shared variance between these three dimensions of the model and trait affect. We therefore hypothesize that:

H3. Conscientiousness, neuroticism and extraversion will account for some, and possibly all, of the relationship between trait affect and impulse buying.

2. Methods

2.1. Participants

Participants comprised 219 male and 623 female volunteer undergraduate and postgraduate students aged 18 to 59 years (mode age category 20-24, 59 percent) from an English-language university in Hong Kong.

2.2. Measures

2.2.1. Impulse buying

We used a 5-item measure comprised of items drawn from existing impulse buying measures (Rook & Fisher, 1995; Verplanken & Herabadi, 2001; Wuen et al, 1998). We selected only items appropriate for a cross-cultural population by avoiding those using colloquialisms that might give rise to misunderstanding. We also selected items directly reflective of cognitive impulse buying, defined as unplanned, unreflective, spontaneous purchasing (Piron, 1991). In this we sought deliberately to avoid items reflective of what Verplanken and Herabadi (2001) term affective impulse buying because these assess feelings of pleasure, control loss and guilt which are not so much intrinsic constituents of impulse buying as its possible causes or consequences. We modified items to make them applicable to impulse buying behavior in the preceding two months (e.g. I never bought things I didn't plan to buy, I purchased some things on impulse without thinking, I thought twice before committing myself to purchases, I always stuck to my shopping list, I frequently made unplanned purchases).

2.2.2. Trait affect

We used the International Positive and Negative Affect Schedule Short Form (I-PANAS-SF. Thompson, 2007), which was developed specifically for cross-cultural use with both native and non-native English-speaking samples and validated in international research

(Wong, Ho, Li, Shin & Tsai, 2011). Following Ramon, Geva and Goldstein's (2011) operationalization of trait affect, we specified 'general' rather than recent mood in the I-PANAS-SF question stem.

2.2.3. Five-factor personality model

We used a refinement of Saucier's (1994) 40-item lexical Big-Five measure, the International English Big-Five Mini-Markers (Thompson, 2008). This scale was developed to be cross-culturally applicable, has been successfully used with international samples (Alvergne, Jokela, Faurie and Lummaa, 2010), and exhibits acceptable internal consistency reliabilities (Biderman & Reddock, 2012) plus structural and concurrent validity (Ginns, Martin, Liem & Papworth, 2014).

2.2.4. Controls

State affect. To control for state affect we tried, following Vermeulen (2010), using the I-PANAS-SF also to measure state affect by specifying in the question stem not general mood but mood specifically during the previous 2-month period over which we measured impulse buying. However, our pilot study found that using the I-PANAS-SF for both trait and state affect in the same instrument confused some respondents. We therefore used Lyubomirsky and Lepper's (1999) 4-item affect measure, the Subjective Happiness Scale. These authors find their measure exhibits strong convergent validity with other transient-affect measures, such as Stewart, Ware, Sherbourne and Wells' (1992) Recent Happiness measure, thereby making it particularly appropriate for assessing state affect. To ensure we measured state affect specifically during the preceding 2 month period over which we measured impulse buying, we slightly adjusted each item (e.g. 'During the past two months specifically, I consider I've been a not very happy person/a very happy person' instead of 'In general, I consider myself a not very happy person/a very happy person').

Age. Kacen and Lee (2002) find that increasing age, even within their student sample, was significantly negatively associated with impulse buying. We therefore controlled for age.

Sex. Studies of both compulsive and impulsive buying generally find females constitute a significantly higher proportion of compulsive buyers (Bratko et al, 2013; Dittmar, 2005), hence we controlled for sex.

3. Analyses and results

Table 1 shows scale reliabilities and correlations. We examined variance inflation factors and found none above 2.9, substantially below the standardly acceptable threshold of 10 (Chatterjee & Price, 1991), hence suggesting multicollinearity to be unproblematic. Table 2 shows hierarchical regression analyses, with Model 1 entering controls alone to provide a baseline.

The significant betas for both Positive and Negative Affect in Model 2 support Hypothesis 1 that, controlling for any influence of *state* affect, positive *trait* affect will negatively predict, while negative *trait* affect will positively predict, impulse buying.

Model 3 enters controls and only the five-factor personality model. The significant positive betas for Extraversion and Neuroticism, and the negative beta for Conscientiousness indicate support for Hypothesis 2.

Model 4 enters controls and both the trait affect and the five-factor model variables. The respective betas for Positive and Negative Affect become smaller and insignificant, while those for Extraversion, Neuroticism and Conscientiousness remain significant and of a similar magnitude. Moreover, Model 4 shows that entering Positive and Negative Affect with the five-factor model adds no significant explanation in the variance of impulse buying compared to the variance explained by the five-factor model alone. Taken together, these findings suggest variance shared between impulse buying and trait affect is accounted for by

shared variance between trait affect and the five-factor model, indicating support for Hypothesis 3 that the model accounts for trait affect's influence on impulse buying.

4. Discussion

Our study has sought to address unanswered questions about the relationships between impulse buying and, respectively, trait affect and the five-factor personality model, both separately and in combination. Our findings are the first to clarify that positive and negative *trait* affect each predict impulse buying, controlling *state* affect's confounding influence, thereby resolving equivocal results in prior research. Our findings are also the first to clarify that the extraversion, neuroticism and conscientiousness dimensions of the five-factor personality model predict impulse buying, again resolving equivocal results in prior research. Further, our hypothesis that any influence of trait affect on impulse buying is in fact accounted for by the five-factor model's extraversion, neuroticism and conscientiousness dimensions is also supported, lending some support to Weiss et al's (2008) contention that trait affect is a manifestation of these personality dimensions.

