A MORE PERSONALIZED SATISFACTION MODEL: INCLUDING THE BFI-44 IN THE AMERICAN CUSTOMER SATISFACTION MODEL.

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ABSTRACT

This study extends current research on customer satisfaction and the American Customer Satisfaction Index (ACSI) by incorporating personality into the American Customer Satisfaction Model (ACSM). Survey responses including basic demographic information, major choice, the ACSM, and BFI-44 were collected from 849 students from various colleges and universities across the United States. The research revealed that the BFI-44 can be reliably incorporated into the ACSM. Additionally, the inclusion of BFI personality traits substantially altered satisfaction rankings and comparisons that the students made relating to their choice of undergraduate major, a high-involvement product. The findings show that excluding personality from customer satisfaction data could result in less accurate information relating to customers' true satisfaction levels.

Keywords: customer satisfaction, personality, ACSM, five-factor model

INTRODUCTION

Hyper personalization is an important immerging marketing trend. Increasingly, consumers prefer individualized attention from organizations they patronize (Grossberg, 2016). Understanding customers is becoming more essential to finding and establishing a market and retaining loyal consumers. Identifying customer traits routinely helps marketers differentiate among potential consumer groups and create customized messages relating to these market segments. Traditional audience demographic data usually includes information such as age, income, and sex. Recent trends have suggested that common individual differences such as personality, passions, and positions on social and political issues should be used to identify and reach market segments (Stein, 2015; Hirsh, Kang & Bodenhausen, 2012, Haugtvelt, Petty & Cacioppo, 1992). Personality is an important customer characteristic that already has significant implications for advertising and marketing research (Haugtvelt, Petty & Cacioppo, 1992). Personality can influence perception of a product or service (Hennig-Thurau, 2004; Ekinci, & Dawes, 2009) and potentially introduce bias into the measurement of satisfaction. Research in customer satisfaction has explored the relationship between individual differences and complaining behaviors (Bodey & Grace,

2006; Gursoy, McCleary, & Lepsito, 2007), customer satisfaction antecedents (attitudinal, cognitive, social, and demographic), the connection between customer satisfaction and complimenting and complaining behaviors, and customer satisfaction outcomes (repurchase, loyalty, and firm performance) (Dahl & Peltier, 2015). Although the research on customer satisfaction has covered a range of topics, very little research has focused on the role that individual differences or personality plays in consumer satisfaction and dissatisfaction (Agarwal, Mehrotra, & Barger, 2016). Therefore, to follow recent trends in marketing, the research in customer satisfaction needs to explore how personality traits could increase the understanding of customer satisfaction.

In addition to attracting new customers, marketers need to retain the customers that they have. Attracting new customers is more expensive than maintaining one's current customer base. Satisfaction is one way that marketers work to maintain their clientele. Although scholars in marketing and retailing have examined how to promote products and advertise according to personality traits (Haugtvedt, Petty, & Cacioppo, 1992; Mooradian & Olver, 1997; Wolburg & Pokrywczynski, 2001), relatively little research has explored the influence of personality on customer satisfaction and intent to repurchase (Matzler, Faullant, Renzl, & Leiter, 2005; Gountas & Gountas, 2007; Jani & Han, 2014). The majority of the research on personality and customer satisfaction relates specifically to customer service experiences (Hennig-Thurau, 2004; Ekinci & Dawes, 2009; Agarwal et. al., 2016). The American Customer Satisfaction Model (ACSM) examines customer satisfaction in a broad context (Fornell, Johnson, Anderson, Cha, & Bryant, 1996). The ACSM is one of the most important

tools that marketers use to gauge the health of their industry, business, and brand. This research explores the influence of personality on customer satisfaction by including the Five-factor model (BFI-44) in the ACSM. A new model, PAM, is created that includes the five personality traits. By creating a model that accounts for the influence of personality on satisfaction, we can show a potential bias present in the current model, the ACSM.

LITERATURE REVIEW

There are many factors that drive product purchases. Advertising messages and retail environments are important tools that can influence individuals to make a purchase decision. However, most marketers want to do more than simply drive a single purchase; they want to cultivate customer loyalty to generate repeat purchases. Satisfying customers is key to achieving this essential goal. Marketing researchers agree that the benefits of customer loyalty should not be underestimated in today's competitive market (Reichheld & Teal, 1996; Yi, & Jeon, 2003; Yi & La, 2004). In addition to having an influence on how consumers perceive retail experiences and advertising and promotional messages, personality plays an important role in customers' satisfaction levels (Tan, Foo, & Kwek, 2004; Hirsh, Kang & Bodenhausen, 2012). Consumer post-purchase evaluation is essential to generating future sales. Satisfied customers tend to be more loyal and customer loyalty increases profits through repeat purchase (Anderson, Fornell, & Rust, 1997). During a social media age where customer reviews provide important information about products and services, customer satisfaction has become essential to organizational and product marketing and promotion. Satisfied customers generate free positive word-of-mouth saving media placement costs.

The benefits of customer satisfaction also extend beyond generating word-of-mouth and future sales. Corporate retention strategies are also positively influenced by customer satisfaction (Luo & Homburg, 2007). Because of its multifaceted nature, customer satisfaction also serves as an indicator of organizational effectiveness and value through increased stock prices (Luo, Homburg, & Wieseke, 2010). Research in the hospitality and tourism industries indicates that customer satisfaction enhances a firm's profitability and value (Sun & Kim, 2013).

Customer satisfaction and an understanding of consumer psychology are especially important for high-involvement products. High-involvement products and services are those that the consumer perceives to be of greatest importance and consumers think about the most. Mittal (1989) defines involvement as, "the degree of interest of a person in an object." Consumers with a high level of dedication are more affected by consumer-generated information such as online reviews (Park, Lee, & Han, 2007). Customers research high-involvement products, follow news and media coverage of the products, and even allow these types of products to form an aspect of their ego or identity (Taylor, 1999). Therefore, a great deal of care is taken in the selection of the high-involvement product or service. Because of the level of concern that the consumer demonstrates involving these types of products, customer satisfaction is extremely important.

An understanding of consumer psychology and personality traits can also help organizations understand whether their customers are truly satisfied with their product or service. A lower score from a group exhibiting certain personality traits might not actually indicate lower satisfaction if the market group's tendency is to be more conservative or critical in their

reporting. Likewise, another group might be more inclined to report higher scores. However, these higher scores might not actually indicate higher satisfaction levels. Instead, the market group could be predisposed to try to please the researcher or might be less critical by nature. Like other aspects of marketing communication, customer satisfaction can also be influenced by demographics and personality traits. Relatively few studies have examined the influence of individual differences on customer satisfaction. The limited research that has explored personality and customer satisfaction found a significant relationship linking the two (Mooradian & Olver, 1997).

Gaining a better understanding of how individual differences, such as personality traits, influence satisfaction can help marketers better understand how to satisfy their highly-involved customers and interpret their satisfaction levels. For instance, market segments exhibiting certain personality characteristics might report higher or lower levels of satisfaction based on their individual predispositions (Brody & Cunningham, 1968; Haugtvedt, Petty, & Cacioppo, 1992; Hirsh & Dolderman, 2007). Therefore, the goal of this research is to incorporate personality into the ACSM to attain a more accurate reading of customer satisfaction within the context of a high-involvement product purchase.

The American Customer Satisfaction Index Model (ACSM)
The ACSM is a market and consumer-based performance measure for organizations, economic sectors, and national economies. The ACSM is based in economics and reflects overall consumer satisfaction with products and services. The ACSM represents a cumulative evaluation of customer satisfaction rather than an evaluation of a single instance or transaction (Fornell, Johnson, Anderson, Cha, & Bryant,

1996). The customer satisfaction literature provides a number of models and measures for evaluating customer satisfaction. However, the ACSM is unique in offering both antecedents and consequences of satisfaction. Researchers and practitioners benefit greatly from knowing specific factors influencing satisfaction as well as the ways satisfaction influences organizational constructs. The ACSM is also robust and adaptable. It can be successfully applied to a variety of goods and services (Anderson & Fornell, 2000).

Cumulatively, the ACSM represents a comprehensive evaluation of organizations' market offerings rather than an individual's assessment of a market transaction. Even though transaction specific measures provide information about specific situations relating to consumers' interactions with products and services, overall satisfaction is a broader assessment of an organization's past, current, and future performance through the lens of customers' expectations and experiences (Anderson, Fornell, & Lehmann, 1994). Measurements of customer satisfaction also have predictive value because they can be used to forecast future profits.

Customer satisfaction as measured by the ACSM has three antecedent variables: customer expectations, perceived value, and perceived quality. Perceived expectations (PE) represent the served market's previous consumption experience, including non-experiential information available through sources such as advertising and word-of-mouth, and the customer's evaluation of the firm's ability to deliver quality in the future. Including perceived value (PV), or the perceived level of product quality relative to the price paid, adds price information into the model and increases comparability of results. Perceived quality (PQ) or performance evaluates the served markets' perceptions of their consumption experience. PQ is expected to positively and directly influence customer satisfaction (Anderson & Fornell, 2000).

