# Social Media and Consumer Behavior: A Marketing Study On Using Structural Equation Modeling for Measuring the Social Media Influence On Consumer Behavior

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ABSTRACT

*Social media has been a strong influence on consumer behavior. Facebook emerged as one of the most influential forms of social media. Thus, social media has a strong influence on college students as a consumer group and market segment. The purpose of this study was to investigate and measure the influence of Rate My Professors.com on consumers' (college students) and their choices. This two-year study examined the influence of social media on consumer behavior. A sample (N = 383) of consumers were examined for this study. First, an exploratory factor analysis (EFA) was used to examine the factor structure and psychometric properties of the instrument and survey items. Second, a confirmatory factor analysis (CFA) was used to validate the survey items used to measure the three constructs. A Structural Equation Modeling (SEM) approach using AMOS utilized for model testing and to verify the three constructs. The results of the study indicate that social media influences four consumer behaviors and decisions.*

**Keywords:** Social media, consumer behavior, Facebook, Rate My Professors, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM).

## Introduction

Social media has emerged as a critical component in examining both marketing and consumer behavior. In relation to social media and its influence on consumer behavior, such sites from FaceBook to Twitter to LinkedIn has shown that social networking is a constant in the mind of consumers. There are 500 billion impressions about services and products shared annually among clients in social networks; 78% of consumers trust peer advise (Chatterjee, 2010). Social media acts as a driver to consumer behavior and spending. Social media has also advanced the function of marketing and influenced consumers to spend money on products through social networks (e.g., FaceBook). The time a consumer spent with social media continues to increase. Nearly 17 % of total Internet time is spent on blogs and social network sites (Diffley et al, 2011). Previously, some of the research on social media research has focused predominately on usage, gratification, and taxonomical studies (Heo & Cho, 2009).

The goal of this article is to examine consumer behavior and measure it through the development of the Rate My Professors Measurement Scale (RMS). RMS measures the influence of social media on consumer behavior and consumption. Our objective is to investigate and examine specific consumer behavioral patterns influenced by social media. We found a gap in the body of knowledge. This is one of first studies to test the validity of a first generation, researcher-developed scale measuring consumer behavior. To accomplish this goal, we develop several items based on social media analytics.

To execute our research strategy, we conducted two studies that investigate the role of social media's influence on consumer behavior. For Study 1, our objective is to identify the social media factors in the data collected using the RMS instrument. For Study 2, we replicate the research design of the pilot study (Study 1) and made some modifications; and further relate the RMS instrument to performance and the dependent variables related to consumer behavior. We also develop composite factors scores of the RMS instrument.

First, for Study 1, we establish three types of validity: (a) *convergent*, (b) *discriminant*, and (c) *criterion-related*. Second, Study 2 then collects more data and using a confirmatory factor analysis (CFA) to test for the two types of validity for examining consumer behavior: convergent and discriminant. For example, for Study 2, we examine the validity of the RMS instrument through the use of Structural Equation Modeling (SEM). Lastly, we further validate the measures of the RMPS instrument, and to pinpoint specific differences in independent variables.

The purpose of this study was threefold. We attempted to: (a) modify and revise the RMS instrument through an extensive review of the literature, (b) conduct an EFA and CFA of the RMS instrument, and (c) to assess the predictive validity of the scale by examining the relationships of the consumer choices factors through structural equation modeling (SEM) analysis. In addition, we attempted to understand these relationships of consumer demand factors based on social media influence.

## Literature Review

### Background of Social Media

A majority of the social media literature in recent years has dealt with its struggle for self-definition. More than anything, the new media revolution provides a way for social marketing to solidify its importance as a discipline (Hill & Moran, 2011). With the increasing importance of social media and viral marketing on the Web, now marketers can leverage the power of interpersonal networks to promote a product or service. Viral marketing is effective as a means of drawing high response rates. Furthermore, viral marketing communication aims to create an environment where customers and consumers transmit messages without the involvement of the original source (Dăniasă, et al, 2010).

Using social media to conduct market research has become a new phenomenon. A researcher can also use social media sites such as Facebook for measuring focus groups (Casteleyn, Mottart & Rutten, 2008). What developed from the evolution of social media are social networks. Social

networks have been hailed as the next media for marketing, its proponents pointing to the presence of politicians and actors on Twitter and Facebook (Yan, 2011).

**Social Media and Consumer Behavior**

The early days of online consumption has evolved into allowing consumers to use the Internet as a functional tool. Now, there is increased ease in which consumers are able to access word-of-mouth recommendations and commentary compared to 10 years ago. This trend is also attributed to how quickly consumers become digital producers and consumers and are able to warn others not to purchase items. What is surprising is the trust fellow consumers assume in total strangers compared with the need for trust with offline word of mouth recommendations (Veer, 2011).

Social media is critical in transforming the consumer engagement; social medial is redefining commercial marketing strategies using video on the Web, mobile devices, and traditional television (TV). Personal engagement shows a significant positive influence both on active and passive usage, meaning that if the engagement with the content is high, the user prefers to share the experience with peers. Furthermore, the same effect was found for social-interactive engagement, which positively affects both active and passive usage and has great opportunities for social commerce (Pagani & Mirabello, 2011).

When examining consumer responses to identical brand publicity in seven popular blogs and popular online magazines, blogs tend to generate higher brand attitudes and purchase intentions. Furthermore, *para-social interaction*—publicity is more sensitive to user perceptions of the writers' credibility and relationship with the brand (Colliander & Dalhén, 2011).

**Consumer Behavior and Product Reviews**

In terms of social media and consumer satisfaction, consumers are now active in posting comments or product reviews on major social media websites (e.g., Amazon.com, Barnes and Noble.com, ebay, and others). This is a form of *crowdsourcing*. First, individuals are more likely to submit online ratings when they are either very satisfied or not satisfied. Second, positive environments increase posting incidence, whereas negative environments discourage posting. Lastly, less-frequent posters are more positive and exhibit bandwagon behavior, whereas more-active posters are more negative and exhibit differentiation behavior (Moe & Schweidel, 2013).

In terms of consumer behavior and online activity, Dellarocas, Gao, and Narayan (2010) concluded that consumers prefer to post reviews for products that are less available and less successful in the market. Conversely, consumers are also more likely to contribute reviews for products that many other people have already commented on online (Dellarocas et al., 2010). Consumer behavior has often influenced recommendations and referral on products and services. The drivers of new product recommendations and referral behavior on social network sites are often critical to consumer behavior. Consumer-generated brand messages are significantly more likely to be recommended but are not significantly more likely to generate referrals (Chatterjee, 2010).

Social media channels such as Twitter, MySpace, Facebook, texting, email, and blogs—have impacted how information is shared among groups of consumers significantly. Millennials are influenced significantly by both positive and negative product messages obtained from a variety of social media sources with minimal consideration to their relationship closeness to the comment initiator (Sago, 2010). Digital and social media have empowered consumers as well as brands have an important role in facilitating conversations among consumers and themselves (Powers et al., 2012).

Consumer interactions with social media appear to be limited to brand association and communication, and not to transactional encounters in the traditional sense of offline or online shopping. This tends to limit the breadth of encounter opportunities from which social media can create satisfying experiences. Lastly, social media is limited in its ability to generate trust through transactional encounters and must rely on its communicative nature through which to build this (Hawkins & Vel, 2013).

**Social Media and Opinion Leaders Influence On Consumer Behavior**

Opinion leaders have now increased their influence in the advent of social media. There is a significant role of online "opinion leaders" in the marketplace. The findings from the research on opinion leaders indicate that the participants generally were not inspired to refer the Web site to their social networks based on intrinsic motivations. Furthermore online referral rates were higher when extrinsic rewards were conferred. Lastly, a key finding is that the effect of an extrinsic reward was significantly stronger among opinion leaders (Shi & Wojnicki, 2014).

**Social Networking Sites and Consumer Behavior**

Social-networking sites (SNS) such as Facebook, Twitter, and others have grown in popularity among users, which in turn has an impact on consumer behavior. This study's findings suggested that in terms of social network advertising (SNA), it tends to deliver content that is consistent with the motivations originally expressed in media uses and gratification theory. Furthermore, consumers were more likely to ascribe positive attitudes toward advertising conveyed to them through an SNS medium (Taylor, Lewin, & Strutton, 2011).

In terms of consumer behavior in SNS, the influence of friends is highly prevalent. Respondents tend to react and listen to their friends' comments, which in turn affect their attitudes. In addition, this influence extends to products and services. These social connections have the capacity to influence others' opinions and attitudes towards companies, products and brands (Diffley et al, 2011). Both men and women tend to think information on brands shared by their fellow consumers is more truthful, useful, relevant and easier to find than information about brands proffered up on official social media pages (Stuth & Mancuso, 2010).

