



MAN-SUMER-ISM IN RETAIL: AN EMPIRICAL STUDY FROM EMERGING RETAIL FORMATS OF URBAN ODISHA

Priyanka Tripathy¹, Prof. Bidhu Bhusan Mishra², Dr. Kishore K Das³

¹priyaimba.tripathy@gmail.com, (Ph.) +91 9776083760
Research Scholar, School of Commerce and Management Studies,
Ravenshaw University, Cuttack – 753003,

²bidhumishra2006@yahoo.co.in, (Ph.) +91 9437134777
Utkal University, Bhubaneswar, Odisha

³drkkdasru@gmail.com, (Ph.) +91 9437154470
Dean, School of Commerce, Ravenshaw University,
Cuttack, Odisha

Abstract

When it comes to shopping in-store, both genders vehemently agree that long lines to check out hinder their enjoyment when it comes time for some retail therapy. Since the term “mansumer” was coined in December 2012, retailers have worked to identify how purchasing patterns differ between women and men. The rise of e-tail has leveled the playing field between male and female shoppers. The Mansumer Myth states that retailers falsely believe that men should be treated differently than women because they are more efficient and concerned about time, they are not influenced by browsing and they make logical rather than emotional decisions. Everything from advertising style, message, and media, to product design, store layout, sales training, and customer service policies are designed to appeal specifically to both sexes. Failure to address the idiosyncrasies of gender can have real financial consequence for retailers. The purpose of this study is to compare men and women for differences in shopping from emerging retail formats.

Key words: Mansumer, Gender, Retailing.

INTRODUCTION

Shopping is the driver of the nation’s economy. Stores are finally recognizing what seems like a basic fact of retail: Men and women shop differently. Faced with the increasing competition from online retailers, some brick-and-mortar retailers are embracing a practice known as gender-based selling, where stores aim to lure men and women to shop by focusing on their shopping differences. Knowing that men hate to browse, a store may group all its men's products in one location close to the entrance, and knowing women like suggestions, it may train associates to offer product alternatives.

While some retailers are hesitant of a sales strategy that essentially says to treat men and women differently, others have embraced it as a progressive model to offer the best customer experience. "The traditional sales model, where you treat every single person like an average consumer, doesn't make any sense," says Barbara Kahn, director of the University of Pennsylvania's Jay H. Baker Retailing Center, which published one of the first studies on gender differences in the shopping experience. The study found women are most affected by personal interactions with sales associates, while men are affected by pragmatic factors, like the availability of products and parking spaces.

"We can't do one size fits all anymore. Women are risk-averse, and will want to know more about the features and benefits of the product," says Delia Passi, CEO of Women Certified, a research and consumer advocacy group. Making the store experience more interactive—"touching a fabric, staging it with matching bags—will prompt [a woman] to want to buy more."

Men, on the other hand, just want to know where the product is and they "want their areas clearly defined," Ms. Passi says. To men, the worst outcome is to walk out of a store empty-handed. Ms. Passi reveals that requests for her company's training in gender-based selling have increased tenfold over the past decade. Her clients range from apparel retailers to automotive companies.

Brett Beveridge, founder and CEO of Retail Outsource Co., a sales-performance company in Coral Gables, Fla., says nearly all his clients are asking for training in gender-based selling. Mr. Beveridge advises clients—from big-box electronic retailers to service providers—on how men and women respond to particular service and design choices. To cater to men, for example, he tells retailers to put information on fact boards near the products, so men don't have to ask questions of associates. Men "like to feel that they're competent and know the answers," he says.

When it comes to shopping, women are from Nordstrom's and men are from Sears. Women are happy to meander around through sprawling clothing and accessory collections or detour through the shoe department. They like to glide up glass escalators past a grand piano, or spray a perfume sample on themselves on their way to, maybe, making a purchase. For men, shopping is a mission. They are out to buy a targeted item and flee the store as quickly as possible, according to new Wharton research.