Increased customer satisfaction results in an increase in customer loyalty and a decrease in customer complaints (Fornell & Wernerfelt, 1988). Because of its value as a proxy for profitability, loyalty is the most important dependent variable in the ACSM (Reichheld & Sasser, 1990). The other outcome, customer complaints, indicates dissatisfaction. Customers have the option of switching to a competitor or voicing complaints (Reichheld & Sasser, 1990). Word-of-mouth from satisfied customers reduces the expense of attracting new customers and improves the organization's reputation. Word-of-mouth from dissatisfied customers has the opposite effect (Anderson, 1998; Fornell, 1992). Therefore, organizations providing excellent quality enjoy economic returns related to their customers' satisfaction. A visual representation of the ACSM can be seen in figure one below.

FIGURE 1
AMERICAN CUSTOMER SATISFACTION MODEL (ACSM) AND ITS LOADINGS

American Customer Satisfaction Index Model or ACSM
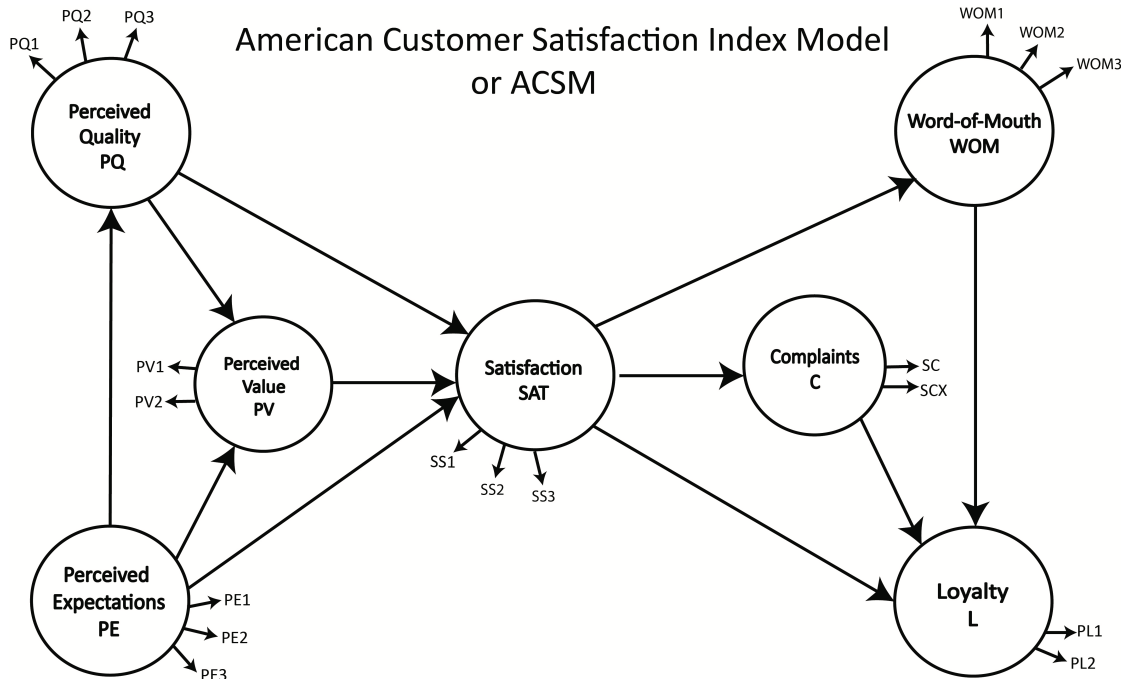
Although the ACSM measures satisfaction, customer satisfaction is not directly observable. Therefore, ACSM constructs are latent variables that cannot be measured directly. The ACSM is measured through a 19-item survey that includes a series of five-point Likert-type scales. The survey items form seven subscales, and these subscales generate an overall satisfaction measure (Serenko, 2011).

Personality and Customer Satisfaction
Satisfaction is often measured based on survey responses to questionnaires that compile data about customer demographics and satisfaction with a product or service. However, this approach to evaluating satisfaction assumes that all respondents will answer items in the same way. While this approach is very common, it is highly plausible that individuals with certain personality traits might be more inclined to report being highly satisfied than others introducing bias into the measurement of

satisfaction. This tendency can either be because people with certain personality traits experience higher/lower levels of satisfaction than others or because personality traits fundamentally influence the way individuals report their satisfaction (Jackson, Crawford & Pritchard, 2017).

An individual's satisfaction with a given decision is shaped by many factors. Successful marketing strategy ultimately depends upon satisfying customer wants and needs and thereby generating customer utility. Marketers recognize that consumer behavior and satisfaction is driven by a variety of personal and contextual factors. Marketers segment audiences according to these factors. The purpose of such segmentation is to identify and serve individual customers with similar needs and behaviors (Wedel & Kamakura, 1998). The opportunity to market to groups of individuals rather than a mass market leads to a more customized message and potentially to more profitability. Academic

research has shown that tailoring marketing messages by individual personality traits is more effective than using basic demographics (age, income, sex, etc.) alone (Hirsh, Kang, & Bodenhausen, 2012). Consumer products attract different markets and those markets might report satisfaction differently based on their personality. For instance, people buying a Dell laptop might be much easier to please than MacBook laptop users. MacBook users might be looking for more than a product that functions well. Being a MacBook user might be part of their common identity. And, many Macintosh users may share common personality traits that might predispose them to evaluate their laptop differently than a Dell laptop user. Therefore, organizational evaluation of customer satisfaction data might be enhanced by including information about consumers' personality traits in the data.

This study focuses on the often-overlooked influence of personality traits on customer satisfaction. Personality is defined as a person's stable personal dispositions that determine consistent patterns of behavior across contexts (Widhiarso, 2011). Traits are the building blocks of personality (McCrae & Costa, 1987). In the 1980s John, Donahue, and Kentle developed the Big Five Inventory (BFI) measuring the five-factor model of personality in an abbreviated form (John, Naumann, and Soto, 2008). The five-factor model is measured by the BFI-44, a forty-four item Likert-type questionnaire that measures the personality constructs of **O**penness to experience, **C**onscientiousness, **E**xtraversion, **A**greeableness, and **N**euroticism. The first letters of the five traits spell the acronym OCEAN. *Openness to experience* is characterized by imagination, intellect, and independent thought. *Conscientiousness* relates to orderliness, responsibility, and dependability. *Agreeableness* is demonstrated through cooperativeness and by being good-natured and trusting. Agreeable people are motivated to maintain positive relationships with others (Jessen-Campbell & Graziano, 2001). *Extraversion* is manifested in being talkative, assertive, and energetic. The extravert prioritizes social behavior and the impact of social behavior (Jessen-Campbell & Graziano, 2001). Emotional stability (versus *Neuroticism*) is described as being calm, not neurotic, and not easily upset (John & Strivastava, 1999). All personalities can be described through these five traits that are enduring and consistent over time and across situations.

Scholarly research utilizing the BFI-44 yields adequate to excellent internal consistency reliabilities, with alpha reliability coefficients from .75 to .90. Both content and factor analyses of differential measurements of the BFI-44 replicate the underlying five-factor model (John & Strivastava, 1999). When completing the BFI-44, research participants rated 44 statements about themselves on a five-point Likert scale ranging from "disagree strongly" to "agree strongly." In about five minutes, research participants can complete the entire BFI-44.

Individual personality traits can influence affect or emotion. And affective experiences can have an influence on satisfaction (Mooradian & Olver, 1997). Temperamental differences in Extraversion (Argyle & Lu, 1990) and emotional stability can have an effect on positive affect and provide the psychological basis of happiness. Agreeableness provides the social and Conscientiousness provides the achievement components of happiness (Furnham, & Cheng, 1997; Hayes & Joseph, 2003). Combined, these four traits constitute the happy personality. The BFI traits also influence purchasing behavior. Mooradian and Olver's (1997) model connecting personality, consumption-based emotions,

satisfaction, and post-purchase outcomes was mostly affirmed. Extraversion predicted positive consumption-based emotions. Neuroticism had a relationship with negative consumption-based emotions. These findings supported previous research suggesting that product satisfaction is increased by both positive product-based emotions and affirmation of expectations related to the product and decreased by negative product-based emotions (Mooradian & Olver, 1997).

Including personality traits as defined by the BFI-44 in the ACSM allows satisfaction to be measured in a manner that accounts for individual bias related to individual differences manifested in personality traits. Therefore, including personality into an adjusted ACSM could allow the ACSM to reveal a more true satisfaction score. Previous research has not explored the influence of personality on the ACSM.

RESEARCH QUESTIONS AND HYPOTHESES

Drawing from the literature, we developed the following research questions and hypotheses related to incorporating personality traits into the ACSM.

RQ1: Can the BFI personality traits be reliably incorporated into the ACSM?

H1: Individuals possessing the happy personality traits of Extraversion, Emotional stability, Conscientiousness, and Agreeableness will report higher satisfaction levels.

H2: The inclusion of the BFI personality traits will increase the goodness of fit relative to the ACSM.

RQ2: Does the inclusion of BFI personality traits substantially alter satisfaction rankings and comparisons?

Sample Description

A student sample was used to measure satisfaction and personality within the context of the students' experiences with their undergraduate majors, a high-involvement product. Although satisfaction with a student's major is not the primary research question for this study, it provides a context through which personality and satisfaction can be studied. Responses to an instrument including the ACSM and the BFI-44 were solicited through an anonymous online survey administered to students at various public and private institutions of higher education. Surveys were collected from two different regions of the United States. No students were required to complete the survey as part of required course activities but some students were offered a small amount of course credit for participation.