Consumers are also concerned about social responsibility (CSR). A large number of factors influence the assessment of CSR as a purchase criterion for consumers. Consumers found the importance of CSR minor compared to other purchase criteria such as price, quality, brand, country of origin, or service (Öberseder, Schlegelmilch, & Gruber, 2011).

There are differences that exist in both access methods and social networking tool usage such as mobile devices and notebooks. The high-usage group tends to show more positive perception of the social networking sites compared to low-usage groups. This suggests the importance of clearly understanding the mobile device and notebook users in the ways they access and use social networking sites and consumer behavior (Heinrichs, Lim, & Lim, 2011).

**Influence on Consumer Behavior**

Social media activities of consumers can be divided into three categories: (a) information processing, (b) entertainment activities, and (c) social connection. Frequently, consumers tend to look for specific information, such as facts or explanations for something. This indicates by sharing experiences and knowledge, consumers tend to create new forms of services, which have an important task in guiding and directing decision making (Heinonen, 2011). This reinforces the notion of digital natives' use of social media for personal sharing and event notifications (Williams et al, 2011).

The relationship between advertisers and consumers is undergoing a fundamental change. Consumers are now pushing back, driving advertising budgets and media buys through their social media behavior (Wiederhold, 2011). Social media has become integral part of consumers' daily routine. Furthermore, consumers believe companies should include social media—a more personal communication channel than traditional media—to advertise, stay up-to-date, and share relevant company information (Campbell, Anitsal, & Anitsal, 2013). Brand relationship strength represents the accumulated relationship between the brand and its customers, and it exerts a more stable influence on behavior intentions. Lastly, consumers who have a stronger relationship with the brand are overall more satisfied and more likely to purchase and recommend (Xia, 2013).

**Prior Research on Rate My Professors.com**

Some of the prior research on RMP has been interesting and centered on comparing student evaluations with the RMP website. Some of the prior research indicates that students who post ratings on these web sites express similar concerns and values about their professors than students in studies of traditional evaluations (Silva et al., 2008). Based on the influence of RMP as a social media, students are interested in "going public"; a posting on RMP communicates willingness to dialogue about expectations of teaching and learning (Ritter, 2008). First, the prior research on RMP ratings demonstrated that students' ratings of instructor clarity and helpfulness were strongly correlated. Second, it was found that the variability in *easiness* was inversely associated with *clarity* and *helpfulness* (Otto et al., 2008). Among college students, RMP acts as a consumer rating site for professors. Most students at colleges and universities are aware of the RMP website. Many college students visit RMP and tend to think it is a credible resource. Furthermore, many students use it to choose instructors (Davidson & Price, 2009).

Based on a review of the literature and prior research, the researchers found a considerable gap in the research that examined the RMP as a social media influence on consumer behavior of college students. A majority of the prior research focused on the assessment and evaluation of RMP or compared RMP with internal university student evaluations. The gap in the prior research had not investigated or measured how RMP actually influences students' consumer

behavior. The aim of the researchers is to determine how much of an influence RMP is on students and their choices in courses selection, professor selection and future choices. For example, a considerable amount of the literature collected data from RMP as secondary data and conducted statistical analysis on it. Lastly, we wanted to take a different approach. Our approach was to collect primary data from the students and measure their opinions about RMP and its influence on their choices.

A central premise in the prior studies on RMP tends to singularly focus on examining the assessment and evaluation of the website. The prior research has also focused comparing RMP data with university student evaluations to measure validity. One of most apparent observations in the literature is there is a lack of a strong body of knowledge and research on RMP. What is largely missing from the literature on RMP is examining RMP as a social media influence on consumer behavior. The basis for this study is to further investigate and examine RMP as social media influence and build on the prior research on the social media website.

The main purpose of this study was to develop the Rate My Professors Measurement Scale (RMS) and to measure the social media influence on consumer behavior (Miles, 2013). The RMS instrument is a comprehensive but relatively brief questionnaire that assesses the influence of Rate My Professors.com on the consumer behavior of college students. The present study intends to confirm the following: (1) the factorial validity of the RMS; (2) the reliability, structural equation modeling and stability of the RMS instrument; (3) the construct validity by analyzing the intercorrelations of the RMS instrument; (4) the convergent and divergent associations between the RMS instrument; and (5) the associations in the demographics in the data such with variables such as sex, age and social desirability. The specified assumptions are formulated in the end of the method section.

## Theoretcial Framework and Models

The following theoretical model is presented with the proposed factors and items for the study. The model proposes that RMP influences three consumer choices and thus appropriated separated by the three factors (see Figure 1). The research questions that drive the investigation of the study are as follows: (a) Does RMP have a major influence on college students' *choices for courses*; (b) Does RMP have an impact on students' *professor choices* for course selection; and (c) Does RMP have an impact on *future students' courses*? Lastly, the conceptual model of the study is presented. The model proposes that social media influences consumers and thus that affects consumer behavior and decisions (see Figure 2).

**Figure-1:** Theoretical Model of the Social Media Influences Three Consumer Choices

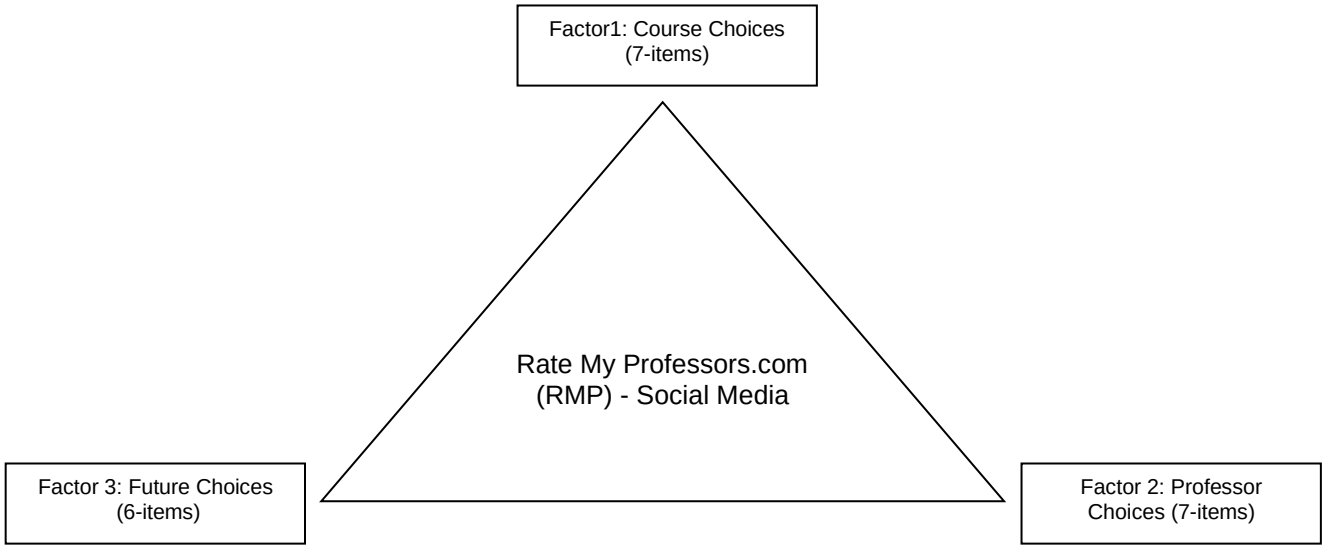
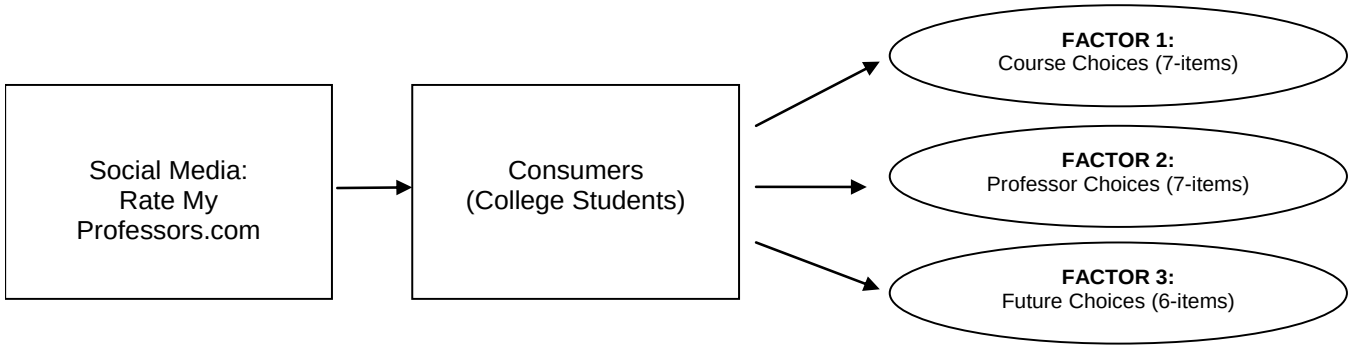