LITERATURE REVIEW

Gender difference is an external influence of consumer behaviour, and this difference has been well researched (example, Pease and Pease, 2001). In the marketing literature, researchers have examined gender differences in different streams of research, for example, message processing (Meyers-Levy and Sternthal, 1991), price promotions (Mazumdar and Papatla, 1995), impulse purchases (Dittmar et al., 1995), attitudes toward shopping forms (Rajpoot et al 2008, Alreck and Settle, 2002, Dholakia and Uusitalo, 2002, Dittmar et al., 2004, Garbarino and Strahilevitz, 2004 and Chang and Samuel, 2004), and advertising (Martin, 2003). This stream of research has substantiated differences between men and women in terms of behaviour attitude towards shopping.

Marketing researchers and practitioners have been reporting gender differences and have observed some notable differences. For example, it was found that 67% of women enjoy shopping, compared to 37% of men (Klein, 1998). Another research found that women are more likely to buy in a store than men (Lucas, 1998), and women are more likely to buy gifts than men (Yin, 2003). Similarly, it was found that women go shopping to browse around and see shopping as an enjoyable activity while men go shopping just to meet their needs, seeing it as a duty. (Durakbaşa and Cindoğlu, 2002).

Consumer value places emphasis on the principle of maximizing efficiency or optimizing output for a particular level of input (Sproles, 1980). In the marketing literature, value has been discussed in the context of exchange or a return for something, a trade-off between benefits or satisfaction received and costs or sacrifices incurred (Downs, 1961, Murphy and Enis, 1986). With a similar concept, Zeithaml's (1988) value definitions of "the quality I get for the price I pay" and "what I get for what I give" also signify a trade-off between the benefit and cost component of shopping value. Researchers have also identified other dimensions of value, such as pleasure from shopping (Downs, 1961 and O'Guinn and Faber, 1989), quality of service (Zeithaml, 1988), and convenience of shopping (Mazursky and Jacoby, 1986). The essence of all this research is that shoppers weigh costs beyond the monetary cost of goods.

The term Lifestyle has its roots in the field of psychology (Coreil et al. 1985). Lazer (1963) introduced the concept of lifestyle to marketing. The term embraces cultural affiliation, social status, family background, personality, motivation, cognition, and marketing stimulus (Horley 1992). Lifestyle can be identified by a wide range of activities, interests, and opinions (Plummer 1974). Lifestyle analysis may be defined as patterns of activities on which consumers spend their time and money (Engel et al., 1995). Since then, a number of studies have developed and refined methods and models to measure lifestyles (example, Green et al., 2006, Jih and Lee, 2004).

In the marketing discipline, numerous studies have shown that lifestyle is a predictor of consumer purchasing behaviour (Fullerton and Dodge, 1992 and Jih and Lee, 2004). In the context of mall shopping, an analysis of the lifestyle influence on consumer purchases can be helpful to identify the target markets and promote the malls offerings.

A study on shopping orientation was first initiated by Stone (1954), who referred to shoppers' styles. Since then, the term has expanded to include personal, economic, social, and recreational characteristics of shoppers (Visser and Du Preez, 2001). Though many studies have examined shopping orientation, very few studies have examined shopping orientation in a mall setting (Mejia and Benjamin, 2002). Studies have identified the influence of recreation or entertainment as a source of differentiation that could attract shoppers into malls (Haynes and Talpade, 1996; Maronick and Stiff, 1985). Other studies have identified an increasing tendency towards mall patronage for exclusive window shopping (for example, Nicholls et al, 2002). The utilitarian dimension of shopping attitude is also fairly supported in the marketing literature (example Allard et al, 2009). Despite that previous research, little insights are available regarding the influence of orientations on shopping attitude. This study is an attempt in this direction. Moreover, keeping the Saudi context, a multi-item shopping orientation scale based on past research is developed to measure orientation attributes.

OBJECTIVES OF THE STUDY

The following objectives are postulated with assumed shoppers' evaluations of the relationship between the attitude toward shopping and the other influence variables:

- To understand whether there is a significant association between men and women in their shopping value preferences from emerging retail preferences.
- To understand the perceptions of the male and female respondents towards emerging retail formats.

DATA COLLECTION

In order to examine the perception and preference of the consumers, the study has used a single cross-sectional descriptive research design. The association between the dependent and independent variables has been inferred using the causal – comparative relationship.

Each of the questionnaire surveys was administered by the researcher in order to ensure the respondents were able to understand all the questions, a brief explanation and guidance was given by the researchers to assist the respondents to understand and provide more précised feedback. Missing data was also reduced through close monitoring by the researcher. None of the respondents was forced to participate in order to ensure the feedback was more precise Hassan, H. & Rahman, M.S. (2012a).