Upon IRB protocol approval, we obtained online survey responses from 11 universities located in nine US states. Both private and public universities were included. The institutions ranged in size from small liberal arts colleges to larger public universities. We did not solicit any responses from elite colleges and universities. The majority of the student sample population was comprised of undergraduates enrolled in principles of microeconomics classes with the remaining students enrolled in mass communication or human communication classes. Although the student sample was gathered from communication and economics classes, the sample represented a range of majors due to these classes satisfying general education requirements.

A total of 849 students participated in the survey. Tables 11 and 12 provide count data on the number of students in the sample by college and major respectively. After narrowing the data set to students listing a major who fully responded to the

BFI-44 question and the full set of ACSM question, 710 students remained in the sample. The data set was 50.4% female (N = 358) and 48.2% male (N = 342), approximately matching the current sex ratio in undergraduate education, which skews female. The students represented public higher education institutions (87.5%, N = 621) more than private institutions (10.4%, N = 74).

RESULTS

Estimating the ACSM

SMART-PLS was used to estimate the ACSM model given in Figure 1. The outer loadings from the PLS estimation are given in Table 1 with the path coefficients given in Table 2. Standard errors reported in all tables were generated from bootstrapping the sample 1000 times; highly statistically significant as is expected.

All outer loading coefficients are of the appropriate sign and Path coefficients are also of the expected signs, but there is not significance along all paths in the model. The pathways from Complaints to Loyalty and from Perceived Expectations to Satisfaction are not significant at any level. Perceived Expectations have an indirect impact on Satisfaction in the model though the effects on Perceived Quality and Perceived Value which both have a significant effect on Satisfaction. The lack of statistical significance for the path from Complaints to Loyalty, however, is reflective of the poor reliability scores of the Complaints construct. The students in the sample rarely complain, limiting the usefulness of the measure. The reliability scores of each latent variable are reported in Table 3.

TABLE 1
ACSM OUTER LOADINGS

	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES
PE1 <- PE	0.911	0.911	0.009	105.491	0.000
PE2 <- PE	0.904	0.904	0.010	92.084	0.000
PE3 <- PE	0.932	0.932	0.007	142.278	0.000
PL1 <- L	0.939	0.939	0.008	111.103	0.000
PL2 <- L	0.944	0.944	0.006	166.688	0.000
PQ1 <- PQ	0.921	0.921	0.008	108.920	0.000
PQ2 <- PQ	0.929	0.929	0.009	108.180	0.000
PQ3 <- PQ	0.924	0.924	0.009	101.923	0.000
PV1 <- PV	0.926	0.926	0.007	131.339	0.000
PV2 <- PV	0.838	0.838	0.025	34.132	0.000
SC <- C	0.968	0.929	0.243	3.988	0.000
SCX <- C	-0.552	-0.575	0.239	2.310	0.021
SS1 <- SAT	0.907	0.907	0.006	146.935	0.000
SS2 <- SAT	0.798	0.797	0.024	32.912	0.000
SS3 <- SAT	0.900	0.900	0.008	117.825	0.000
WOM1 <- WOM	0.914	0.914	0.011	83.129	0.000
WOM2 <- WOM	0.958	0.958	0.005	197.736	0.000
WOM3 <- WOM	0.949	0.949	0.006	160.217	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

TABLE 2
ACSM PATH COEFFICIENTS

	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES
C -> L	-0.017	-0.017	0.030	0.566	0.571
PE -> PQ	0.416	0.416	0.041	10.258	0.000
PE -> PV	0.124	0.124	0.038	3.246	0.001
PE -> SAT	0.043	0.043	0.027	1.558	0.120
PQ -> PV	0.522	0.523	0.033	15.837	0.000
PQ -> SAT	0.642	0.641	0.030	21.470	0.000
PV -> SAT	0.212	0.213	0.030	7.132	0.000
SAT -> C	0.262	0.256	0.078	3.350	0.001
SAT -> L	0.298	0.296	0.047	6.403	0.000
SAT -> WOM	0.698	0.699	0.024	29.193	0.000
WOM -> L	0.460	0.462	0.045	10.177	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

TABLE 3
ACSM EVALUATION

	CRONBACH'S ALPHA	COMPOSITE RELIABILITY	AVE	R SQUARE
C	-0.957	0.185	0.620	0.069
PE	0.904	0.940	0.839	
L	0.872	0.940	0.887	0.486
PQ	0.915	0.947	0.855	0.173
PV	0.726	0.876	0.780	0.342
SAT	0.839	0.902	0.756	0.644
WOM	0.935	0.958	0.885	0.488

Every measure, except for Complaints, gets satisfactory [1] reliability scores on AVE, Composite Reliability, and Cronbach's alpha statistics. That discriminant validity is satisfied for the ACSM is demonstrated by examination of tables A1 and A2 in the appendix, which display the Fornell-Larker Criterion[2] and Cross Loadings[3], respectively. The ACSM model explains 64% of the

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[1] We apply the commonly accepted thresholds in the literature for reliability statics. Specifically we require: Cronbachs alpha ≥ .7, Average Variance Extracted (AVE) ≥ .5, and Composite Reliability ≥ .7. These threshold's are applied throughout the study.

[2] The Fornell-Larker criterion accesses discriminant validity by requiring the square root of AVE of any construct should be greater than the correlation coefficient with all other constructs.
[3] Cross Loadings demonstrate discriminant validity when a constructs highest loadings come from the items used to measure it.

variation in Satisfaction and 49% of the variation in Loyalty as shown by R Squared statistics reported in Table 3.

The Personality Adjusted Model (PAM): Incorporating PAM Into the ACSM

This study does not merely replicate the already established ACSM model. Rather, the robustness of the ACSM to the inclusion of personality traits is tested. To do so, a modification of the ACSM that we refer to simply as the Personality Adjusted Model (PAM) is proposed. The Big-five personality dimensions are utilized as the personality measures in the PAM. This study uses the BFI-44 but practitioners could easily include the Big-five dimensions by using the shorter 10-question inventory (Gosling, Rentfrow, & Swann, 2003).

FIGURE 2
PAM STAGE 1
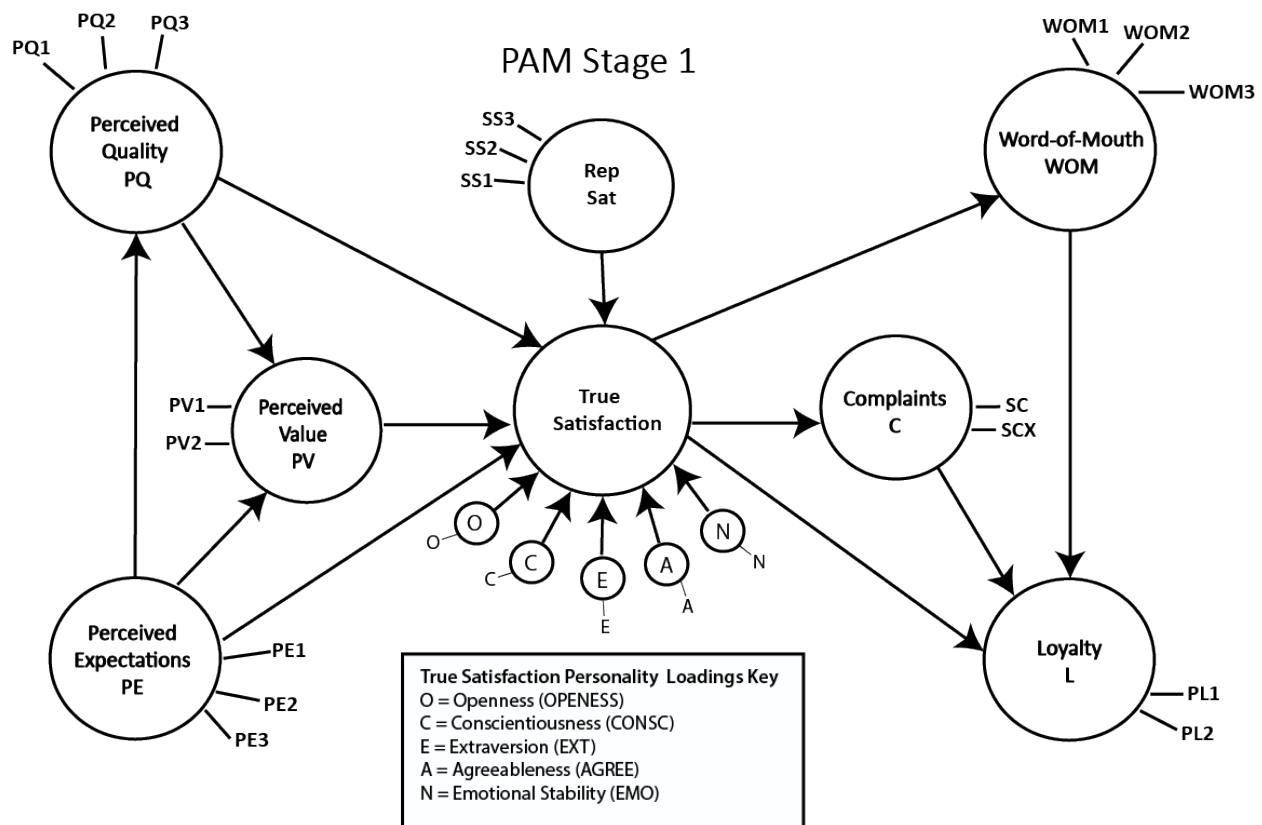
Large bodies of work have shown that personality is a significant source and cause of satisfaction yet the ACSM completely ignores it. This new model makes a distinction between a consumer's Reported Satisfaction (which is what the ACSM measures) and a consumer's "true" Satisfaction, which may deviate from what is reported due in part to the influence of personality. Satisfaction is surely partially composed of Reported Satisfaction. However, the PAM model also incorporates the fact that people with different personality traits experience and report satisfaction differently. Personality is added to the ACSM, which results in a Reflective-Formative Type (Becker et al., 2012) Hierarchical Component Model (HCM) in which the latent variable Satisfaction is formatively constructed from six latent structures: Reported Satisfaction (Rep Sat), Agreeableness (AGREE), Conscientiousness (CONSC), Extraversion (EXT), Emotional stability (EMO), and Openness (OPENESS). Reported Satisfaction is measured reflectively by the three standard ACSM questions regarding satisfaction. Each of the personality trait latent variables are single item reflective measures derived from the personality score in the BFI-44.[4] The structure of the PAM model is presented in Figure 2.