**Figure-2:** Conceptual Model for Social Media Influence on Consumer Choices




# Methodology

## Research Methodology

**Research Design.** This research involves a study undertaken to examine social media influence on consumer behavior. Two studies were involved with this research: a pilot study ($N$ = 110) and a second study ($N$ = 383). The surveys were administered via internet through SurveyMonkey.com. The survey was developed with the help of prior research, literature review, researchers, and consumer research on online consumers. The development of the instrument consists of a 7-point Likert-type scale (1 = *Strongly Disagree* to 7 = *Strongly Agree*) and 29 questionnaire-items. The participants were asked to rate the 20 items relating to Rate My Professors.com. The instrument also collected demographic information such as gender, age,

marital status, education level and ranking. The variables and items were validated through a multivariate analysis. A proposed theoretical model was developed for the purpose of applying a Structural Equation Modeling (SEM). The data was cleaned and analyzed with the statistical software packages, SPSS (Statistical Package for the Social Sciences) and AMOS (Analysis of Moment Structure) used to confirm the theoretical model and goodness –of –fit. SPSS and AMOS were used for analyzing the data.

**Sampling**

The sampling methodology used a "snowball" sampling method to recruit participants via e-mail and personal contact. The sampling methodology also employed through the social networks of the investigators. For Study 1, the sample consisted of 110 participants; Study 2 the sample consisted of 383 participants. The sampling frame was collected from six colleges and universities in the San Antonio Metropolitan Area (Bexar County). A total of 589 individuals consented to participate in the survey. This yielded a response rate of 66.0%. To reduce sample bias, the researchers attempted on collecting data from the various colleges and universities.

**Participants**

The target population for this study were college and university students that were 18 years of age or older. The descriptive statistics for the demographic variables are presented in Table 1.
The participants were recruited from public and private universities in the metropolitan San Antonio and Bexar County area. A total of 589 participants began the study, and 389 (147 males and 236 females) completed it, for a completion rate of 66.0%. Most participants were identified as Hispanic (65.0%). The ages ranged from 18 to 59 years. The highest age range was 25 – 35, which comprised of 40.2% of the sample. Most of the participants were undergraduates (76.0%) and 59.0% were traditional students (see Appendices).

**Data Collection**

Data were collected from a convenience sample of 389 individuals, who were located in the Bexar County area and participated in the study. The data from Study 1, which had 110 participants, were used to select items based on exploratory factor analysis (EFA). For Study 2, which had 389 participants, were used to select items based on confirmatory factor analysis (CFA). This was used to examine the factor structure, construct validity, and convergent validity. Lastly, for the two samples, the data was examined and searched for cleansing. The researchers checked for missing data, outliers, input errors, and other errors. The data cleansing procedures were carefully performed to make the data usable and error-free.

**Procedures.** The survey was administered via Internet, Survey Monkey.com, a secured survey website. The use of online survey research tends to provide a greater anonymity as opposed to a traditional paper-and-pencil method. This provided the researchers with a greater advantage in collecting quality data. Upon accessing Survey Monkey.com, first the participants were provided an electronic informed consent form. Second, the participants that agreed to their consent were directed to complete the survey. The participants were informed the survey takes an estimated 8 – 10 minutes to complete. The researchers carefully designed the online survey so that questions

could not be skipped or a required answered was mandatory before proceeding to the next question. There were some survey limitations to this study. For example, the generalizability of the findings could be questionable because the research was conducted entirely online. Nevertheless, the results of this study should be taken with caution.

## Statistical Analyses Design

**Statistical Analyses Tools.** The statistical analyses for the data in the research were performed using SPSS ® Version 21.0 and AMOS ® Version 17.0 software. First, a data screening was conducted to inspect the variables for the multivariate analyses. SPSS was used for computing the descriptive statistics, inferential statistics and multivariate statistics. AMOS was used for computing the structural equation modeling (SEM).

**Multivariate Statistics Methodology.** The factor analysis methodology (FA) was used to provide a means of assessing validity and reliability (Brown, 2006; Kachigan, 1991; Kish, 1987). FA is a multivariate statistical analysis approach that takes a large number of variables and reduces them into smaller, measurable constructs. FA is used to reduce variables to a manageable number; to identify a small number of factors representing relationships among sets of interrelated variables (e.g. descriptors); and to study relationship patterns among dependent variables (Gorsuch, 1983; Harman, 1976; Mulaik, 1972; Rummel, 1970). One critical advantage that factor analysis utilizes a family of statistical procedures "for removing the redundancy from a set of correlated variables and representing the variables with a smaller set of derived variables (Kachigan, 1991)." Factor analysis is also used extensively for development and validations of an instrument. Since, the primary purpose of this study was to develop and validate an instrument, and explore student behavior; the researchers determined that an exploratory factor analysis (EFA) was an appropriate statistical mode of analysis. Lastly, a confirmatory factor analysis (CFA) was used to confirm the instrument.

## Research Study Design and Process

### 3.1 Development of Instrument: Rate My Professors Measurement Scale (RMS).

To make an instrument suitable for application in the study, an instrument had to be developed. First, an extensive review of the literature was conducted on social media, consumer behavior and crowd sourcing. Then a subsequent search prior research on Rate My Professors.com (RMP) was conducted. Second, the two researchers conducted further research on RMP for a two-year period which included a pilot study and a formal study. Lastly, the Rate My Professors Measurement Scale (RMS) was developed for the research. This is scale is a researcher-developed, first generation scale, questionnaire. The RMS instrument, include 29 items that consists of statements describing responses to the influence of social media (RMP) on consumers (college students) and consumer behavior (choices). To validate the survey instrument, a pilot study was conducted with 110 participants. The items are rated on a 7-point scale. A total score can be calculated, summing all 20 items scores. To develop the RMS instrument, the researchers conducted an extensive literature review, pilot study, and examined prior research. A majority of the development of the RMS was performed from the literature search and subject matter. Also, an extensive content analysis of research on Rate My Professors.com was used in the instrument

development. This was instrumental in assisting the researchers in developing items in the instrument. The RMS instrument was developed specifically for this study.

### 3.2 Stage 1: Pilot Study - Exploratory Factor Analysis

The sample for the Study 1(pilot study) was collected online using Survey Monkey.com. Data were collected from 110 participants. The pilot study was conducted with one major university in the Bexar County area. Of the participants, the sample characteristics were: 57.3% were female and 42.7% were males; 100% were undergraduates; 94.5% were Hispanic; 65.4% were students in hybrid courses (half Internet and half traditional class). An exploratory factor analysis (EFA) was conducted. To conduct the EFA, a correlation matrix, a matrix determinant and a Kaiser-Meyer-Olkin (KMO) sampling was conducted and analyzed regarding factor structure. For the factor analysis methodology, a Principal Components Analysis (PCA) was conducted. Lastly, once the factor correlation matrix was developed, the eigenvalues, percentage of variance for each factor, a scree plot graphic and parallel analysis were examined in order to determine the quantity of factors to be extracted.

### 3.3 Stage 2: Confirmatory Factor Analysis and Construct Validity

The sample for Study 2 was also collected online using Survey Monkey.com. Data was collected from 383 people. The formal study was conducted with: (a) 6 public and private universities, (b) 5 community colleges and (c) 3 other colleges and universities in the Bexar County area. Of the participants, the sample characteristics were as follows: 61.6% were female and 38.4% were male; 76.0% were undergraduates; 65.4% were Hispanic; 61.6% were students in traditional courses. The final sample counted with 383 subjects. The research design for Study 2 was conducted with a confirmatory factor analysis (CFA). After defining the quantity of factors, a Principal Axis Factoring (PAF) analysis was run using equamax rotation, since correlation among factors was expected. Lastly, structural equation modeling was conducted, using AMOS. AMOS was used to determine which structure adjusts better to RMS instrument, its fit was measured through the following indices: Chi-Squire-($\chi$2 test), RMSEA (Root Mean Square Error of Approximation), RMR (Root Mean Square Residual), GFI (Goodness-of-Fit Index), AGFI (Adjusted Goodness-of-Fit Index), CFI (Comparative Fit Index), IFI (Incremental Fit Index), NFI (Normed Fit Index), and TLI (Tucker-Lewis Index).

