

RATIONAL AND IRRATIONAL INDICATORS OF FINANCIAL EFFICACY AND DESIRABLE SAVINGS BEHAVIOUR AMONG EAST LONDON LOW-INCOME CONSUMERS

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—Abstract —

Since the principal source of retirement income is savings, the significance of projecting desirable savings behaviour during the pre-retirement phase can never be overestimated. Notably, the majority of low-income consumers in South Africa are not sufficiently prepared for retirement. This provides fertile ground for clarifying the importance of positive long-term savings behaviour. This study aimed to present a composite view by delineating both rational and irrational markers of financial efficacy and self-reported savings behaviour, whilst simultaneously discussing how such determinants can be predisposed towards increasing an individual's retirement savings rate. Procedural techniques in the form of multiple regression analysis quantified the impact of financial risk tolerance, perceived income adequacy and social norms influence on individuals' efficacy towards long-term savings behaviour. The findings of this study have practical implications for financial advisors, on how increased financial needs awareness amongst low-income consumers regarding future retirement life may be generated. Furthermore, this paper contributes towards the development of thriving communities by proffering knowledge on enhancing resource utilisation in lieu of increasing long-term financial security among low-income households.

Key Words: Retirement, financial efficacy, low-income consumers, savings behaviour.

JEL Classification: D12, M21, M31.

1. INTRODUCTION

Retirement signifies the immediate discontinuation of monthly income for retirees upon permanently leaving the workplace. Although retirement ages on average vary (OECD countries 64.4 years; United States of America and Australia 65.2 years; United Kingdom 63.6 years; Mexico 71.5 years; Korea 71.4 years), expenses incurred by retired persons continue throughout lifespan duration, implying the need to accumulate savings over years worked (Koning & Harbor, 2013). Given that the predominant source of retirement income is savings (Russell & Stramoski, 2011), judicious planning during the pre-retirement phase thus becomes essential.

Comparatively, South Africa has a significantly lower average retirement age of 59 years (Plagerson & Ulriksen, 2016) and is similarly characterised as a nation with one of the lowest household savings rates (Ting & Kollamparambil, 2015). Wang and Wen (2011) cite a 25 percent and 28 percent savings rate for India and China respectively for 2010, whereas South Africa reported a dissaving rate of 0.8 percent over the same period (Tondini, Ardington & Woolard, 2017). Relatedly, Sanlam (2018) also note a decline in South African retirement savings, from 49 percent in 2013 to 48 percent in 2017. This cumulates into a growing fiscal burden by having to support mature citizenry through grants. In light of this, an understanding of the nature and determinants of desirable retirement savings behaviour among South African consumers are in order.

2. LITERATURE REVIEW

2.1. The theoretical framing of desirable savings behaviour

The life cycle-hypothesis creates the context of savings by making four assumptions, the first of which is that all individuals are rational beings. Secondly, all individuals are able to deal with complex financial choices alone, without external assistance. Thirdly, all individuals are risk-averse and will thus make concerted efforts towards avoiding risky behaviour at any cost. Lastly, individuals are considered to be wealth-maximising agents. According to Modigliani and Brumberg (1980:130-136), the life-cycle hypothesis theorises that individuals desire to maintain a constant level of consumption throughout lifetime duration by accumulating enough during pre-retirement, a concept known as smoothing. Therefore, the rational implication of the life cycle-hypothesis is the maintenance of expected utility based upon the independent saving rate of pre-retirement individuals (Kahneman & Tversky, 1979).

Accordingly, Shefrin and Thaler (1988) developed the behavioural life-cycle hypothesis, comprising of a subjective evaluation of an individual's self-control, mental accounting and framing, limiting the assumption of rational behaviour in the savings context. Subsequently, Fünfgeld and Wang (2009) confirmed the direct influence of consumer attitude on savings behaviour. Thus, the purpose of this study is to empirically test a selection of both objective and subjective factors that may potentially influence financial efficacy, retirement preservation and saving decisions of consumers.

2.2. Financial efficacy

Financial self-efficacy alludes to “judgments of how well one can execute courses of action required in managing prospective situations regarding finances” (Bandura, 1982:22). In the domain of consumer finance, financial efficacy is assumed to be a proxy for the actual financial capability that helps consumers effectively manage individual finances (Mindra & Moya, 2017). Hence, this study defines financial efficacy as ‘people’s ability to manage and take control of personal finances’. Therefore, since, consumers’ capability to manage personal finance may largely affect well-being, individuals are expected to be both active and well informed in financial activities. Consumers are responsible for consequences arising from retirement choices.