Naturally, our study has limitations. Caveats highlighted by most personality and individual difference scholars in relation to self-report as opposed to observed-behavior measures necessarily apply (Carver, 2014). Also, generalizing from any single national sample comprising a specific subgroup, whether from the USA or elsewhere, is a limitation that requires due caution. This is perhaps especially so in this case because Kacen and Lee (2002) suggest cultural differences between East Asians and Westerners may influence impulse buying behavior. However, Shamdasani and Rook (1993) found that 'Hong Kong consumers are not much different than United States and Singapore consumers in terms of impulse buying behavior' (p. 8), a finding lending support to the generalizability of our results. Nevertheless, further research with different national and demographically broader samples to investigate generalizability will be useful.

Limitations aside, our findings suggest that further research on relationships between impulse buying and affect, personality, and other variables could usefully ensure that both state and trait affect, as well as the five-factor model, are taken into account. We did exploratorily test possible interactions between state and trait affect, and between both state and trait affect and five-factor personality dimensions, but found no significant results. Nevertheless, the relatively small percentage of variance in impulse buying explained by our models' variables suggests state affect, trait affect, and five-factor personality dimensions are likely in combination with additional personality, individual difference and contextual variables to influence impulse buying. Further research to theorize and test how such additional variables might combine with affect and personality perhaps to mediate and moderate their influences on impulse buying could usefully extend our understanding.

A further area of additional research relates to different conceptualizations and operationalizations of state affect's influence on impulse buying. We operationalized state affect over a month period, however, state affect can be operationalized over both more indeterminate prolonged periods, such as 'during the past few weeks' (Saeki, Oishi, Maeno, Gilbert, 2014, 125), and more definite, shorter and instantaneous time periods, such as the current affect typically manipulated in experimental research designs (e.g. Tibubos, Pott, Schnell & Rohrman, 2014). Studies to theorize and clarify the influences on impulse buying of, respectively, immediate and more prolonged state affect, and how these might with five-factor model, other personality, and contextual variables moderate or mediate impulse buying could prove illuminating.

More broadly, having established that personality accounts for the influence of trait affect on impulse buying, our research now begs the question of whether or not similar findings will be evident specifically for compulsive buying. Indeed, to the extent that both impulse buying and compulsive buying are generally regarded to be manifestations of regulatory-control dysfunction, our findings suggest that other impulsive and compulsive

behaviors might also exhibit similar patterns of association with *trait* affect (after controlling for *state* affect), that might likewise be largely accounted for by broader personality differences. Further research to hypothesize and examine such patterns of association will thus help understanding in the wider field of personality and individual differences that focuses on impulsive and compulsive behaviors.

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Table 1. Variable reliabilities and correlations

	1	2	3	4	5	6	7	8	9	10	11
1 Impulse Buying	<i>.73</i>										
2 Sex	-.26 ***	-									
3 Age	-.02	.14 ***	-								
4 State Affect	-.01	-.03	.09 **	<i>.85</i>							
5 Positive Trait Affect	-.06 †	.02	.09 *	.36 ***	<i>.71</i>						
6 Negative Trait Affect	.06 †	-.01	-.13 ***	-.66 ***	-.12 **	<i>.77</i>					
7 Extraversion	.09 **	-.08 **	-.01	.47 ***	.37 ***	-.35 ***	<i>.88</i>				
8 Openness	.02	.02 **	.01	.29 ***	.33 ***	-.21 ***	.34 ***	<i>.83</i>			
9 Neuroticism	.15 ***	-.14 ***	-.14 ***	-.50 ***	-.07 **	.61 ***	-.18 ***	-.09 *	<i>.80</i>		
10 Conscientiousness	-.23 ***	.00	.17 ***	.35 ***	.41 ***	-.28 ***	.16 ***	.22 ***	-.21 **	<i>.85</i>	
11 Agreeableness	-.03	-.06	.08 **	.38 ***	.18 ***	-.29 ***	.16 ***	.21 ***	-.27 **	.26 ***	<i>.80</i>

Note. Male coded 1. Reliabilities italicized on diagonal. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2. Hierarchical regressions

	Model 1		Model 2		Model 3		Model 4	
	SE B	β	SE B	β	SE B	β	SE B	β
<i>Controls</i>								
Sex	.08	-.26 ***	.08	-.26 ***	.08	-.24 ***	.07	-.24 ***
Age	.02	.01	.02	.02	.02	.07 *	.02	.07 *
State affect	.09	-.01	.05	.09 †	.04	.09 †	.05	.10 *
<i>Trait affect</i>								
Positive Affect			.04	-.07 *			.04	-.04
Negative Affect			.05	.10 *			.05	.02
<i>Personality</i>								
Extraversion					.04	.09 *	.04	.10 *
Openness					.04	.04	.04	.05
Neuroticism					.04	.13 ***	.04	.13 **
Conscientiousness					.04	-.27 ***	.04	-.25 ***
Agreeableness					.04	.00	.04	.00
R ²	.066		.075		.149		.150	
F Statistic	19.81***		13.51***		18.20***		14.62***	
ΔR^2			.009* ^a		.083*** ^a		.001 ^b	

Note. Male coded 1. ^a = ΔR^2 from Model 1, ^b = ΔR^2 from Model 3. †p<.10, *p<.05, **p<.01, ***p<.001.