**Table 1**: The Rate My Professors Measurement Scale (RMS)

| ***Factor 1: Course Choices*** |
|---|
| 1) V10- I am familiar with the website "Rate My Professor.com" (RMP). |
| 2) V11-Sometimes I review RMP to inquiry about feedback on courses and its content. |
| 3) V12-I have reviewed RMP to inquiry about feedback on courses and its content. |
| 4) V13-RMP plays a major influence in my decisions about taking courses at my university. |
| 5) V14-I prefer to choose courses by using word of mouth (informal advice from other students). |
| 6) V15-I have reviewed RMP comments about a professor before taking their course. |
| 7) V16-I have made the decision not to take a course from a professor based on negative comments on RMP. |
| ***Factor 2: Professor Choices*** |
| 1) V17-I have taken a professor for a course despite the negative comments posted on RMP. |
| 2) V18-I have disagreed with comments posted on RMP about a professor that I've had a positive experience with and posted rebuttals. |
| 3) V19-After taking a course, I have reviewed the comments on RMP about the professor that taught the class. |
| 4) V20-I consider comments posted about a professor on RMP to be a reliable source of information. |
| 5) V21-I will use RMP as a resource for future professor selections and decisions. |
| 6) V22-1-I consider RMP be a major influence on my future course decisions. |
| 7) V23-I would consider comments posted on RMP to be more reliable than word of mouth feedback for choosing professors. |
| ***Factor 3: Future Choices*** |
| 1) V24-I see RMP as a valuable resource for students in college. |
| 2) V25-I would recommend using RMP to other students as a resource. |
| 3) V26-I consider comments about a professor on RMP to be an accurate assessment of their teaching abilities. |
| 4) V27-The university's search committee should consider RMP comments as part of their background investigation for hiring future professors. |
| 5) V28-The university's management should review RMP comments for current faculty and use it as a consideration for promotion decisions. |

## Results of Study 1

### Study 1: Exploratory Factor Analysis and Initial Factor Structure

**Statistical Analyses.** The purposes of Study 1 were to: (a) establish the factor structure of the RMS via exploratory factor analysis (EFA); (b) test the measurement model derived from EFA via confirmatory factor analysis (CFA); and (c) to assess the internal consistency of the RMS factors. Again, Study 1 is a pilot study the researchers conducted on Rate My Professors.com (RMP). For conducting the statistical analyses of the data, the researchers conducted a descriptive statistics, inferential statistics and multivariate statistics. The statistical analyses performed in this study used SPSS ® (Statistical Package for Social Sciences) Version 21.0 software was used for computing the data from Study 1 (pilot test). SPSS was used for computing the statistical analyses. This analyses was used to establish central tendencies (mean, median, and mode), and developing the exploratory factor analysis, and data cleaning. Multivariate statistical analysis was used for computing factor analysis (principle component analysis), logistic regression, Pearson's Correlation, and *t*-Tests and factor scores.

**Descriptive Statistics.** Demographic data was analyzed using descriptive statistics, which measures central tendency, dispersion, and student *t*-tests. The rationale for this was to examine characteristics between group differences. The objective for the descriptive statistics is to transform large groups of data into a more manageable form (Huck, Cormier, & Bounds, 1974). The students were asked to complete the Rate My Professors Measurement Scale (RMS), a 29-item instrument. A total of 110 undergraduate college students (47 males and 63 females) were recruited from two universities (private and public) for this pilot study. The table illustrates the descriptive statistics of the sample illustrates: gender, age, ethnicity, student ranking, and class preferences. The *class type* consisted of three types of classes: traditional (24.5%), online (1.4%) and hybrid (65.4%). The *student ranking* consisted of three types of student classifications: freshman (41.0%), sophomore (11.0%) and junior (48.2%). The majority of the students were of Hispanic origin (94.5%), thus reflecting the demographics of the population from which the sample was drawn. Demographic data was analyzed using descriptive statistics (measures of central tendency and dispersion) and student t-tests, to examine characteristics between group differences (see Appendices).

**Initial Exploratory Factor Analysis.** For conducting the initial exploratory factor analysis (EFA), the researchers used SPSS 21.0. The researchers conducted a principal component analysis (PCA) with a varimax rotation was used for extraction. The rationale for using the PCA was for when the research purpose is *data reduction* or *exploration* and when the research is a *variance-focused approach* (Garson, 1998; Brown, 2006; Hair et al., 1998). For establishing the criteria for the EFA, we set a benchmark coefficient minimum of .3 or higher for the factors. The standard for a factor analysis coefficient loadings vary depending on the type of factor analysis. This indicates some of the scale factor loadings measured for this PCA (29 items) met and surpassed the minimum standard for the benchmark coefficient score of .3 and greater. Thus, the factor loadings were considered a reasonable measure in the factor (Rummel, 1970; Mulaik, 1972). The observed scree test in the EFA suggested an optimal solution of three or four factors. For the researchers to properly assess the validity of the factor solutions, coefficient patterns for each factor, and the theoretical three-factor solution was tested using the statistical properties. In

conducting the initial EFA and adequate items per factor, we had a PCA result of six factors. Before establishing the factor names, we conducted a subsequent factor analysis (see Final Exploratory Factor Analysis).

**Final Exploratory Factor Analysis.** For establishing the criteria for the final EFA, again we set a benchmark of a minimum coefficient of .3 or higher for the factors. Factor items that had less than .3 factor loading we eliminated them. No items were omitted as the PCA was conducted. The researchers performed another PCA on the data at interval and ratio level RMS instrument (20 items) to reveal factor structure. To detect the underlying structure of the data, as explained by relationships between variables, the EFA was also used to measure *convergent validity*.

In the PCA, the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy resulted in a .831, thus above the commonly recommended value of .3; the Barlett's test of sphericity was significant $\chi 2$, $df$ (231) = 1118.677, $p < .000$. In terms of PCA, a finding that indicators have high loadings on the predicted factors indicates *convergent validity* conceptually. Interestingly, a few items loaded into more than one factor, which indicates good *discriminant validity*. Eigenvalues ($\lambda$) are a statistic used in the factor analysis to show how much variation in the group of variables is accounted for by a particular factor (Mulaik, 1972; Rummel, 1970; Tabachnick & Fidell, 2007). The researchers made the decision for the standard for an eigenvalue score is greater than 1.0 (Vogt, 1993).

**The Six Factors.** Six factors with eigenvalues greater than 1 were extracted which accounted for the variance in the 20 items tested (see Table 2). The number of factors retained was based on an examination of percentage of variance explained. This six-factor model accounted for a total of 63.03% of the variance in factor scores. Thus, structure coefficients were used to develop factor labels, which were named as such: (a) Consumer Selection (30.153% of variance percentage [VP]); (b) Major Influence (12.886% VP); (c) Valuable Resource (7.727 VP); (d) Accurate Perception (6.740% VP); (e) Word of Mouth Influence (5.761% VP); and (f) Familiarity (5.524% VP; see Table 2).

Factor 1, *Consumer Selection*, consisted of six items reflecting six consumer behavior beliefs about Rate My Professors.com (RMP). Factor 2, *Major Influence*, consisted of three items reflecting three basic consumer behavior beliefs. Factor 3, *Valuable Resource*, consisted of two items reflecting two basic consumer behavior beliefs. Factor 4, *Familiarity*, consisted of three items reflecting three basic consumer behavior beliefs. Factor 5, *Word of Mouth Influence*, consisted of two items reflecting two basic consumer behavior beliefs. Lastly, Factor 6, *Consumer Selection*, consisted of two items reflecting two basic consumer behavior beliefs.