2.2.1. Financial risk tolerance

It is well established that risk-tolerance is an important determinant in the financial well-being of consumers post-retirement, as evidenced by studies covering demographic characteristics such as gender, whereby males are generally considered as being more risk tolerant (Grable, 2000). On the other hand, lower income individuals are regarded to be more risk-averse than those yielding higher incomes (Grable, 2000). Furthermore, Beshears, Choi, Laibson and Madrian (2011) pinpoint that the decision to discount the future is irrational, thereby implying that in the case of retirement savings, a decision to forego immediate consumption and join a retirement savings plan is rational and acceptable. In this regard, Grable and Lytton (2003) tested and validated a financial risk tolerance measurement and found a significant positive relation between risk tolerance and equity investment choices of individuals. Relatedly, Tavor and Garyn-Tal (2016) found that the majority of Israeli consumers have high-risk tolerance regarding retirement savings plans. While this is so, scholars are moot regarding the influence of risk tolerance on attitudinal and behavioural attributes such as financial efficacy. Notably, Beshears et al. (2011) presented preliminary findings in this arena by advancing that risk tolerance is antecedent towards desirable

savings behaviour, albeit that this predictive capacity is limited by time, information and cognitive ability. Thus, it is postulated that;

H₁: There is a direct and significant influence between financial risk tolerance and the financial efficacy of low-income consumers based in East London.

2.2.2. Perceived income adequacy

The term ‘perceived income adequacy’ (PIA) refers to the manner in which a person subjectively evaluates the sufficiency of income to meet household expenses (Litwin & Sapir, 2009). Evidently, income alone is not the only determining factor of an individual’s financial security. Rather, it is a person’s perception of individual income adequacy (termed subjective income) that leads to either contentment and/or dissatisfaction (Grable et al., 2013). Whereas the objective measure of actual income has been found to be a predictor of overall retirement confidence (Moorthy et al., 2012), it is the perception of income adequacy (subjective) that determines whether individuals feel sufficiently prepared for retirement in terms of long-term savings. Thus, this study hypothesises that:

H₂: There is a direct and significant influence between income adequacy and the financial efficacy of low-income consumers based in East London.

2.2.3. Social norms influence

Consistent with Ajzen (1991), this study defines social norms influence as the social pressure an individual perceives in performing or not performing a certain behaviour. In this regard, social consensus cannot be precluded from shaping an individual’s perceptions, behaviour and interactions at the macroeconomic level (Edvardsson, Tronvoll & Gruber, 2011). Interestingly, the power of social norms is more pronounced under conditions of uncertainty (My & Truong, 2011). Furthermore, empirical evidence highlights that young people attribute the meaningfulness of general savings to the referent influence of parents and peers (Wheeler-Brooks & Scanlon, 2009). This may include following the advice of individuals perceived as knowledgeable experts or emulating the actions of peers and family. In this study, it is hypothesised that:

H₃: There is a direct and significant influence between social norms influence and the financial efficacy of low-income consumers based in East London.

2.2.4. Relationship quality

Given the limited differentiation among the various products and services, the capacity to nurture long-term relationships with clients enables businesses to resist changes in the competitive environment (Kaleem, Wajid & Hussain, 2009). Interestingly, the concept of relationship quality is rapidly supplanting service quality as a driver of competitive advantage among business-to-customer (B2C) organisations (Hackethal, Haliassos & Jappelli, 2012). Notably, an improved relationship with advisors from retirement insurers may reduce the perceived anxiety concerning the decision to save for the long-term (Ruefenacht et al., 2015). Of note, relationship building matters the most in financial and banking scenarios where consumers are vulnerable to opportunistic behaviour, and thus signals the importance of trust and commitment (Inderst & Ottaviani, 2012). Therefore, it is reasonable to expect an attenuating effect of relationship quality on customer anxiety and vice versa. Moreover, drawing upon the theory of the hierarchy of effects, Ki and Hon (2012) delineated a sequence of influence spanning from relationship perception to attitudes to behaviour. Accordingly, in this research, relationship quality is delineated as a subjective evaluation of a continuous relationship between a consumer and the retirement plan sponsor, in lieu of enhancing financial efficacy (an attitude) and desirable saving behaviour. This leads to the following hypothesis:

H₄: There is a direct and significant influence between the quality of the banking relationship and the financial efficacy of low-income consumers based in East London.