The PAM model is a HCM that can be estimated in two stages. In the first stage, estimates are generated for the latent constructs of Rep Sat and each of the personality traits. When using this two-step procedure, it is important that all constructs

[4] It is possible to reflectively measure each personality trait by each question in the BFI-44 rather than as a single item. We chose to use single item measures to minimize the impact of personality traits on Satisfaction in the model. Because Reported Satisfaction is a three-item measure, its influence receives higher weight in the two-stage HCM procedure.

satisfy the appropriate validity measures. The validity statistics for the stage 1 of PAM constructs are given in Table 4. Note that Reported Satisfaction satisfies minimum thresholds with a Cronbach's alpha of .839, an AVE of .757 and a Composite Reliability of .903. The personality latent constructs are one item measures whose validity can't be assessed. Although True Satisfaction is technically measured reflectively in the Stage 1 process, the latent score for True Satisfaction is estimated formatively in the second stage. Discriminant validity is displayed in Tables A3 and A4 which give the Fornell-Larker Criterion and Cross Loadings, respectively. The first stage outer loadings, see Table A5, confirm that personality scores have a significant relationship with satisfaction as each has a statistically significant effect on True Satisfaction.

The second stage of the PAM model (see figure 3) uses latent variable scores for Rep Sat along with personality traits to formatively measure True Satisfaction. The outer loadings from the second stage of the PAM are given in Table 5. Reported Satisfaction is the main driver of True Satisfaction yet each of the Big Five personality traits is significant in its measure as well. All other coefficients are very similar to those in the standard ACSM

FIGURE 3
PAM STAGE 2

TABLE 4
PAM STAGE 1: EVALUATION

	CRONBACH'S ALPHA	COMPOSITE RELIABILITY	AVE	R SQUARE
AGREE	1.000	1.000	1.000	
C	-0.957	0.198	0.616	0.059
CONSC	1.000	1.000	1.000	
EXT	1.000	1.000	1.000	
EMO	1.000	1.000	1.000	
OPENESS	1.000	1.000	1.000	
PE	0.904	0.940	0.839	
L	0.872	0.940	0.887	0.484
PQ	0.915	0.947	0.855	0.173
PV	0.726	0.876	0.780	0.341
REPORTED SAT	0.839	0.903	0.757	
TRUE SAT	0.660	0.744	0.318	1.00
WOM	0.935	0.958	0.885	0.506

TABLE 5
PAM STAGE 2: OUTER LOADINGS

	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES
AGREE -> TRUE SAT	0.335	0.335	0.044	7.700	0.000
CONSC -> TRUE SAT	0.253	0.253	0.047	5.408	0.000
EXT -> TRUE SAT	0.139	0.137	0.049	2.820	0.005
EMO -> TRUE SAT	0.232	0.230	0.049	4.760	0.000
OPENESS -> TRUE SAT	0.088	0.086	0.051	1.725	0.085
PE1 <- PE	0.911	0.911	0.008	110.780	0.000
PE2 <- PE	0.904	0.904	0.010	91.227	0.000
PE3 <- PE	0.932	0.932	0.006	145.897	0.000
PL1 <- L	0.939	0.939	0.009	106.849	0.000
PL2 <- L	0.945	0.945	0.006	162.991	0.000
PQ1 <- PQ	0.921	0.921	0.008	113.380	0.000
PQ2 <- PQ	0.929	0.929	0.008	109.526	0.000
PQ3 <- PQ	0.925	0.925	0.008	111.867	0.000
PV1 <- PV	0.924	0.925	0.007	129.909	0.000
PV2 <- PV	0.840	0.839	0.025	33.932	0.000
REPORTED SAT -> TRUE SAT	0.985	0.984	0.005	185.761	0.000
SC <- C	0.967	0.946	0.169	5.729	0.000
SCX <- C	-0.553	-0.586	0.189	2.927	0.004
WOM1 <- WOM	0.914	0.914	0.011	82.980	0.000
WOM2 <- WOM	0.958	0.958	0.005	199.545	0.000
WOM3 <- WOM	0.949	0.949	0.006	158.810	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

TABLE 6
PAM STAGE 2: PATH COEFFICIENTS

	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES
C -> L	-0.015	-0.015	0.030	0.483	0.629
PE -> PQ	0.416	0.418	0.041	10.075	0.000
PE -> PV	0.124	0.123	0.038	3.254	0.001
PE -> TRUE SAT	0.070	0.068	0.027	2.564	0.010
PQ -> PV	0.522	0.522	0.034	15.387	0.000
PQ -> TRUE SAT	0.625	0.626	0.030	20.601	0.000
PV -> TRUE SAT	0.213	0.214	0.033	6.473	0.000
TRUE SAT -> C	0.255	0.255	0.059	4.301	0.000
TRUE SAT -> L	0.308	0.312	0.045	6.893	0.000
TRUE SAT -> WOM	0.712	0.714	0.022	31.997	0.000
WOM -> L	0.449	0.446	0.046	9.780	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

The path coefficients for the PAM are given in Table 6. All paths have the expected sign. The only path that is not significant is the path from True Satisfaction to Complaints (C). The path from Perceived Expectations to Satisfaction was not significant in the ACSM, but the path from Perceived Expectations to True Satisfaction is significant in the PAM model.

Reliabilities for the latent constructs are found in Table 7 and meet minimum thresholds again with the exception of Complaints, which also failed in the ACSM. True Satisfaction, as a formative measure, doesn't have Cronbach's alpha, AVE, or Composite Reliability scores. The outer weights, Table 8, do inform us on the contribution that each formative indicator makes to the measurement of True Satisfaction. All personality traits with the exception of Extraversion and Emotional Stability have significant outer weight values. The R squared value for True Satisfaction is .641 indicating that 64% of the variance in True Satisfaction is explained by the model. This is slightly lower than the R-squared value of .6442 of Satisfaction in the ACSM model. Discriminant validity is displayed in Tables

A6 and A7, which give the Fornell-Larker Criterion and Cross Loadings, respectively.

This research has demonstrated that the PAM model and its constructs are valid just as those of the ACSM have been shown to be valid in the existent literature. Thus, the researchers can answer RQ1 with an affirmative yes.

As stated in our first hypothesis (H1), we predicted that individuals possessing the happy personality traits of Extraversion (EXT), Emotional stability (EMO), Conscientiousness (CONSC), and Agreeableness (AGREE) would report higher levels of satisfaction. Consistent with this hypothesis, each of the personality traits receive positive outer loading and weights. Each of the personality traits except for Extraversion (EXT) and Emotional stability (EMO) generate statistically significant outer weights. The happy personality traits of Agreeableness (AGREE) and Conscientiousness (CONSC) both contribute positively to satisfaction at a statistically significant level. Therefore, the research supported H1. Interestingly, although Openness (OPENESS) is not a part of the happy personality, it contributes positively to customer satisfaction at the 10% level of confidence.