**Table 2*:*** Study 1 - Results of the Factor Analysis ($N$ = 110)

| Factors and Variable Items | F1 | F2 | F3 | F4 | F5 | F6 |
|---|---|---|---|---|---|---|
| **V22**-Consider RMP a major influence for future decis. | .933 | | | | | |
| V18-Took Professor/Despite RMP Comment | .926 | | | | | |
| V19-Reviewed RMP Comments After Taking Course | .913 | | | | | |
| V20-Consider Comments On RMP Reliable/Professors | .815 | | | | | |
| V23-Consider Comments On RMP Reliable/W.O.M. | .746 | | | | | |
| V17-Disagreed With Comments Posted/Professor | .722 | | | | | |
| **V12**-RMP as a Major Influence | | -.892 | | | | |
| V11-Reviewed RMP About Feedback/Course | | .880 | | | | |
| V16-Taken Course Despite Comments/Professors | | -.820 | | | | |
| **V24**-Views RMP as a Valuable Resource | | | .823 | | | |
| V27-University Should USE RMP/Hiring Decisions | | | .723 | | | |
| **V26**-Consider RMP Comments/Accurate Assess. | | | | .673 | | |
| V14-Reviewed Comments On RMP/Professor | | | | .746 | | |
| V21-Use RMP as a Resource for Future/Selections. | | | | .682 | | |
| **V13**-Word of Mouth Influence | | | | | -.719 | |
| V25-Recommend Using RMP | | | | | .509 | |
| **V9**-Familiar With RMP | | | | | | .814 |
| V10-Reviewed RMP to Inquire About Courses | | | | | | .662 |
| Eigenvalues | 6.031 | 2.577 | 1.545 | 1.348 | 1.52 | 1.05 |
| % of Variance | 30.15 | 12.88 | 7.727 | 6.740 | 5.761 | 5.524 |

***Note:*** Results of 6-factor solution (and 20 items) with principle component analysis extraction with varimax rotation and Kaiser Normalization. Benchmark for this study, a minimum coefficient of .3 and higher will be used as the standard.

## Discussion of Study 1 Results

The results of Study l provide a platform for conducting further research on Rate My Professors.com (RMP). The results of the study provide additional support for examining the social media influence on consumer behavior. Three research questions guided this investigation. In answering the research questions, R1: *Does RMP have a major influence on college students' choices for courses,* R2: Does *RMP have an impact on students' professor choices for course selection*, and R3: *Does RMP have an impact on future students' courses,* we found some validity in the social media influence on consumers. These findings suggest that our results could be usable by marketing researchers who may have an interest in social media and consumer behavior. This research served as an impetus for conducting further research on RMP.

**Limitations of Study 1.**

We had three significant limitations in our research with Study 1. First, the sample of 110 participants for conducting a factor analysis proved to be a challenge. The results of our EFA must be taken with caution because our sample size did not meet the minimum standard of conducting a factor analysis. A factor analysis should be conducted with a minimum of 200 participants. A sample size of 100 for a factor analysis is considered poor (Courtney & Lee, 1992). Given that our results are questions due to sample size, our results are questionable.
Second, our sample size was limited to only two universities. So the results of our EFA are questionable because of a limited population in which we collected data from. So, again, our results must be taken with caution for the pilot study. For our subsequent study, we will be expanding our sample to other colleges and universities. This will provide our study with a much richer sample and data.

Lastly, while Study 1 yielded some insight into subtle differences in the structure of RMS instrument concerning the social media influence on college students' beliefs, we felt our EFA final structure was questionable because it significantly differed from the proposed theoretical model. Also, since we did not conduct a confirmatory factor analysis (CFA) due to our low sample size, we could not tell if our EFA structure represented an optimal fit or good fit for the data. While this study provides some valuable insights into the domain of social media and consumer behavior, again our results may not be generalizable to the entire population of consumers. It is for these reasons the researchers conducted further research on RMP, which will be discussed further in Study 2.

## Results of Study 2

### Study 2: Exploratory and Confirmatory Factor Analysis in a RMP Sample

**Statistical Analysis.** The purposes of Study 2 were to: (a) retest and replicate the factor structure of the RMS instrument via exploratory factor analysis (EFA); (b) retest the measurement model derived from the EFA in Study 1 through a confirmatory factor analysis (CFA); and (c) to assess the internal consistency of the RMS factors. Study 2 is the follow study by the researchers on Rate My Professors.com (RMP). For conducting the statistical analyses of the data, the researchers performed in this study used SPSS ® 21.0 software. For conducting the CFA, the researchers used AMOS 17.0 for computing the data in Study 2. Again, the researcher replicated the multivariate statistical analysis used in Study 1. However, for computing the factor analysis, the researchers used a principal axis factoring (PAF) methodology. Also, a logistic regression, factor scores, Pearson's Correlation, and *t*-Tests were used for the statistical analyses.

**Descriptive Statistics.** For Study 2, the Demographic data was analyzed using descriptive statistics, which measures central tendency, dispersion, and student *t*-tests. The students were asked to complete the Rate My Professors Measurement Scale (RMS), a 29-item instrument.
A sample of ($N$ = 383) undergraduate college students (147 males and 236 females) were recruited for this study. The sampling frame was drawn from: (a) three private universities; (b)

three public universities; (c) five community colleges; (d) three other colleges and universities (online or distance universities).

The table illustrates the descriptive statistics of the sample illustrates: gender, age, ethnicity, student ranking, and class preferences. The *class type* consisted of three types of classes: traditional (61.6%), online (7.3%) and hybrid (31.1%). The *student ranking* consisted of four types of student classifications: freshman (4.7%), sophomore (13.0%), junior (35.0%), and senior (26.0%). For Study 2, in terms of *ethnicity*, we had a more diverse student sample: African American (Black) (5.5%), Hispanic (65.0%), White (24.0%). The *education level* of the students was considerably more diverse: undergraduate (76.0%), graduate (20.0%), and post graduate (4.7%).The demographic data was analyzed using descriptive statistics (measures of central tendency and dispersion) and student *t*-tests, to examine characteristics between group differences (see Appendices).

**Exploratory Factor Analysis.** For replicating the exploratory factor analysis (EFA), the researchers used SPSS 21.0. For Study 2, the EFA procedures from Study 1 were replicated with this data set. The researchers used a principal axis factoring (PAF) approach with an equamax rotation to explore the factor structure. The results of the *scree plot* and item distributions across factors suggested a four-factor structure. The rationale for using the PAF was for when the research purpose when the research is *theory confirmation* and *causal modeling.* PAF is a *correlation-focused* approach (Garson, 1998). For Study 2, the researchers established a benchmark coefficient minimum of .3 or higher for the factors. This indicates some of the scale factor loadings measured for this PAF (29 items) met and surpassed the minimum standard for the benchmark coefficient score of greater than .3. For conducting the EFA and adequate items per factor, we had a PAF result of four factors. After conducting a subsequent factor analysis, the factors were renamed. However, when the results conducted the EFA this time, the factor structure significantly differed from both the theoretical model and the EFA in Study 1 (see Table 2).

Again, for Study 2, factor items that had less than .3 factor loading were eliminated. This time one item was omitted from the results of the PAF. The item, V13-*Prefer word-of-mouth* (from other students) was eliminated due the not meeting the benchmark of .3.To verify the accuracy of the EFA, the researchers performed another PAF on the data at interval and ratio level RMS instrument (20 items) to verify the factor structure. The results of EFA were consistent.

In the PCA, the Kaiser-Meyer-Olkin Measure (KMO) of sampling adequacy resulted in a .933, thus above the commonly recommended value of .3; the Barlett's test of sphericity was significant $\chi 2$, $df$ (190) = 6372.248, $p < .000$. Concerning the PAF, a finding that the indicators have high loadings on the predicted factors indicates *convergent validity* conceptually. Interestingly, a few items loaded into more than one factor, which indicates good *discriminant validity*. The researcher made the decision for the standard for an eigenvalue score is greater than 1.0 (Vogt, 1993).

**Table 3:** Study 2 - Results of the Factor Analysis ($N$ = 383)

| Factors and Variable Items | F1 | F2 | F3 | F4 |
|---|---|---|---|---|
| **V22**-Consider RMP a major influence for future course decisions. | .768 | | | |
| V21-Will use RMP For future prof. selections | .675 | | | |
| V23-Consider RMP comments more reliable vs. W-O-M | .673 | | | |
| V25-Would recommend using RMP to other students | .652 | | | |
| V24-See RMP as valuable resource | .613 | | | |
| V15-Made decision not take course about prof. based on negative com. | .609 | | | |
| V12-RMP plays major influence | .593 | | | |
| **V14**-Have reviewed RMP before taken course about professor | | .726 | | |
| V11-Have reviewed/inquire with RMP | | .693 | | |
| V10-Sometimes review RMP | | .689 | | |
| V9-Familiar with RMP | | .631 | | |
| V17-Taken professor despite negative comments on RMP | | .465 | | |
| **V27**-University's search comm. should consider RMP for future fac. | | | .881 | |
| V28-University's admin should review RMP commts. on current faculty | | | .858 | |
| V26-Consider RMP comments on prof. to accurate | | | .541 | |
| **V16**-Have posted comments about prof. on RMP after taken course | | | | .715 |
| V18-Disagreed with comments posted on RMP about professor | | | | .620 |
| V19-Reviewed RMP comments about prof. after course | | | | .610 |
| Eigenvalues | 9.765 | 2.340 | 1.401 | 1.095 |
| % of Variance | 48.823 | 11.701 | 7.003 | 5.473 |

***Note:*** Results of 4-factor solution (and 20 items) with principle axis factoring extraction method with an Equamax rotation with a Kaiser Normalization. Benchmark for this study, a minimum coefficient of .3 and higher will be used as the standard. * V13 did not meet the minimum coefficient of .3 in the PAF.