2.2.5. Desirable savings behaviour

Consistent with the assumptions of reasoned action, saving is considered to be a voluntary and deliberately thought-out action. Accordingly, Shefrin and Thaler (1988) applied the findings of behavioural economics and developed the behavioural life-cycle hypothesis. Subsequent research has included different behaviour-oriented concepts to explain savings behaviour such as the study by Fünfgeld and Wang (2009) who revealed a taxonomy of five attitudes that explain savings behaviour. This study confidently relates financial efficacy, a type of savings attitude with desirable (positive) long-term savings behaviour. In light of this evidence, the following hypothesis is posited:

H₅: There is a direct and significant influence between an individual's financial efficacy and the decision to engage in desirable long-term savings behaviour among low-income consumers based in East London.

3. PROBLEM UNDER INVESTIGATION

Existing research, from an emerging markets perspective, has yet to find an exhaustive explanation of significant factors that elucidate the decision-forming process of consumers regarding retirement savings (Hira, Rock & Loibl, 2009). This is especially significant for low-income consumers desiring to save for the long-term in the form of retirement investments. Consistent with Kahneman and Tverky (1979), this study asserts that in the case of making long-term savings, individuals are apprehensive about outliving accumulated assets and not having adequate income in the post-retirement period. Moreover, consumers are limited in terms of rational decision-making, implying that sub-optimal choice occurs, with outside intervention. The current study promulgates a balanced view of rational (risk tolerance) and irrational factors (perceived income adequacy, social norms influence and relationship quality). Whereas objective measures are designed to assess objects that are representative of reality, this study also acknowledges the inclusion of subjective measures that predict the financial efficacy and desirable retirement savings behaviour of low-income consumers.

4. METHODOLOGY

This study is grounded in a positivist epistemology, focusing on revealing causal relationships between variables. Specifically, the study was cross-sectional in nature and followed a descriptive research design.

4.1. Sample and measures

This study was carried out among adult individuals in the greater East London area, located in the Eastern Cape province of South Africa, which is characterised by a truncated distribution of formal financial services. The unit of analysis was the individual consumer in the low-income category (less than ZAR300 000 p.a.), employed in a government department. A multi-stage sampling technique was used to draw out the sample of consumers within the Buffalo Metropolitan Municipality in East London based on the compact populous of the working age group, as well as the rural-urban characteristic. The target respondents comprised consumers, of different age and race groups, employed within the public sector. During the second phase of the sampling process, government departments located within the municipality were selected from a list of divisions identified from governmental websites. Based on predictable employability status, three departments were selected from this list (agriculture, community and technical services). Moreover, only those people contributing to either a pension fund, provident fund and/or retirement annuity for retirement savings were included in

the survey. Subsequently, 60 employees from each department within the municipality were nominated for participation in this study, leading to a final sample size of 360.

In terms of measurement, the instrument included a section inquiring into the demographic attributes of respondents. Furthermore, the variables under investigation were operationalised along a six-point Likert-scale of agreement (ranging from 1= strongly disagree, to 6= strongly agree), drawing upon validated scales used in past research. Owing to the complex nature of the variables and the need to increase the sensitivity of the scale, multi-item scales were used. In particular, indicators were drawn from Ruefenacht et al. (2015:932) to measure relationship quality (6 items) and social norms influence (4 items). Perceived income adequacy was measured by a 5-item scale gleaned from Grable et al., (2013:1114), whereas financial risk tolerance was measured using a shorted-version (6 items) of Grable and Lytton's (2003) scale. Financial efficacy was measured through the 7-item scale used by Taylor (2011:300) whereas desirable savings behaviour was measured by a 12-item scale used by Xiao, Chen and Chen (2014:421). Terminology pertaining to some items was slightly adjusted to fit the context of this research. The structured questionnaire was pre-tested in view of identifying and correcting possible misrepresentation arising from terminology utilised.