For the purpose of carrying out this study both primary as well as secondary data have been used. Finally, 601 consumers have been taken for the purpose of carrying out the survey, 643 questionnaires were distributed to the urban consumers from different regions of Odisha, i.e., Bhubaneswar, Cuttack, Rourkela, Berhampur and Sambalpur.

The data was collected through stratified random sampling. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics. It is a method of sampling which involves the division of the population into smaller groups known as strata based on their members sharing a specific attitude or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. In the present study the stratum are the five different market locations chosen. In these market cities, the respondents have been chosen on random basis.

DATA ANALYSIS

To test the relationship between men and women and demographic variables, Chi-square analyses were performed to test the hypothesis.

Table 1 presents the results of these analyses. Chi-Square test signify whether the proportions of reopeness within each category are significantly different from a uniform distribution. The significance level where $p < 0.05$ is used for interpretation. Chi-square test compares the observed data to the expected one under the assumption of a uniform distribution and calculates the chi-square value and its associated value. Out of the eight variables examined seven variables: age, education, occupation, yearly income, marital status, money spent and time spent in shopping were found to be significant, while the remaining that is frequency of shopping was not. On the other hand, the p value > 0.05 , reflects that their influence is insignificant for shopping from emerging urban retail formats and are not preferred by the consumers. Thus, it can be said that there is a significant difference between men and women in their shopping from emerging retail formats. In terms of age grouping, more women than men were shoppers in the age group of 16-30 years. This was in contrast to shoppers in the remaining three age groups where the percentage of men was higher than that of women ($p = 0.001$). As for education, more men were shoppers as compared to women. However, in terms of occupation also the number of male shoppers was higher than female shoppers ($p = 0.001$). It is relevant to point that in terms of frequency of shopping women shoppers visit more than the male shoppers. Significant differences between men and women based on time and money spent were also found as reported in Table 1.

Table 1: Demographic comparison between the genders

DEMOGRAPHIC VARIABLES		TOTAL	MALE	PERCENT	FEMALE	PERCENT
Age	16-30	335	158	47.164179	177	52.83582
	31-45	115	65	56.521739	50	43.47826
	46-60	119	99	83.193277	20	16.80672
	61-75	33	27	81.818182	6	18.18182
	Chi Square = 54.320 *; tab value = 0.000					
Education	Below Matric	15	5	33.333333	10	66.66667
	Under Graduate	117	61	52.136752	56	47.86325
	Graduate	264	97	36.742424	167	63.25758
	Post-Graduate	205	90	43.902439	115	56.09756
	Chi Square = 8.690 *; tab value = 0.034					
Occupation	Business	60	4	6.6666667	56	93.33333
	Government Official	21	10	47.619048	11	52.38095
	Home Maker	37	4	10.810811	33	89.18919
	Professional	41	14	34.146341	27	65.85366
	Service	167	128	76.646707	39	23.35329
	Student	275	153	55.636364	122	44.36364
	Chi Square = 110.639 *; tab value = 0.000					
Yearly Income	Less Than 2 Lakh	244	114	46.721311	130	53.27869
	3 Lakhs – 5 Lakhs	226	101	44.690265	125	55.30973
	6 Lakhs – 10 Lakhs	75	21	28	54	72
	More Than 10 Lakhs	56	17	30.357143	39	69.64286
	Chi Square = 12.045 *; tab value = 0.007					
Marital Status	Single	323	165	51.083591	158	48.91641
	Married	272	84	30.882353	188	69.11765
	Widow/ Widower	3	2	66.666667	1	33.33333
	Divorce	3	1	33.333333	2	66.66667
	Chi Square = 28.957 *; tab value = 0.000					
Frequency of Shopping (week)	1 – 3 Times	474	193	40.7173	281	59.2827
	4 – 6 Times	71	33	46.478873	38	53.52113
	More than 6 Times	16	7	43.75	9	56.25
	None	40	20	50	20	50
	Chi Square = 1.972 *; tab value = 0.578					
Time Spent in Shopping	Less than 30 minutes	142	26	18.309859	116	81.69014
	30 minutes – 1 hour	305	134	43.934426	171	56.06557
	More than 1 hour	150	91	60.666667	59	39.33333
	None	3	2	66.666667	1	33.33333
	Chi Square = 54.575 *; tab value = 0.000					
Money Spent in Shopping	Less than Rs.1000	175	65	37.142857	110	62.85714
	Rs. 1000 – 5000	314	121	38.535032	193	61.46497
	Rs. 5000 – 10000	90	54	60	36	40
	More than Rs. 10000	21	13	61.904762	8	38.09524
	Chi Square = 18.775 *; tab value = 0.000					