TABLE 7
PAM STAGE 2: EVALUATION

	CRONBACH'S ALPHA	COMPOSITE RELIABILITY	AVE	R SQUARE
C	-0.957	0.184	0.621	0.065
PE	0.904	0.940	0.839	
L	0.872	0.940	0.887	0.488
PQ	0.915	0.947	0.855	0.173
PV	0.726	0.876	0.780	0.341
TRUE SAT				0.641
WOM	0.935	0.958	0.885	0.507

TABLE 8
PAM STAGE 2: OUTER WEIGHTS

	ORIGINAL SAMPLE	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUES
AGREE -> TRUE SAT	0.108	0.108	0.031	3.464	0.001
CONSC -> TRUE SAT	0.069	0.067	0.028	2.482	0.013
EXT -> TRUE SAT	0.022	0.021	0.029	0.746	0.456
EMO -> TRUE SAT	0.011	0.011	0.032	0.353	0.724
OPENESS -> TRUE SAT	0.049	0.047	0.029	1.706	0.088
PE1 <- PE	0.355	0.354	0.013	27.314	0.000
PE2 <- PE	0.361	0.362	0.014	25.480	0.000
PE3 <- PE	0.376	0.375	0.012	30.247	0.000
PL1 <- L	0.518	0.518	0.009	55.273	0.000
PL2 <- L	0.544	0.544	0.013	42.075	0.000
PQ1 <- PQ	0.368	0.368	0.007	54.995	0.000
PQ2 <- PQ	0.360	0.360	0.006	63.732	0.000
PQ3 <- PQ	0.354	0.354	0.006	57.998	0.000
PV1 <- PV	0.660	0.660	0.026	25.132	0.000
PV2 <- PV	0.464	0.463	0.020	23.228	0.000
REPORTED SAT-> TRUE SAT	0.951	0.949	0.013	70.564	0.000
SC <- C	0.880	0.830	0.158	5.573	0.000
SCX <- C	-0.269	-0.291	0.123	2.186	0.029
WOM1 <- WOM	0.360	0.360	0.007	53.700	0.000
WOM2 <- WOM	0.356	0.356	0.005	72.569	0.000
WOM3 <- WOM	0.348	0.348	0.005	72.638	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

Next, we tested hypothesis two (H2), or whether the inclusion of personality traits increased the goodness of fit relative to the ACSM. Although there is no consensus in the PLS methods literature on an overall measure of goodness of fit, we give the results of several competing measures for both the ACSM and PAM models in Table 9. The standardized root mean square residual (SRMR) value for ACSM is .054 and .047 for the PAM. This indicates a good fit for both models with a slight favoritism to the PAM model. Likewise, the Normed Fit influence satisfaction ranking.

Index (NFI), Bentler and Bonett (1980), values of .840 and .842 for the ACSM and PAM models, respectively, also slightly favors the fit of the PAM model over the ACSM. The answer to RQ2 is another yes. Inclusion of the Big Five personality traits in the ACSM to create the PAM does increase model fit supporting H2. This is of no consequence, however, if the PAM and the ACSM ultimately give identical output. The research now shows that choice of model does

TABLE 9
MODEL COMPARISON: GOODNESS OF FIT

	ACSM	PAM
SRMR	0.054	0.047
NFI	0.840	0.842

TABLE 10
RANKING OF MAJOR CATEGORY

Major Area	ACSM	PAM	Count
Communication and Media	1	1	113
Sciences (STEM and Agriculture)	2	2	233
Pre-professional, Health, and Education	3	4	117
Arts, Letters, and Social Sciences	4	3	69
Business	5	5	136

Personality's Influence On Rankings and Comparisons

To answer the second research question (RQ2), we further compared the customer satisfaction output of the two models as they rank the various colleges of the university by satisfaction. To compute a satisfaction score for a college we identify the academic home of each major in the sample and then compute the average of the satisfaction latent variable for each of the two models (SAT for the ACSM and TRUE SAT for the PAM). We provide the ranking of each college under the two models in Table 10. While rankings are similar, if you are the Dean of Arts, Letters, and Social Sciences you would much prefer the output under the PAM rather than ACSM model as the ranking of that college jumps from 4th using the ACSM to 3rd using PAM. While it is relatively mild at this level, the rankings do change depending on the underlying model.

Similar rankings are also computed for individual college majors. As there are many majors in the sample, and many have such a small number, only those majors that have 15 or more students in the sample are ranked. Table 11 shows the ranking using each of the two models. Again, while the rankings are similar, there are a number of jumps up and down. Advertising/PR moves from a third ranking all the way to first when personality is included in the measurement of satisfaction. Crop and Weed Science moves from second to third and Sports Communication drops from first to second. There is less switching in the middle and lower ranks. Engineering and Agribusiness flip their rankings with Agribusiness moving from 8th to 7th place when personality is taken into account. Accounting and Marketing have a similar flipping of rankings as Marketing moves up to take Accountings 12th place ranking in the PAM vs ACSM. Therefore, it is concluded that personality inclusion does substantially alter satisfaction rankings and comparisons. The answer to RQ2 is another yes. Personality traits do appear to influence students' reported satisfaction with their majors and their rankings.

TABLE 11
RANKING OF MAJOR

Major	ACSM	PAM	Count
Sports Communication	1	2	18
Crop & Weed Science	2	3	18
Advertising & PR	3	1	38
Architecture & Landscape Architecture	4	4	17
Animal Science & Veterinary	5	5	29
Pharmacy	6	6	41
Engineering/Civil Engineering/Industrial	7	8	46
Agribusiness	8	7	34
Criminal Justice	9	9	15
Journalism (all other)	10	10	31
Human/Family Development/Social Work	11	11	15
Accounting & Finance	12	13	48
Marketing	13	12	21
Business/Administration/Management	14	14	54

Distribution Of Personality Traits
Figures A1-A5 show 90% confidence intervals about the sample mean of each of the Big Five personality traits broken down by college. Communication students have the highest average Extraversion scores which are statistically distinguishable from the lower averages for Arts and Letters, Sciences, and Pre-Professional students. None of the colleges have a distinguishable mean score in Agreeableness. The students with the highest Consciousness scores are those in Arts and Letters and the Sciences. While lowest average scores are had by students in Business the confidence intervals do slightly overall. The most Emotionally Stable students are in the Sciences and the average there is statistically greater than the mean for both Communication and Pre-Professional students.

Figures A6-A10 show 90% confidence intervals about the sample mean of each of the Big Five personality traits broken down by major for each major with 15 or more observations in our sample. These figures demonstrate that there are systematic differences in the distribution of personality traits by students in different college majors in the sample. This is consistent with previous literature (Crawford, Fudge, Hubbard, & Filak, 2013; Pringle, DuBose, & Yankey, 2010) which has demonstrated that personality traits are correlated with student choice of major. Marketing and Sports Communication students report the most extraversion. Engineering students are the least agreeable. Advertising, Crop and Weed Science, and Criminal Justice report the highest scores in Conscientiousness. Journalism and Human Development students are the least emotionally stable. Journalism and Architecture students report high Openness while Agribusiness, Crop and Weed Science, and Human Development students report low scores.

Personality is closely linked to student satisfaction because personality is

closely linked with affect. Previous research demonstrated that customer satisfaction has emotion-based antecedents (Mooradian & Olver, 1997). Communication students had the highest average level of Extraversion and scored relatively high on Agreeableness. Personality literature would state that this combination of traits fosters positive emotion and this emotion would enhance students' satisfaction levels (Mooradian & Olver, 1997). Likewise, the majors that reported the highest levels of satisfaction (Marketing, Sports Management, and Advertising and PR) also tended to score high on Extraversion and Agreeableness. Therefore, our findings are consistent with previous literature linking Extraversion, positive affect, and satisfaction (Mooradian & Olver, 1997, Larsen & Ketelaar, 1989; Larsen & Ketelaar, 1991).

DISCUSSION AND LIMITATIONS

According to the latest ACSM information, customer satisfaction in the United States is at a nine year low (Klie, 2015). Although declining customer satisfaction scores are not a new phenomenon, researchers suggest the low scores are taking a toll on the U.S. national gross domestic product averages, economy, and employment market (Klie, 2015). Because many sectors of the U.S. economy depend on reliable analysis from the ACSM, it is imperative that the information that is collected be as accurate as possible. This is especially true for high-involvement products. Without accurate information, organizations cannot make the appropriate adjustments to products and messaging to see improvement in satisfaction.

The results of the study demonstrate that including personality in the ACSM measures is imperative to gathering accurate information about satisfaction levels. Significant differences were found between the scores and rankings using the standard ACSM and the PAM. The bias exists to the extent that customers' personality traits are influential in their choice to consume a product, in this case a college major. As advertising and other marketing efforts often target customers with particular traits such bias is likely to be prevalent among consumer groups. The personality of Chevrolet customers is likely to be systematically different from that of Lexus customers. Therefore, one could expect that differences in reported satisfaction scores could be related to both personality and satisfaction levels. In fact, advertising and marketing trends encouraging product messages to become increasingly personalized might perpetuate and amplify such distinctions. By accounting for the influence of personality in the model, we are able to more accurately measure customer's true satisfaction levels.

By understanding the influence that personality has on satisfaction one can better interpret the meaning of the customer satisfaction data that one obtains through the ACSM. Without the PAM model, firms might be overestimating or underestimating customer satisfaction levels. Some of what marketers might interpret as satisfaction or dissatisfaction from data analysis from the ACSM could relate to customer personality traits instead of actual customer experiences with a service or the performance of a product. By including personality in the model, the influence of personal differences is removed from satisfaction and, through this process, the ACSM's focus on the actual customer experience is increased. By including personality as part of the customer information included in the ACSM through the new PAM model, the ACSM performance and accuracy is improved.

Although this research has shown that personality plays an important role in reported customer satisfaction levels, there are some limitations to the research.

Customers report various involvement levels for different kinds of products and services (Vaughn, 1980; Vaughn, 1986; Taylor, 1999). A college major is considered a high-involvement product or service because students put a great deal of time and effort into selecting the right major for their individual needs and strengths. A choice of college major reflects strongly on the student. Other examples of high-involvement products could include health care, automobiles, real estate, and travel and tourism. These high-involvement products tend to personalize their messages to resonate with their chosen consumer groups. However, other products typically involve less consideration from the consumer. These products would be considered low involvement. Examples of products that are typically low involvement would include paper products, personal care items, groceries, and cleaning supplies. Because consumers do not involve themselves as much in these more routine purchases, it is not clear that personality or personalized marketing would have the same level of influence. In addition, hyper-personalized marketing and relationship marketing techniques are less prevalent in goods that are marketed to mass audiences (Gordon, McKeage, & Fox, 1998).