4.2. Data collection procedure

Data were collected with the aid of a self-administered and structured questionnaire. Pre-approach telephone calls were made to the selected departments for initial approval and ethical clearance. Subsequent appointment visits to administer the survey were made between February and August 2017. Each department arranged for a staff member to be in charge and provided the staff members' personal contact numbers and e-mail addresses for appointment scheduling. Two Honours students from a local university were incorporated during the data collection process as enumerators and note takers, with a responsibility to explain further the study objectives and the expected outcomes. Nonetheless, 42 of the pre-recruited consumers declined to participate in the survey, owing to either disinterest or unavailability, resulting in 318 responses (88% return rate) being used in the eventual empirical analysis.

5. RESULTS

Data were captured and analysed using the Statistical Package for Social Sciences (SPSS) (Version 24).

5.1. Demographic profile

Approximately 54 percent (n=172) of respondents are female, whereas 46 percent (n=146) are male. In terms of age, the majority of respondents' range between 36 and 55 years (59 percent; n=188). Concerning employment status, 61 percent hold a permanent and full-time job (n=194) whereas 39 percent work on either long or short-term contracts (n=124) in government departments.

5.2. Exploratory factor analysis

To reduce the data set and thereby evaluate the construct validity of this study, exploratory factor analysis (EFA) was performed using the Principal components extraction method with Maximum likelihood estimation (Hair, Black, Babin & Anderson, 2014). Data were considered suitable for EFA when the reported Bartlett's test of sphericity (Chi=1096.610; df=249), was large and significant for all constructs (p-value < 0.0001) and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA=0.921) was larger than 0.50 across all constructs. Thus, data were considered appropriate for factor analysis (Field, 2013). Whereas no restrictive command was given on the number of factors to be extracted, the EFA procedure yielded six unique factors based on the eigenvalue (>1) criterion. Additionally, the EFA procedure was performed because the scales were previously validated in developed country contexts and had not subsequently been confirmed in a developing country, albeit among the low-income consumer segment. For a cleaner and easy-to-interpret component structure, data were subjected to Varimax rotation in 25 maximum iterations converging at right angles (orthogonal). Following an inspection of all the items loading onto each factor, the factors were then labelled financial risk tolerance, perceived income adequacy, social norms influence, relationship quality, financial efficacy and desirable savings behaviour. Together these factors explained 71.4 per cent of the total variance exhibited within the data.

5.3. Reliability and validity testing

In accordance with Field (2013), internal consistency of the scales was evaluated using Cronbach's alpha coefficient values, reported in the following order; financial risk tolerance ($\alpha = 0.845$), perceived income adequacy ($\alpha = 0.817$), social norms influence ($\alpha = 0.806$), relationship quality ($\alpha = 0.757$), financial efficacy ($\alpha = 0.881$) and desirable savings behaviour ($\alpha = 0.829$). After exceeding the 0.70 benchmark put forward by Malhotra, Nunan and Birks (2017), the scale was considered reliable. Evidence of convergent validity was proffered by the significant and high item loadings ranging between 0.569 and 0.891 (greater than

0.50). Relatedly, the scale items depicted communality values ranging between 0.619 and 0.789. This implies that the scale items existed cohesively with other similar items along the measurement scale. In contrast, evidence of discriminant validity was provided when items did not cross-load onto other factors. Moreover, the Pearson correlation coefficients across all pairs of variables were less than one, with reported correlation coefficient values (between +0.374 and +0.541 at $p < 0.01$ and $p < 0.05$) below the cut-off threshold limit of 0.70, which Field (2013) alludes to as being an indirect indicator of discriminant validity of a study.

5.4. Assumptions of regression analysis and diagnostic testing

Three considerations were made in lieu of ascertaining that the basic inherent assumptions of regression analysis were met. First, Tabachnick and Fidell’s (2014:666) proposal that “a sample size of 50 plus eight times the number of independent variables” should be used was upheld, whereas 318 respondents were available, well above the required minimum of 98 participants. Secondly, diagnostics tests were performed on the normality, linearity, multicollinearity and homogeneity of variance (Pallant, 2013). The results presented in Table 1 reflect data adequacy.