Factor Analysis

601 replies were used to conduct a factor analysis. Barlett’s test of sphericity and Kaiser-Meyer-Olkin (KMO) tests are two statistical tests that determine suitability of data for factor analysis. Bartlett’s test of sphericity tests the null hypothesis that no relationships exist between any of the variables (items) (Nunnally & Bernstein, 1994c). If the Chi

square test is significant, it means there are discoverable relationships in the data and there is at least one factor (Ferguson & Cox, 1993; Nunnally & Bernstein, 1994c). If it is not found to be significant, the matrix should not be factor analyzed (Karpe, 2005; Pett, Lackey, & Sullivan, 2003a). The Bartlett's test in the questionnaire was highly statistically significant indicating a meaningful relationship between the items. Therefore, the null hypothesis (no relationships existed between any of items) was rejected. Kaiser-Meyer-Olkin's (KMO) measure of sampling adequacy is useful for evaluating factorability (Worthington & Whittaker, 2006). The KMO compares the magnitudes of the correlation coefficients to the magnitudes of the partial correlation coefficients (Pett et al., 2003a). It indicates the extent to which a correlation matrix actually contains factors or chance correlations between a small subset of items (Worthington & Whittaker, 2006). The KMO measure can range between 0 and 1 (Pett et al., 2003a). A value of .60 and higher is required for good factor analysis (Worthington & Whittaker, 2006). Above .90 is "marvelous", .80 is "meritorious", .70 is "just middling", and less than .60 is "mediocre", or "unacceptable" values. Factor Analysis was conducted both on 348 male and 253 female respondents. The KMO statistic for the questionnaire was considered "meritorious" for male respondents at .881 thus supporting the use of factor analysis for these in meritorious category data. Because satisfactory results were obtained with both tests, it is possible to proceed to extraction of the factors with confidence that the matrix derived from the data is appropriate for factor analysis (Ferguson & Cox, 1993). Factor analysis was used to construct the new factors. Bartlett's test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy are both tests that can be used to determine the factorability of the matrix as a whole. The results value of Bartlett's test of sphericity is significant ($p < 0.001$, $p = 0.000$) in table 2. Thus, based from the results, it is appropriate to proceed with Factor Analysis.

Table 2: KMO and Bartlett's Test of Sphericity of the Retailing Attributes by Male Respondents

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.881
Approx. Chi-Square	4692.096
Bartlett's Test of Sphericity	df
	190
	Sig.
	.000

Table 3 shows the rotated component matrix (also called the rotated factor matrix in factor analysis by male respondents) which is a matrix of the factor loadings for each variable onto each factor.

Table 3: Rotated Component Matrix of the Retailing Attributes by Male Respondents

	Rotated Component Matrix ^a				
	Component				
	1	2	3	4	5
Improvedquality		.706			
Reasonableprice		.788			
Varietyofbrands		.784			
Assortmentofmerchandise		.746			
Esayavailabilityofproducts		.588			
Properdisplayofproducts				.325	
Packaging				.453	
Exchangeoffacilities				.860	
Waranteeofproducts					.560
Bundlingoffers					.716
Pleasantambience	.710				
Betterlocation	.756				
Completesecurity	.747				
Niceinstorepromotions	.714				
Adequatedressing	.667				
Cleanlinessofstore	.541				
Childrenplayarea			.646		
Goodparking			.721		
Convinientshop			.660		
Trainingsales			.675		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

Tabachnick and Fidell [28] stated variables with factor loadings more than 0.45 were chosen in this study because loadings equals to 0.45 is considered average, whereas loadings 0.32 is considered less good. After performing Varimax Rotation Method with Kaiser Normalization, Factor 1 comprises of six items with factor loadings ranging from 0.541 to 0.756, Factor 2 comprises of five items with factor loadings ranging from 0.588 to 0.788, Factor 3 comprises of four items ranging from 0.646 to 0.721. Similarly, the fourth factor comprises of 3 items and the fifth factor has 2 items. These were labelled as (1) Store Enhancers (2) Core Product Attributes, (3) Secondary Store Attributes (4) Branding and (5) service quality. These five factors accounted for 68 per cent of variance.