Another research limitation involves the bias that personality traits can introduce into survey-driven metrics. For instance, individuals rating higher on Extraversion and Openness are more likely to volunteer to fill out surveys (Marcus & Schütz, 1999). Research has also found that individuals scoring higher on Openness are generally more likely to engage in information sharing (Cabrera, Collins & Salgado, 2006). Although not one of the two traits that is the most predictive of happy personality, Emotional Stability, Conscientiousness, and Extraversion (Hayes & Joseph, 2003), some research has linked Openness to emotional

intelligence and happiness (Furnham, & Petrides, 2003). Those unwilling to volunteer to complete surveys reported lower Conscientiousness ratings. However, student participants were rewarded with extra credit for completing the survey. This type of incentive tends to reduce this type of bias (Marcus & Schütz, 1999).

A further potential limitation of our research is that our sample is not perfectly representative of the population of the United States. People from different regional and cultural groups have different norms which may lead them to cope with and/or experience emotions differently. For instance, Roesch, Wee and Vaughn (2006) found differences between how an Asian American co-culture (Korean Americans) and Caucasian Americans dealt with acculturative stress. However, this study found that personality traits were more predictive of coping styles than acculturation. Our sample was comprised primarily of students attending Midwestern universities. The population of university students typically skews female and Caucasian (Pew Research, 2014). Our research did not explore potential intergroup differences in the experience of satisfaction and dissatisfaction. Future research could study the role of culture in the experience of satisfaction and dissatisfaction in more depth. Although there may be some degree of difference across national cultures related to how individuals experience satisfaction dissatisfaction (De Mooij, 2010), the five-factor personality model is fairly robust across cultures (Schmitt, Allik, McCrae, & Benet-Martínez, 2007).

Although the BFI-44 is one of the best survey tools for measuring personality traits and is robust across various cultural groups and populations, the five-factor model also has some limitations. This study did not uncover significant results relating to complaining behavior. However, the

literature has found other traits not included in the five-factor model to be correlated with complaining behavior. For instance, self-monitoring has been found to reduce individuals' willingness to complain (Bodey & Grace, 2006). On the other hand, perceived control and internal locus of control increases complaining behavior (Bodey & Grace, 2006; Gursoy, McCleary, & Lepsito, 2007). Future research could explore the influence of some other individual differences on customer satisfaction and dissatisfaction and complaining behavior as included in the ACSI.

Our research supported previous research suggesting that individuals with the happy personality traits of Conscientiousness, and Agreeableness, Emotional Stability, and Extraversion would report higher levels of satisfaction. Openness to experience, Conscientiousness, and Agreeableness were the traits that we found to have a positive statistically significant effect on customer satisfaction. Extraversion and Emotional Stability also had positive effects; however, the effects were not statistically significant. Openness to experience is not one of the four happy personality traits yet it affected satisfaction positively in our research. This research also was consistent with previous research that found that those scoring high Agreeableness typically provide higher satisfaction ratings on student satisfaction surveys (Patrick, 2011). Future research could explore how individuals with low scores on Agreeableness, Emotional Stability, Openness and Extraversion experience satisfaction with a product or service and how they would rate their satisfaction level. The PAM model is a first step towards this understanding.

REFERENCES

Agarwal, R., Mehrotra, A., & Barger, V. A. (2016). Personality traits and repatronage intentions after service failure. *Journal of Consumer Satisfaction, Dissatisfaction, and Complaining Behavior*, *29*, 31-51.

Anderson, E. W., Fornell, C., & Rust, R.T. (1997). Customer satisfaction, productivity, and profitability: Differences between goods and services, *Marketing Science*, *16 (2),* 129-145. doi: 10.1287/mksc.16.2.129

Anderson, E. W. & Fornell, C. (2000). Foundations of the American Customer Satisfaction Index, *Total Quality Management, 11(7),* 869-882. doi: 10.1080/09544120050135425

Argyle, M., & Lu, L. (1990). The happiness of extraverts. *Personality and individual differences*, *11*(10), 1011-1017. doi: https://doi.org/10.1016/0191-8869(90)90128-E

Barkhi, R. & Wallace, L. (2007). The impact of personality type on purchasing decisions in virtual stores. *Information Technology and Management, 8(4),* 313-330. doi: 10.1007/s10799-007-0021-y

Bodey, K., & Grace, D. (2006). Segmenting service "complainers" and "non-complainers" on the basis of consumer characteristics. *Journal of Services Marketing*, 20(3), 178-187. https://doi.org/10.1108/08876040610665634

Brody, R. P., & Cunningham, S. M. (1968). Personality variables and the consumer decision process. *Journal of Marketing Research*, 50-57.

Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *The International Journal of Human Resource Management*, *17*(2), 245-264. http://dx.doi.org/10.1080/09585190500404614

Crawford, E. C., Fudge, J., Hubbard, G. T., & Filak, V. F. (2013). The mass comm type: Student personality traits, motivations, and the choice between news and strategic communication majors. *Journalism & Mass Communication Educator*, *68*(2), 104-118.

Dahl, A., & Peltier, J. (2015). A historical review and future research agenda for the field of customer satisfaction, dissatisfaction, & complaining behavior. *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behavior*, 28(4), pp. 4-23.

De Mooij, M. (2010). Consumer behavior and culture: Consequences for global marketing and advertising. Sage.

Ekinci, Y., & Dawes, P. L. (2009). Consumer perceptions of frontline service employee personality traits, interaction quality, and consumer satisfaction. *The Service Industries Journal*, *29*(4), 503-521. doi: http://dx.doi.org/10.1080/02642060802283113

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American customer satisfaction index: nature, purpose, and findings. *The Journal of Marketing*, 7-18. doi:10.2307/1251898

Fornell, C., & Wernerfelt, B. (1988). A Model for Customer Complaint Management. *Marketing Science*, *7*(3), 287–298. Retrieved from http://www.jstor.org/stable/183718

Furnham, A., & Cheng, H. (1997). Personality and happiness. *Psychological Reports*, *80*(3), 761-762. doi: https://doi.org/10.2466/pr0.1997.80.3.761Furnham, A., & Petrides, K. V. (2003). Trait emotional intelligence and happiness. *Social Behavior and Personality: an international journal*, *31*(8), 815-823.

Gordon, M. E., McKeage, K., & Fox, M. A. (1998). Relationship marketing effectiveness: the role of involvement. *Psychology and Marketing*, *15*(5) 44459. doi: http://dx.doi.org/10.1002/(SICI)1520-6793(199808)15:5%3C443::AID-MAR3%3E3.0.CO;2-7

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, *37*(6), 504-528. doi:10.1016/S0092-6566(03)00046-1

Gountas, J., & Gountas, S. (2007). Personality orientations, emotional states, customer satisfaction, and intention to repurchase. *Journal of Business Research*, *60*(1), 72-75. doi: http://dx.doi.org/10.1016/j.jbusres.2006.08.007

Grossberg, K. A. (2016). The new marketing solutions that will drive strategy implementation, *Strategy & Leadership*, Vol. 44 Issue: 3, pp.20-26, https://doi.org/10.1108/SL-04-2016-0018

Gursoy, D., McCleary, K. W., & Lepsito, L. R. (2007). Propensity to complain: Effects of personality and behavioral factors. *Journal of Hospitality & Tourism Research*, *31*(3), 358-386.

Haugtvedt, C. P., Petty, R. E., & Cacioppo, J. T. (1992). Need for cognition and advertising: Understanding the role of personality variables in consumer behavior. *Journal of Consumer Psychology*, *1*(3), 239-260. doi: http://dx.doi.org/10.1016/S1057-7408(08)80038-1

Hayes, N., & Joseph, S. (2003). Big 5 correlates of three measures of subjective well-being. Personality and Individual differences, 34(4), 723-727. https://doi.org/10.1016/S0191-8869(02)00057-0

Hennig-Thurau, T. (2004). Customer orientation of service employees: Its impact on customer satisfaction, commitment, and retention. *International Journal of Service Industry Management*, *15*(5), 460-478. doi: http://dx.doi.org/10.1108/09564230410564939

Hirsh, J. B., & Dolderman, D. (2007). Personality predictors of consumerism and environmentalism: A preliminary study. *Personality and Individual Differences*, 43(6), 1583-1593. doi: https://doi.org/10.1016/j.paid.2007.04.015

Hirsh, J. B., Kang, S. K., & Bodenhausen, G. V. (2012). Personalized persuasion tailoring persuasive appeals to recipients' personality traits. *Psychological Science*, *23*(6), 578-581. doi:10.1177/0956797611436349

Jackson, J., Crawford, E.C. & Pritchard, A. (2017). Personality traits and student satisfaction with major. Manuscript submitted for publication.

Jani, D., & Han, H. (2014). Personality, satisfaction, image, ambience, and loyalty: Testing their relationships in the hotel industry. *International Journal of Hospitality Management*, *37*, 11-20. doi:10.1016/j.ijhm.2013.10.007

Jensen-Campbell, L. A. & Graziano, W. G. (2001). Agreeableness as a Moderator of Interpersonal Conflict. *Journal of Personality,* *69*, 323–362. doi: 10.1111/1467-6494.00148

John, O. P., & Naumann, L.P., & Soto, C. J. (2008). Paradigm shift to the integrative Big-Five trait taxonomy: History, Measurement, and Conceptual Issues. In John, Robins, & Pervin (Eds.). *Handbook of personality: Theory and research*, New York: Guilford Press.