**Reexamining the New Factor Structure: Four Factors.**

This four-factor model accounted for a total of 73.0% of the variance in factor scores. Thus, structure coefficients were used to develop factor labels, which were named as such: (a) Factor 1, *Major Consumer Influence*, (48.823% of variance percentage [VP]) consisted of six items reflecting seven consumer behavior beliefs about Rate My Professors.com (RMP); (b) Factor 2, *Consumer Initiative*, (11.701 VP) consisted of three items reflecting five basic consumer behavior beliefs; (c) Factor 3, *Institution Decisions*, (7.003 VP) consisted of three items reflecting two basic consumer behavior beliefs. Lastly, Factor 4, *Consumer Actions*, (5.473% VP) consisted of three items reflecting three basic consumer behavior beliefs (see Table 3).

**Confirmatory Factor Analysis.** The goals of Study 2 were to determine the number of factors underlying the consumer behavior traits and characteristics assessed in the RMS instrument; and to identify the facets of consumer behavior traits, to begin to reduce the number of items in the

RMS instrument and to assess the stability of the factor solution. The most common approach for conducting an adequate confirmatory factor analysis (CFA) is through the use of structural equation modeling (SEM). The rationale for using an SEM is that it is a powerful statistical method for confirming the structural platform of the data.

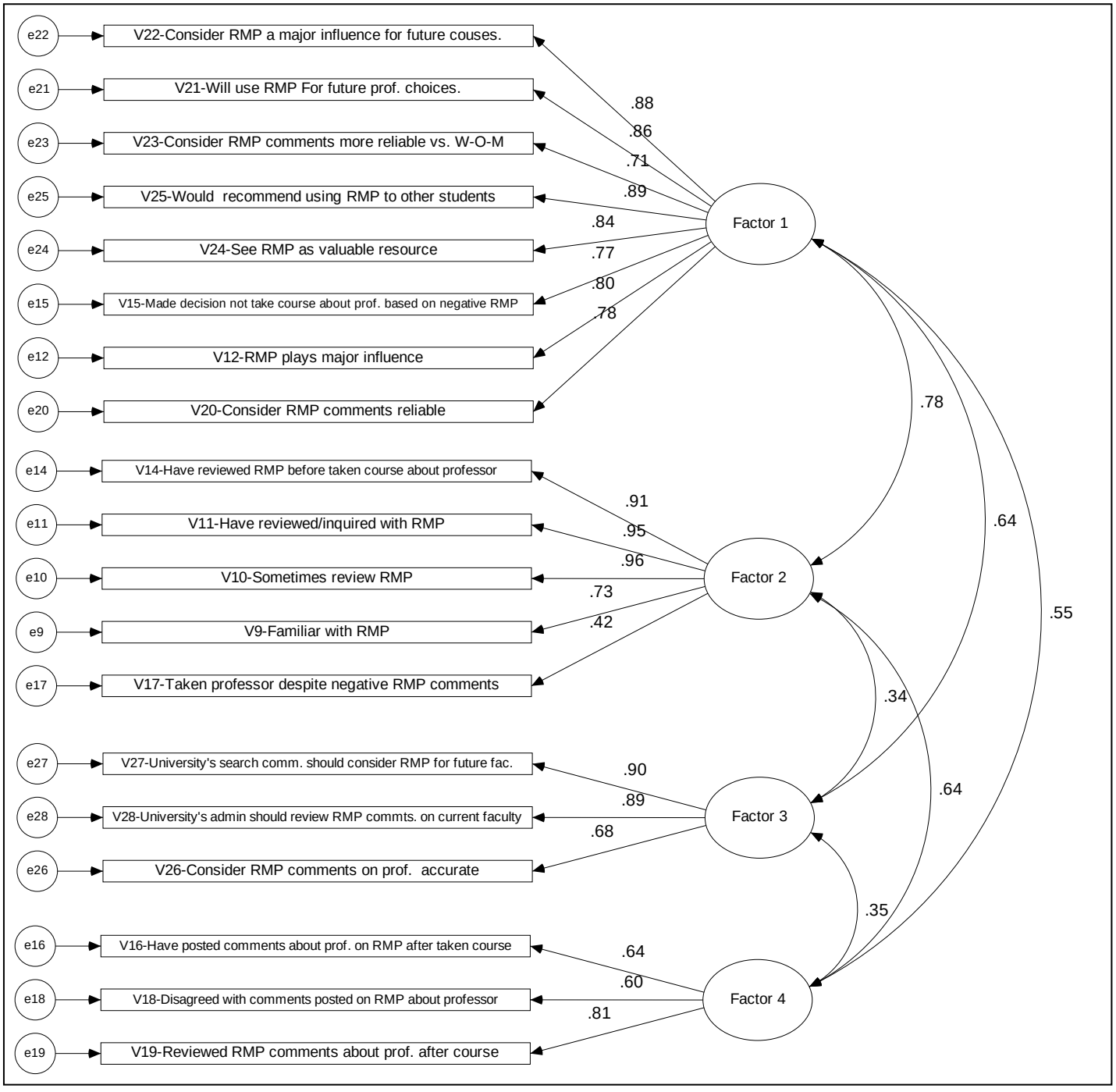
As in Part 2 of Study 2, the researchers used AMOS to conduct the confirmatory factor analysis. SEM is the most appropriate for conducting a CFA. In the CFA, we had a large sample ($N$ = 383), so it was particularly important for the study to get an appropriate sample size adequate for the analyses. We also used a KMO to assess the adequacy of the sample for use in factor analysis. The procedure for conducting the CFA for Study 2 was the same as the procedure used in Study 1. First, the researchers employed SPSS for the EFA to get the factor structure; next the CFA was conducted using AMOS to assess the stability of the four-factor solution discovered from the findings found in the EFA. Based on the EFA, the four-factor model was tested with the 29-item RMS instrument.

**Results of the Structural Equation Model Analyses**

An SEM was conducted based on data collected from the RMS instrument. This was performed through AMOS on the 20 variables. The SEM hypothesized model is presented in Figure 2: (a) The ovals represent the latent variables; and (b) the rectangles represent the measured variables, also represented by the circles connecting them. The absence of a line connecting variables implies the lack of a direct effect. The SEM hypothesized mode examined the predictors of social influence on consumer behavior. The hypothesized model proposed there were four factors that influenced consumer behavior. Additionally it was hypothesized that perceived consumer behavior and choices is directly predicted by social media as an influence. The assumptions were evaluated though SPSS and AMOS.

The data set for 383 participants on the 20 variables of interest. There was no missing data from the sample. There were no univariate and multivariate outliers. The results of the SEM analyses are presented in Figure 3. First, a four-factor hierarchical model was proposed for the study (see Study 1). The SEM loadings of each item on the factor-scale that they were assigned were adequate. *Factor 1* shows very high coefficients (V25-.89; V22-.88) for model fit. *Factor 2* also shows very high coefficients (V11-.95; V11-.96). *Factor 3* also shows some high coefficients (V27-.90; V28-.89). Lastly, *Factor 4* also shows some high coefficients (V27-.90; V28-.89). Overall, the SEM model produced an adequate model fit. The sample for this study was collected online using Survey Monkey.com. The sample for this was 383 subjects. A CFA was performed to assess the factor structure of the RMS.

**Figure.3** SEM Results for the Rate My Professors Measurement Scale (*k* = 20 Items)



**Goodness-of-Fit Statistics for the RMS Instrument**

Table 4 illustrates the final goodness-of-fit statistics for the RMS. The Good-of-Fit (GIF) statistics were reduced from the initial to the final model, despite the statistical significance in the data. Examining the statistics in the RMS data, all of the incremental and absolute fit indices were above the desired level. The benchmark for the RMSEA are as follows: (a) the rule of thumb is values less than 0.08 are an adequate model fit; values less than 0.05 suggest a good model fit; RMSEA values in the range of 0.08 – 0.10 suggest a 'mediocre fit' (Brown, 2006). The benchmark for the GIF indices are as follows: the absolute and incremental fit indices that range from 0 to 1, with higher values indicate a better fit in the data (Kline, 1998).