Table 1: Diagnostics and preliminary results

Scales	Mean	Standard Deviation	Skewness	Kurtosis	VIFs	ANOVA F-statistic	Leven test	Kolmogorov
FI	5.331	0.902	-1.078	1.327	3.106	110.197	2.891	0.353
PIA	4.978	0.930	-0.872	1.640	1.854	122.583	8.412	0.432
SNI	4.736	1.186	-1.373	1.229	3.403	125.382	6.874	0.322
RQ	4.421	0.978	-0.920	1.045	2.841	127.995	7.452	0.441
FE	5.331	0.902	-0.978	1.327	1.169	194.007	19.665	0.246
DSB	4.978	0.930	-1.599	1.730	2.254	222.874	31.788	0.209
Threshold	≥4.0	±1.0	Between ±2	Between ±2	<5.0	Large	Large	≥0.05

FI=Financial inclusion; PIA=Perceived income adequacy; SNI=Social norms influence; RQ=Relationship quality; FE=Financial efficacy and DSB=Desirable savings behaviour

Whereas the reported skewness and kurtosis values (ranging between -2 and +2) as well as the insignificant ($K-S \geq 0.05$) Kolmogorov Smirnov values signalled a normally distributed data set (Malhotra et al., 2017), VIF values below 5.0 demonstrated absence of collinearity problems in the data set. On the other hand,

the probability plots were in a straight, diagonal line, whereas visual inspection of the scatterplot showed scores clustered in the middle, tangential to the zero-point with no curvilinearity. This confirmed that the assumptions of normally distributed data and homoscedasticity of variance were met (Pallant, 2013). Furthermore, the Mahalanobis distance was calculated at 7.63, with Cook's distances of 0.087 (< 1), suggesting that "no multivariate outliers were present in the data" to cause potential problems on the regression model (Tabachnick & Fidell, 2014:666).

Thirdly, a correlation analysis exercise was conducted. The Pearson's product moment correlation values between financial efficacy (predictor variable) with four indicators, namely financial risk tolerance ($r = +0.374$; $p < 0.01$), perceived income adequacy ($r = +0.389$; $p < 0.01$), social norms influence ($r = +0.541$; $p = 0.021$) and relationship quality ($r = +0.503$; $p = 0.03$) revealed moderate sized correlation coefficients that appeared statistically significant at $p < 0.01$ and $p < 0.05$. In addition, the test indicated that the association between objectively measured financial efficacy and desirable savings behaviour was positive but of moderate effect size ($r = 0.447$; $p = 0.000$). Based on these significant initial findings and since the assumptions for regression analyses were met, standard regression analyses were executed.

5.5. Regression analysis

A regression analysis was conducted to determine whether factors selected could significantly predict an individual's financial efficacy, with results reported in Table 2. Subsequently, the Enter method was applied in the analysis, whereas, a 95 per cent confidence interval was used in the study to determine statistical significance. Based on these findings, Hypotheses 1, 2, 3, 4 and 5 (H_1 , H_2 , H_3 , H_4 and H_5) are fully supported by empirical data.

Table 2: Regression analysis results

Dependent variable: Financial efficacy	Beta	T	Sig	Collinearity Statistics	
Model 1: Independent variables				Tolerance	VIF
Financial risk tolerance	0.493	5.539	.032	.654	3.106
Perceived income adequacy	0.216	4.122	.000	.856	1.854
Social norms influence	0.392	6.884	.000	.688	3.403
Relationship quality	0.207	3.897	.029	.714	2.841
R=0.706 R ² = 0.498 Adjusted R ² = 0.493					
Dependent variable: Desirable savings behaviour	Beta	T	Sig	Collinearity Statistics	
Model 2: Independent variable				Tolerance	VIF
Financial efficacy	0.435	7.318	.000	1.00	1.00
R=0.435 R ² = 0.189 Adjusted R ² = 0.192					