John, O. P., & Strivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin & John (Eds.). *Handbook of personality: Theory and research*, Vol. 2. New York: Guilford Press.

Klie, L. (2015). Slumping customer satisfaction taking a toll on the economy. *CRM Magazine*, Retrieved from http://www.destinationcrm.com/Articles/ReadArticle.aspx?ArticleID=107808&tc=eml.

Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology*, *61*(1), 132.

Larsen, R. J., & Ketelaar, T. (1989). Extraversion, neuroticism and susceptibility to positive and negative mood induction procedures. *Personality and individual Differences*, *10*(12), 1221-1228.

Lopez, M. H & Gonzalez-Barrera, A. (2014). Women's college enrollment gains leave men behind. *FactTank: News in the numbers. Pew Research*. Retrieved from: http://www.pewresearch.org/fact-tank/2014/03/06/womens-college-enrollment-gains-leave-men-behind/#

Luo, X. & Homburg, C. (2007). Neglected Outcomes of Customer Satisfaction. *Journal of Marketing*, *71(2),* 133-149. doi: http://dx.doi.org/10.1509/jmkg.71.2.133

Luo, X., Homburg, C. & Wieseke, J. (*2010*). Customer satisfaction, analyst stock recommendations, and firm value. *Journal of Marketing Research*, 47(6), 1041-1058. doi: http://dx.doi.org/10.1509/jmkr.47.6.1041

Marcus, B., & Schütz, A. (2005). Who are the people reluctant to participate in research? Personality correlates of four different types of nonresponse as inferred from self-and observer ratings. *Journal of Personality*, *73*(4), 959-984.

Matzler, K., Faullant, R., Renzl, B and Leiter, V. (2005). The relationship between personality traits (extraversionand neuroticism), emotions and customer self-satisfaction. *Innovative Marketing, 1(2),* 32-39.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality
across instruments and observers. *Journal of Personality and Social Psychology, 52(1)*, 81. doi:10.1037/0022-3514.52.1.81

Mittal, B. (1989). Measuring purchase‐decision involvement. *Psychology & Marketing*, *6*(2), 147-162.

Mooradian, T. A. & Olver, J. M. (1997), "I can't get no satisfaction:" The impact of personality and emotion on postpurchase processes. *Psychology & Marketing,* 14(4), 379–393. doi: 10.1002/(SICI)1520-6793(199707)14:4<379::AID-MAR5>3.0.CO;2-6

Patrick, C. L. (2011). Student evaluations of teaching: effects of the Big Five personality traits, grades and the

validity hypothesis. *Assessment & Evaluation in Higher Education*, *36*(2), 239-249.

Pringle, C. D., DuBose, P. B., & Yankey, M. D. (2010). Personality characteristics and choice of academic major: Are traditional stereotypes obsolete?. College Student Journal, 44(1), 131-143.

Reichheld, F.F. & Sasser, Jr., W.E. (1990). Zero defections. Quality comes to services. *Harvard Business Review, 68(5),* 105-111.

Reichheld, F F, & Teal, T. (1996). *The loyalty effect.* Boston, MA: Harvard Business
School Press.

Schmitt, D. P., Allik, J., McCrae, R. R., & Benet-Martínez, V. (2007). The geographic distribution of Big Five personality traits: Patterns and profiles of human self-description across 56 nations. *Journal of Cross-Cultural Psychology*, 38(2), 173-212.

Stein, L. (2015). RIP millennials: Marketing will be 'age agnostic' next year: Hotwire PR study finds companies will target on passion, not numbers. *AdvertisingAge,* Retrieved from http://adage.com/article/agency-news/2016-means-death-targeted-millennial-marketing/301380/?utm_campaign=SocialFlow&utm_source=Facebook&utm_medium=Social

Sun, K. A., & Kim, D. Y. (2013). Does customer satisfaction increase firm performance? An application of American Customer Satisfaction Index (ACSI). *International Journal of Hospitality Management*, *35*, 68-77. doi: 10.1016/j.ijhm.2013.05.008

Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *International Journal of Electronic Commerce,* 11(4), 125-148. doi: 10.2753/JEC1086-4415110405

Tan, H. H., Foo, M. D., & Kwek, M. H. (2004). The Effects of Customer Personality Traits on the Display of Positive Emotions. *The Academy of Management Journal*, *47*(2), 287–296. Retrieved from http://www.jstor.org/stable/20159579

Taylor, R. E. (1999). A six-segment message strategy wheel. *Journal of Advertising Research*, *39*(6), 7-18.

Vaughn, R. (1980). How advertising works: A planning model. *Journal of Advertising Research*, 20(5), 27-33.

Vaughn, R. (1986). How advertising works: A planning model revisited." *Journal of Advertising Research 26*(1), 57-66.

Wedel, M. & Kamakura, W.A. (1998). *Marketing segmentation: Conceptual and methodological foundations*, Boston: Kluwer Academic Publishers.

Widhiarso, W. (2011). Typology of ideal personality: Applicant perspective in job selection setting. *Proceedings of The 1st International Conference on Information Systems For Business Competitiveness (ICISBC).*

Wolburg, J., & Pokrywczynski, J. (2001). A psychographic analysis of Generation Y college students. *Journal of Advertising Research, 41(5),* 33-52. doi: 10.2501/JAR-41-5-33-52

Yi, Y. & La, S. (2004). What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty. *Psychology & Marketing, 21(5),* 351–373. doi: 10.1002/mar.20009

Yi, Y., & Jeon, H. (2003). Effects of loyalty programs on value perception, program loyalty, and brand loyalty. *Journal of the Academy of Marketing Science*, *31*(3), 229-240. doi: http://dx.doi.org/10.1177/00920703030 31003002

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APPENDIX

TABLE A1
ACSM: FORNELL-LARCKER CRITERION

	C	PE	L	PQ	PV	SAT	WOM
C	0.788						
PE	0.077	0.916					
L	0.165	0.340	0.942				
PQ	0.265	0.416	0.562	0.925			
PV	0.170	0.341	0.399	0.574	0.883		
SAT	0.262	0.382	0.615	0.781	0.595	0.869	
WOM	0.225	0.376	0.664	0.678	0.462	0.698	0.941

The square root of AVE is on the diagonal with correlation coefficients appearing off diagonal.

TABLE A2
ACSM: CROSS LOADINGS

	C	PE	L	PQ	PV	SAT	WOM
PE1	0.034	0.911	0.254	0.355	0.337	0.332	0.307
PE2	0.114	0.904	0.350	0.395	0.293	0.345	0.351
PE3	0.062	0.932	0.328	0.393	0.308	0.371	0.374
PL1	0.146	0.286	0.939	0.509	0.387	0.576	0.606
PL2	0.163	0.353	0.944	0.549	0.366	0.582	0.645
PQ1	0.178	0.423	0.511	0.921	0.530	0.732	0.633
PQ2	0.262	0.373	0.574	0.929	0.511	0.739	0.635
PQ3	0.297	0.356	0.473	0.924	0.551	0.696	0.614
PV1	0.189	0.338	0.378	0.590	0.926	0.602	0.466
PV2	0.097	0.254	0.323	0.396	0.838	0.425	0.333
SC	0.968	0.080	0.182	0.267	0.174	0.266	0.241
SCX	-0.552	-0.021	-0.017	-0.110	-0.064	-0.104	-0.046
SS1	0.218	0.396	0.593	0.753	0.609	0.907	0.686
SS2	0.215	0.235	0.396	0.561	0.425	0.798	0.453
SS3	0.252	0.344	0.586	0.703	0.499	0.900	0.649
WOM1	0.219	0.375	0.657	0.638	0.430	0.642	0.914
WOM2	0.197	0.360	0.613	0.643	0.436	0.674	0.958
WOM3	0.219	0.326	0.604	0.633	0.438	0.654	0.949

TABLE A3
PAM STAGE 1: FORNELL-LARCKER CRITERION

	Agree	C	Consc	Ext	NNeur	Openess	PE	L	PQ	PV	Reported Sat	SAT	WOM
Agree	1.000												
C	0.061	0.785											
Consc	0.374	0.034	1.000										
Ext	0.156	-0.015	0.176	1.000									
Emo	0.373	0.056	0.242	0.248	1.000								
Openess	0.130	-0.083	0.162	0.169	0.022	1.000							
PE	0.189	0.077	0.238	0.101	0.161	0.058	0.916						
L	0.215	0.166	0.172	0.095	0.159	0.110	0.340	0.942					
PQ	0.212	0.266	0.142	0.081	0.145	0.037	0.416	0.562	0.925				
PV	0.192	0.171	0.143	0.010	0.130	0.036	0.341	0.399	0.573	0.883			
Reported Sat	0.197	0.263	0.136	0.081	0.166	0.010	0.378	0.609	0.777	0.591	0.870		
SAT	0.446	0.243	0.357	0.239	0.383	0.111	0.420	0.617	0.751	0.578	0.939	0.564	
WOM	0.281	0.227	0.215	0.150	0.183	0.082	0.376	0.665	0.678	0.462	0.692	0.711	0.941

The square root of AVE is on the diagonal with correlation coefficients appearing off diagonal.