The CFA was performed using AMOS 17.0 to measure the *unidimensionality*, *convergent* and *discriminant validity* in the RMS instrument. The CFA results provide overall fit indices ($\chi 2$ = 971.11). The $\chi 2$ test in the table also clearly shows compelling results that the sample was not drawn from the hypothesized population. However, what is most interesting is that, the chi-square is susceptible to inflation because of large sample sizes, large degrees of freedom, and non-normal distributions (Raykov, 1998). Based on the GIF results, the statistical test support the rejection of the hypothesized model. The RMSEA coefficients met the benchmark of the desired confidence intervals (.04 –.11 and .06 –.08, respectively). Most of the rest of the GIF indices shown in the table support the viability of the model according to current convention (see Table 4).

**Table 4:** Study 2 - AMOS ® Goodness-of-Fit Statistics

| Goodness of Fit Statistics | Value | |
|---|---|---|
| $\chi 2$ test (*df* = 146) | 971.11 | (*p* = 0.0000001) |
| RMSEA – Root Mean Square Error of Approximation | 0.122 | (test of close fit *p* = 1.00) |
| RMR – Root Mean Square Residual | 0.39 | |
| GFI – Goodness-of-Fit Index | 0.78 | |
| AGFI - Adjusted Goodness-of-Fit Index | 0.72 | |
| CFI – Comparative Fit Index | 0.87 | |
| IFI – Incremental Fit Index | 0.87 | |
| NFI – Normed Fit Index | 0.82 | |
| PCFI – Parsimony Goodness-of-Fit Index | 0.74 | |
| PNFI – Parsimonious Normed Fit Index | 0.72 | |
| TLI – Tucker-Lewis Index | 0.84 | |
| AIC – Akaike Information Criterion | 1059.11 | |
| BCC – Browne-Cudeck Criterion | 1063.97 | |
| BIC – Bayesian Information Criterion | 1232.83 | |
| CAIC – Consistent AIC | 1276.83 | |

(*N* = 383)

**Discussion of Study 2 Results l**

The purpose of the Study 2 was to fill the gaps in Study 1 and conduct a CFA. Study 2 was a continuation of the RMS scale development objective proposed in Study 1. The objectives of conducting a CFA in Study 2 were to validate the factor structure of RMS instrument. *Convergent validity* was done by assessing the factor loadings of the EFA. All of the factor loadings were in the predicted direction in the SEM model. In Study 2, all of the factor items were above the minimum benchmark of .3, which indicate the items represented the respective factors well. After confirming the general EFA model was adequate in the study, the second step was to assess the structural model examining the relationships of the factors. The results of the EFA resulted in a four-factor solution.

The next step in Study 2 was to test the proposed structural model revealed good fit of the model to the data. The good of fit model indices of the SEM analysis included the $\chi 2$ /df, RMSEA, GIF, CFI, and so on. The results lend support to the need for conducting more research on social media and consumer behavior due to the marginal-to-good indices results. Perhaps, further studies on the dimensions of the social media influence on consumer behavior can be undertaken. Our study is a great start but there are further opportunities to extend our research findings.

Overall, this study met its objectives for investigating social media's influence on consumer behavior. Contrary to the results in Study 1, the differences between a six-factor solution and a four-factor solution was significant in the findings of Study 2. The RMS instrument consistently demonstrated four conceptually distinct factors. The RMS instrument exhibits significantly different factor structures in Study 2. The factors, which were derived from the sample, has four factors (F1: Major Consumer Influence; F2: Consumer Initiative, F3: Institution Decisions, and F4: Consumer Actions), which accounted for 73% of the cumulative variance.

The SEM performed well in CFA procedures when compared to the hypothesized model. In the CFA, the indices provided an adequate fit with the data considerably better than the theoretically model. Although the SEM factors all assess the consumer beliefs about RMP, our factor analytic procedures and significance correlation between the factors suggest that they assess the same consumer behavior attitudes and choices. Lastly, we propose that the SEM factors can be scored independently as subscales as possible future research on RMP. Our study provides the platform for further research.

## Discussion

This study investigated the relationship between social media and consumer behavior based on three affective factors such as course choices, professor choices and future courses. To date, there were no existing studies that measured the influence of social media and social media network influence of Rate My Professors.com on consumer behavior of college students. The purpose of this study was to fill that gap by developing a scale to measure the social media influence on consumer behavior and assessing its influence on purchasing decisions and future

choices. The Rate My Professors Measurement Scale (RMS) was developed for this study to measure the influence of social media on consumer behavior in terms of choices.

Specifically, the RMS is a multi-dimensional scale focused on measuring social media influence of RMP on consumer behavior decisions concerning three proposed factors: (a) *course choices*, (b) *professor choices*, and (c) *future choices and decisions*. The objective of developing the scale for the study was fulfilled by proposing a hypothesized theoretical model and conceptual framework, which was empirically tested with two independent samples comprised of college and university participants. This study used an exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) provided evidence for examining the theoretical model used in this research. The study examined a three-factor structure theoretical model based on the influence of social media on consumer behavior. The three-factor structure was also tested using a confirmatory factor analysis, which was exactly the main aim of our studies.

One of the appealing contributions of our study is that it is one of a handful of studies that examined RMP as social media and its influence on consumers and consumer behavior. We developed the RMS instrument specifically for this study. Interestingly, our study is one of the few studies that measures RMP with a researcher-developed and first generation instrument. RMS was developed to measure the influence of social media on consumer behavior and consumption. Lastly, our study is one of the first to examine hypothesized three-factor model based on RMP influence on consumer behavior using a structural equation model (SEM).

**Overall Results of the Study**

Due to the emergence of social media and its influence on consumers, this has forced many marketers to utilize it as marketing channel of distribution. There is a paradigm shift in the field of marketing involving the use of social media and social networks. In addition to social media, it has influenced *crowdsourcing*, which involves taking a form of collaborative working between people in a large social network.

First, the results our study indicates there is relationship RMP and course choices, professor choices, and future choices for college students. In Study 1, we found there some relationships between the variables and social media influences. We conducted an exploratory factor analysis (EFA), in which we used a principal component analysis (PCA). We used the PCA for data reduction (parsimony) and exploration. Our results revealed there were six factors that influence consumer behavior and consumer choices. The results differed significantly from the proposed theoretical model. However, we were not comfortable with the sample size in Study 1, so we wanted to conduct further research to examine the variables and their relationships. It was clear that we needed to collect more data.

Second, we conducted further research on the RMP and collected more data. For Study 2, we further investigated the relationships between social media and consumer behavior with college students. We conducted another EFA, in which we used a principal axis factoring (PAF) method. We used the PAF for theory confirmation, causal modeling, and correlation-focused. Our results revealed a four-factor solution with the data. Again, our results differed from the proposed

theoretical model. Lastly, we wanted to empirically validate the relationships between social media and consumer behavior.

Finally, we wanted to empirically confirm and validate the relationship between social media and consumer behavior decisions. We conducted a confirmatory factor analysis (CFA), in which we conducted a structural equation model (SEM). We conducted a comparison between the variables in the RMS instrument, regarding the exploratory and the confirmatory factor analyses. The results of our study drove us to the conclusion that a four-factor solution was validated with respect to validity and reliability. We also established *content validity* and *construct validity*.
In summary, the two studies we conducted produced a four-factor measure for RMP and college students. We found there are four consumer behavior and choices attributed to the influence of RMP. Our findings were supported with construct validity, reliability and theoretical consistency that may be used to assess the relationship between social media and consumer behavior.

**Relating the Findings Back to the Prior Research**

For our study, we took a different approach for the research. We examined the social media influence of Rate My Professors.com (RMP) on consumer behavior with students. Our findings were somewhat inconsistent with some of the prior research on RMP. Most of the prior research on RMP focused on assessing the professor evaluation properties of the website. So we reached different conclusions from our research. First, we developed a first-generation, researcher-developed instrument (Rate My Professors Measurement Scale). Second, due to the fact that we took a unique research approach, our findings were inconsistent with a major of the prior research on RMP (Silva et al., 2008; Otto et a.l, 2008; & Ritter, 2008). Third, our findings were also incongruent with the more recent research on RMP that further investigated professor evaluation aspects of RMP (Cavanaugh, 2009; Davison & Price, 2009; Gregory, 2011; Kowai-Bell et al., 2011). Lastly, our findings indicate the strong relationship between RMP (social media) and college student choices (consumer behavior). We find social media and consumer behavior are strongly linked.