6. DISCUSSION

A combination of correlation, general linear model, and regression analyses was used to test the hypotheses associated with this study. A general linear model was developed to determine firstly, if and how the four factors were associated with financial efficacy (regression model 1). All four identified factors in Table 2 were positive and significant. While contributing 49 percent explanatory power to the regression model ($R = .706$, $R^2 = .498$, $F(2.82) = 56.823$, $p < .001$), the contribution of each of the four factors was of differing weight. Based on hypothesis H₁, the results of this study indicate that the link between financial risk tolerance and enforcing the ability to save is positive ($\beta = +0.493$, $t = 5.539$, $p < 0.05$). In this regard, the neoclassical view that individuals are more inclined to exhibit rule-based behaviour (rational), with respect to savings, is upheld. According to model 1, the rational aspect of decision-making is the largest contributor, an indication derived from the highest beta value for financial risk tolerance. These findings are in line with those of Beshears et al., (2011), Grable and Lytton (2003) and Grable (2000). Even though the sample is classified as being low-income, the results indicate that within this classification there is a behavioural drive to move away from risk aversion when it comes to retirement savings, although this may not be as magnified as with higher income earners. Looking at the second hypothesis (H₂), the first of the irrational aspects based on one's perceptions and emotional views is income adequacy. The results indicate a significant relationship with financial efficacy ($\beta = +0.216$, $t = 4.122$, $p < 0.001$). This means that the decision to save is a choice and can be attributed to

psychological aspects. The more one feels and perceives their income expectations are closer to being met, the more likely they are to engage in pro-savings decision-making (Grable et al., 2013). Even though individuals are classified as being within the low-income category, they seemingly exhibit limited emotional anxiety and cognitive deficit, suggesting an increased measure of self-worth because of their income expectations, which implies that these individuals' will most likely save for retirement.

In terms of hypotheses H₃, pro-saving decision-making is influenced by the power of social networks ($\beta = +0.392$, $t = 6.884$, $p < 0.001$). The confirmation of herding behaviour suggests that individuals will go against personal beliefs and views and rather base decision-making on societal trends, beliefs and expectations. These findings are similar to those of previous scholars (Wheeler-Brooks & Scanlon, 2009). In this respect, social norms influence represents the second most prominent contributor towards financial efficacy. The variable depicts the second largest influence amongst determinants included in model 1, as based on the size of Beta values, thereby suggesting that irrational factors occupy a significant role in influencing pro-saving behaviour. Thus, individuals are likely to forego current consumption in favour of future consumption if it is perceived that social networks and other referent groups have both a positive and practical view of the subject matter.

The role of professional financial advisors is also a significant contributor to pro-savings behaviour ($\beta = +0.207$, $t = 3.897$, $p < 0.05$). In relation to hypotheses H₄, the results indicate that relationship quality is significant, albeit that it is an avenue that delivers limited influence on consumers' financial efficacy. Relatedly, empirical evidence suggests that the reputation of financial advisors is generally frowned upon by some consumers (Golubov, Petmezas & Travlos, 2012; Ismail, 2010), thus explaining the restricted level of influence. Finally, estimates of financial efficacy and desirable savings behaviour were calculated using a dissimilar prediction model (regression model 2) to address hypothesis H₅. In this study, financial efficacy depicted a positive, significant effect on savings behaviour ($\beta = +0.435$, $t = 7.318$, $p < 0.001$). This result suggests that participants who have greater knowledge of personal finances tend to engage in effective financial behaviour that includes preserving retirement savings until working life has concluded. Approximately 19 percent of the variation in savings behaviour can be attributed to financial efficacy alone.

7. CONCLUSION AND RECOMMENDATIONS

This paper sought to present a composite view by delineating the impact of both rational and irrational elements on financial, whilst discussing how these determinants can be predisposed to increase an individual's savings rate. Evidence suggests that policy interventions should be based on the assumption that individuals can also act irrationally as suggested by behavioural theorists. For South Africa, an economy that struggles to save relative to other economies, the authors suggest a cohort of softer tactics to nudge low-income consumers in the right direction. Interventions such as decision support and guidance from social networks may assist individuals in making pro-saving decisions, while the facilitation of quality relationships with retirement plan advisors is an avenue that can be further explored and utilised. Moreover, financial service institutions should implement relationship quality initiatives such as loyalty programs, tangible rewards and interpersonal communication. In terms of the conceptual contribution of this work, the results brought about an understanding that retirement planning is a protective factor for retirees, whereas individuals with high retirement confidence are those who believe that accumulated savings and returns provided by the pension scheme are sufficient for a financially secure retirement life. Notably, the focus of this study was delimited to formalised retirement savings structures (i.e. contributions towards a retirement fund). Further work covering other forms of direct investments made by low-income earners, such as financial markets and stokvels, should be considered. Moreover, although the sample size that was used is substantial for a study evoking the use of multivariate statistics, the results of this study remain germane to that specific group of consumers alone.

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