TABLE A4
PAM STAGE 1: CROSS LOADINGS

	Agree	C	Consc	Ext	NNeur	Openess	PE	L	PQ	PV	Reported Sat	SAT	WOM
Agreeableness	1.000	0.061	0.374	0.156	0.373	0.130	0.189	0.215	0.212	0.192	0.197	0.446	0.281
Conscientiousness	0.374	0.034	1.000	0.176	0.242	0.162	0.238	0.172	0.142	0.143	0.136	0.357	0.215
Extraversion	0.156	-0.015	0.176	1.000	0.248	0.169	0.101	0.095	0.081	0.010	0.081	0.239	0.150
Nneoroticism	0.373	0.056	0.242	0.248	1.000	0.022	0.161	0.159	0.145	0.130	0.166	0.383	0.183
Openness	0.130	-0.083	0.162	0.169	0.022	1.000	0.058	0.110	0.037	0.036	0.010	0.111	0.082
PE1	0.158	0.034	0.220	0.084	0.155	0.029	0.911	0.254	0.355	0.337	0.328	0.366	0.308
PE2	0.178	0.115	0.194	0.098	0.116	0.050	0.904	0.351	0.395	0.293	0.341	0.374	0.351
PE3	0.184	0.062	0.239	0.095	0.169	0.079	0.933	0.329	0.393	0.307	0.368	0.412	0.374
PL1	0.195	0.148	0.129	0.052	0.132	0.065	0.286	0.938	0.509	0.386	0.571	0.566	0.606
PL2	0.211	0.165	0.193	0.126	0.167	0.140	0.353	0.945	0.549	0.366	0.577	0.596	0.645
PQ1	0.161	0.179	0.139	0.097	0.136	0.044	0.423	0.511	0.921	0.530	0.728	0.700	0.633
PQ2	0.225	0.262	0.118	0.072	0.132	0.027	0.373	0.574	0.929	0.510	0.736	0.711	0.635
PQ3	0.202	0.298	0.138	0.054	0.133	0.030	0.356	0.473	0.925	0.550	0.693	0.671	0.614
PV1	0.168	0.190	0.128	0.004	0.129	0.009	0.338	0.378	0.590	0.924	0.598	0.578	0.466
PV2	0.175	0.097	0.126	0.017	0.096	0.065	0.254	0.323	0.396	0.841	0.422	0.425	0.333
SC	0.044	0.972	0.051	-0.019	0.073	-0.069	0.080	0.182	0.268	0.174	0.266	0.247	0.241
SCX	-0.089	-0.536	0.047	-0.009	0.037	0.086	-0.021	-0.017	-0.110	-0.064	-0.107	-0.092	-0.046
SS1	0.230	0.219	0.147	0.093	0.184	0.031	0.396	0.593	0.753	0.608	0.897	0.865	0.686
SS1	0.230	0.219	0.147	0.093	0.184	0.031	0.396	0.593	0.753	0.608	0.897	0.865	0.686
SS2	0.097	0.215	0.077	0.016	0.097	-0.012	0.235	0.396	0.561	0.424	0.817	0.733	0.453
SS2	0.097	0.215	0.077	0.016	0.097	-0.012	0.235	0.396	0.561	0.424	0.817	0.733	0.453
SS3	0.177	0.253	0.125	0.094	0.146	0.003	0.344	0.586	0.703	0.498	0.894	0.845	0.649
SS3	0.177	0.253	0.125	0.094	0.146	0.003	0.344	0.586	0.703	0.498	0.894	0.845	0.649
WOM1	0.269	0.221	0.231	0.151	0.155	0.099	0.375	0.657	0.638	0.430	0.635	0.660	0.915
WOM2	0.263	0.199	0.192	0.125	0.191	0.077	0.360	0.613	0.643	0.436	0.669	0.683	0.958
WOM3	0.261	0.220	0.182	0.146	0.170	0.055	0.326	0.604	0.633	0.438	0.649	0.663	0.949

TABLE A5
PAM STAGE 1: OUTER LOADINGS

	ORIGINAL	SAMPLE MEAN	STANDARD DEVIATION	T STATISTICS	P VALUE
AGREEABLENESS <- AGREE	1.000	1.000	0.000		
AGREEABLENESS <- SAT	0.446	0.444	0.050	8.895	0.000
CONSCIENTIOUSNESS <- CONSC	1.000	1.000	0.000		
CONSCIENTIOUSNESS <- SAT	0.357	0.357	0.057	6.309	0.000
EXTRAVERSION <- EXT	1.000	1.000	0.000		
EXTRAVERSION <- SAT	0.239	0.236	0.059	4.066	0.000
EMOTIONAL STABILITY <- EMO	1.000	1.000	0.000		
EMOTIONAL STABILITY <- SAT	0.383	0.380	0.058	6.582	0.000
OPENNESS <- OPENESS	1.000	1.000	0.000		
OPENNESS <- SAT	0.111	0.108	0.063	1.771	0.077
PE1 <- PE	0.911	0.912	0.008	109.933	0.000
PE2 <- PE	0.904	0.903	0.010	89.876	0.000
PE3 <- PE	0.933	0.932	0.006	144.058	0.000
PL1 <- L	0.938	0.938	0.009	108.058	0.000
PL2 <- L	0.945	0.945	0.006	169.913	0.000
PQ1 <- PQ	0.921	0.921	0.008	114.770	0.000
PQ2 <- PQ	0.929	0.928	0.009	108.323	0.000
PQ3 <- PQ	0.925	0.924	0.008	110.461	0.000
PV1 <- PV	0.924	0.924	0.007	123.819	0.000
PV2 <- PV	0.841	0.840	0.025	34.133	0.000
SC <- C	0.972	0.941	0.213	4.572	0.000
SCX <- C	-0.536	-0.562	0.224	2.397	0.017
SS1 <- SAT	0.865	0.865	0.012	72.671	0.000
SS1 <- REPORTED SAT	0.897	0.897	0.007	124.181	0.000
SS2 <- SAT	0.733	0.732	0.030	24.727	0.000
SS2 <- REPORTED SAT	0.817	0.816	0.020	41.251	0.000
SS3 <- SAT	0.845	0.844	0.016	54.180	0.000
SS3 <- REPORTED SAT	0.894	0.894	0.008	113.497	0.000
WOM1 <- WOM	0.915	0.914	0.011	83.912	0.000
WOM2 <- WOM	0.958	0.958	0.005	199.796	0.000
WOM3 <- WOM	0.949	0.949	0.006	160.865	0.000

Sample Mean, Standard Deviation, t-statistics, and p-values from bootstrapping (1000 draws).

TABLE A6
PAM STAGE 2: FORNELL-LARCKER CRITERION

	C	PE	L	PQ	PV	TRUE SAT	WOM
C	0.788						
PE	0.076	0.916					
L	0.165	0.340	0.942				
PQ	0.265	0.416	0.562	0.925			
PV	0.170	0.341	0.399	0.573	0.883		
TRUE SAT	0.255	0.403	0.623	0.777	0.596		
WOM	0.225	0.376	0.665	0.678	0.462	0.712	0.941

The square root of AVE is on the diagonal with correlation coefficients appearing off diagonal.

TABLE A7
PAM STAGE 2: CROSS LOADINGS

	C	PE	L	PQ	PV	TRUE SAT	WOM
AGREE	0.062	0.189	0.215	0.212	0.192	0.335	0.281
CONSC	0.032	0.238	0.172	0.142	0.143	0.253	0.215
EXT	-0.015	0.101	0.095	0.081	0.010	0.139	0.150
EMO	0.054	0.160	0.159	0.145	0.130	0.232	0.183
OPENESS	-0.084	0.058	0.110	0.037	0.036	0.088	0.082
PE1	0.034	0.911	0.254	0.355	0.337	0.349	0.308
PE2	0.114	0.904	0.350	0.395	0.293	0.363	0.351
PE3	0.062	0.932	0.329	0.393	0.307	0.394	0.374
PL1	0.146	0.286	0.939	0.509	0.386	0.578	0.606
PL2	0.163	0.353	0.945	0.549	0.366	0.596	0.645
PQ1	0.178	0.423	0.511	0.921	0.530	0.725	0.633
PQ2	0.262	0.373	0.574	0.929	0.510	0.736	0.635
PQ3	0.297	0.356	0.473	0.925	0.551	0.694	0.614
PV1	0.189	0.338	0.378	0.590	0.924	0.598	0.466
PV2	0.097	0.254	0.323	0.396	0.840	0.433	0.333
REPORTED SAT	0.263	0.378	0.609	0.777	0.591	0.985	0.692
SC	0.967	0.080	0.182	0.268	0.174	0.258	0.241
SCX	-0.553	-0.021	-0.017	-0.110	-0.064	-0.104	-0.046
WOM1	0.218	0.375	0.657	0.638	0.430	0.658	0.914
WOM2	0.197	0.360	0.613	0.643	0.436	0.686	0.958
WOM3	0.219	0.326	0.604	0.633	0.438	0.665	0.949

Figure A1

Extraversion

Figure A2

Agreeableness

Figure A3

Conscienceness

Figure A4

Emotional Stability

Figure A5

Openness

Figure A6

Extraversion

Figure A7

Agreeableness

Figure A8

Conscientiousness

Figure A9

Emotional Stability

Figure A10

Openness