**Implications of the Study**

Our study makes both a theoretical and empirical contribution to the field of marketing. In summary, the contribution of our study is twofold. First, our major contribution to the field is that our study makes theoretical concept of social media as an influence on consumer behavior. Our study offers a new framework for understanding the social influence on consumer behavior and buying decisions. This study shows that RMP has substantial effects on college students' behavior and purchase intentions. The second major contribution of our study is by testing a theoretical linkage between two constructs (social media and consumer behavior) that was not previously tested. We also investigate the psychometric properties of a scale (Rate My Professors Measurement Scale). We found empirical evidence that the RMP instrument is both reliable and valid, which comprise a scale that can be used in further studies in both marketing and consumer behavior fields. By investigating the properties of our researcher-developed scale, we make an empirical contribution to the field of study.

## Limitations and Future Research

### Limitations

There were some limitations to the current study. First, this study utilized a convenience sample drawn from the college and university population. Interestingly, we had a high response rate. We were able to secure our sample from a total of 14 colleges and universities. The researchers were able to get a rich sample from the schools. Even though we employed a data collection strategy successfully, a potential limitation of our study is our use of a convenience sample. However, while a convenience sample is acceptable, the generalizability of the results of the study must be taken with caution.

Second, another limitation is the reliance on a single channel of data collection. The researchers used the Internet (via Survey Monkey.com) to collect the data exclusively. This could be a limitation because there were other unexploited avenues to collect data such as by telephone and in-person interviews. Using multiple channels of data collection over a specific time could possibly enable a more diverse pool of participants and a better understanding of the causal relationships between the variables.

Lastly, another limitation is geographic constraints. The study had a limitation due to the lack of diversity in the sample in terms of gender and ethnicity. This was attributed to geographical constraints. Due to those constraints, this study was limited in that scope. Cultural differences could play a significant role in the perception of social media and its influences. We found this to be a limitation in our research.

### Future Research

There were some implications for future research based on the findings of the study. First, a line of inquiry for future research could consider examining the perceptions of social media on customers in terms of gender. For example, we may consider the influence of gender with some research questions. Does gender play a significant role on social media influence consumer behavior? Are there different types of social media are more influential when comparing males to females? This line of inquiry would provide an interesting examination of gender, social media and consumer behavior.

A second line of inquiry for future research emanating from this study relates to the role of age in terms of social media and consumer behavior. Future scholars may investigate if age plays a role in social media and consumer behavior. Does age play a factor in terms of social media and consumer behavior? Does age play a significant factor in terms on consumer behavior and purchasing decisions? These questions would provide an interesting study on social media and consumer behavior.

Lastly, a line of inquiry for future research could consider examining the consumer ranking in terms of social media influence. We may want to consider some possible research questions. Are freshmen more influenced by social media compared to seniors? Are undergraduates different compared to graduate students in terms of social media influence on consumer behavior? This

line of inquiry would provide an interesting examination into the influence of Rate My Professors.com.

## Conclusions

The results of this research obtained from conducting an exploratory factor analysis (EFA) to our data suggests the theoretical factor structure consisting of three factors could not be empirically replicated. Furthermore, the confirmatory factor analysis (CFA) results provide strong support for a four-factor dimensional structure to the social media influence on consumer behavior and purchasing decisions. The structural equation modeling (SEM) provides a confirmative analytic framework for testing the differences on latent variables (constructs). The SEM provided the following conclusions from this research: (a) there were four factors of social media that influence consumer behavior among college students; and (b) Rate My Professors.com (RMP) has a significant influence on consumers (college students).

Furthermore, college students are constantly using social media as a means of crowdsourcing. It appears from our findings that social media is an enormous influence on consumer behavior. As we continue to explore the influences on consumer behavior and buying decisions, we can safely conclude that social media is more of an influence on consumer behavior than we originally thought. In conclusion, the core of this research has been to examine how social media can influence consumer behavior and student choices. Again, social media proves to be a significant influence on consumer behavior. The main implication in this study is that RMP has a significant influence on consumers (college students). Again, the clear inference from the research is that RMP is an influence on college students and the extent of its influence still needs further investigation.

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## APPENDICES

***Table 5:*** Study 1 – Demographics

The participants were recruited from 14 colleges and universities in the Bexar County Metropolitan area in South Texas. For Study 1, the first sample ($N$ = 110) would be used for EFA, and for Study 2, the second ($N$ = 383) would be used for CFA and analyses of structural equation modeling. Demographics for both samples appear in Tables 5 and 6.

| Demographic Variables | *n* | % |
|---|---|---|
| ***Gender*** | | |
| Males | 47 | 42.7 |
| Females | 63 | 57.3 |
| ***Education Level*** | | |
| Undergraduate | 110 | 100.0 |
| Graduate | - | - |
| Post Graduate | - | - |
| ***Class Type*** | | |
| Traditional | 27 | 24.5 |
| Online | 11 | 1.4 |
| Hybrid | 72 | 65.4 |
| ***Ethnicity*** | | |
| Asian (Pacific Islander) | - | - |
| Black (African American) | 4 | 3.6 |
| Hispanic | 104 | 94.6 |
| Native American | - | - |
| White | 2 | 1.8 |
| Other | - | - |
| ***Student Ranking*** | | |
| Freshman | 45 | 41.0 |
| Sophomore | 12 | 11.0 |
| Junior | 53 | 48.2 |
| Senior | - | - |
| Other | - | - |

($N$ = 110)

***Table 6:*** Study 2 - Demographics

| Demographic Variables | *n* | % |
|---|---|---|
| ***Gender*** | | |
| Males | 147 | 38.4 |
| Females | 236 | 61.6 |
| ***Education Level*** | | |
| Undergraduate | 290 | 76.0 |
| Graduate | 75 | 19.6 |
| Post Graduate | 18 | 4.7 |
| ***Class Type*** | | |
| Traditional | 236 | 61.6 |
| Online | 28 | 7.3 |
| Hybrid | 119 | 31.1 |
| ***Ethnicity*** | | |
| Asian (Pacific Islander) | 7 | 1.8 |
| Black (African American) | 21 | 5.5 |
| Hispanic | 249 | 65.0 |
| Native American | 1 | .3 |
| White | 92 | 24.0 |
| Other | 13 | 3.4 |
| ***Majors*** | | |
| Arts | 65 | 17.0 |
| Business | 225 | 59.0 |
| Sciences | 42 | 11.0 |
| Other | 48 | 12.5 |
| ***Student Ranking*** | | |
| Freshman | 18 | 4.7 |
| Sophomore | 49 | 13.0 |
| Junior | 133 | 35.0 |
| Senior | 98 | 26.0 |
| Other | 85 | 22.2 |

($N$ = 383)

***Table 7 –*** Study 2: Reliability and Scale Consistency

We investigated both test–retest reliability and internal consistency of the RMS instrument factors. Test–retest reliability coefficients indicated moderate to high stability on all factors. Cronbach's alphas were consistent with the findings from Study 2. The internal consistency coefficients were as follows: α = .93, .89, .85, and .72 for Factors 1– 4, respectively. All factors achieved satisfactory to optimal levels of internal consistency for RMS instrument.

| Factors and Variables | λ | α |
|---|---|---|
| **Factor 1: Major Consumer Influence** | | |
| V22-Consider RMP a major influence for future course decisions. | .768 | .934 |
| V21-Will use RMP For future prof. selections | .675 | |
| V23-Consider RMP comments more reliable vs. W-O-M | .673 | |
| V25-Would recommend using RMP to other students | .652 | |
| V24-See RMP as valuable resource | .613 | |
| V15-Made decision not take course about prof. based on negative commt. | .609 | |
| V12-RMP plays major influence | .593 | |
| **Factor 2: Consumer Initiative** | | |
| V14-Have reviewed RMP before taken course about professor | .726 | .899 |
| V11-Have reviewed/inquire with RMP | .693 | |
| V10-Sometimes review RMP | .689 | |
| V9-Familiar with RMP | .631 | |
| V17-Taken professor despite negative comments on RMP | .465 | |
| **Factor 3: Institutional Decisions** | | |
| V27-University's search comm. should consider RMP for future fac. | .881 | .850 |
| V28-University's admin should review RMP commts. on current faculty | .858 | |
| V26-Consider RMP comments on prof. to accurate | .541 | |
| **Factor 4: Consumer Actions** | | |
| V16-Have posted comments about prof. on RMP after taken course | .715 | .724 |
| V18-Disagreed with comments posted on RMP about professor | .620 | |
| V19-Reviewed RMP comments about prof. after course | .610 | |

(*N* = 383)

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