After performing factor analysis on the views of male respondents, it was conducted on the views of female respondents.

Table 4: KMO and Barlett's Test of Sphericity of the Retailing Attributes by Female Respondents

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.829
Approx. Chi-Square	2076.286
Bartlett's Test of Sphericity df	190
Sig.	.000

Table 4 reveals that the KMO statistic for the questionnaire was considered "meritorious" for female respondents at .829 thus supporting the use of factor analysis for these in meritorious category data.

Table 5 shows the rotated component matrix (also called the rotated factor matrix in factor analysis by female respondents) which is a matrix of the factor loadings for each variable onto each factor.

Table 5: Rotated Component Matrix of the Retailing Attributes by Female Respondents

	Rotated Component Matrix ^a				
	Component				
	1	2	3	4	5
Improvedquality	.717				
Reasonableprice	.807				
Varietyofbrands	.704				
Assortmentofmerchandise	.576				
Esayavailabilityofproducts					.655
Properdisplayofproducts				.508	
Packaging					.743
Exchangeoffacilities				.648	
Waranteeofproducts				.847	
Bundlingoffers				.848	
Pleasantambience	.645				
Betterlocation	.673				
Completesecurity		.696			
Niceinstorepromotions		.691			
Adequatedressing		.653			
Cleanlinessofstore		.696			
Childrenplayarea			.660		
Goodparking			.839		
Convinientshop			.499		
Trainingsales		.489			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

After performing Varimax Rotation Method with Kaiser Normalization, Factor 1 comprises of six items with factor loadings ranging from 0.576 to 0.801, Factor 2 comprises of five items with factor loadings ranging from 0.489 to 0.696, Factor 3 comprises of three items ranging from 0.499 to 0.839. Similarly, the fourth factor comprises of four items and the fifth factor has 2 items. These were labelled as (1) Product Enhancers (2) Core Store Attributes, (3) Secondary Store Attributes (4) Display Factors and (5) Purchase Convenience. These five factors accounted for 72 per cent of variance.

CONCLUSIONS

From the study it is summarized that the mansumerism concept in retailing is clearly visible in the emerging retail formats of urban Odisha. As only 2% organized retailing has penetrated in Odisha, that is, the sole reason as to why males dominate the shopping pattern from these formats.

The results of the present study have implications for retailers targeting specific genders. The study is an attempt to understand the differences between genders and the dynamics of shopping in the emerging market of urban Odisha. The findings of this study support the objectives to a large extent. The findings show that there are gender differences in mall patronage. Seven of the eight demographic characteristics demonstrated significant differences between men and women. The findings of the present study have several other implications for retail managers. Since demographic factors influence shoppers attitude, it is important to match the socio-economic status of shoppers. The views of the respondents towards emerging retail formats is also a significant predictor. Therefore, retail managers must carefully portray the image of these formats to match the shoppers' need. Finally, a careful analysis of the shopping orientation will be needed. Overall, to address all these issues, it is necessary to promote the formats as brands.

References:

- [1] Bianchi, Constanza and Arnold, Stephen J. (2004), "An Institutional Perspective on Retail Internationalization Success: Home Depot in Chile", *International Review of Retail, Distribution, and Consumer Research*, 14(2), pp. 149-169.
- [2] Brown, Stephen (1987), "Institutional Change in Retailing: A Review and Synthesis", *European Journal of Marketing*, Vol. 21, No. 6, pp. 5 – 36.
- [3] CII-ATK (2006), *Retailing in India: Getting organized to drive growth*, November, New Delhi: Confederation of Indian Industry, Mumbai: A. T. Kearney Limited.
- [4] Dawson, John (2001), "Retailing at century end: Some challenges for management and research", *International Journal of Retail, Distribution and Consumer Research*, Vol. 10, No. 2, 119-148.
- [5] Franklin, A.W. (2001), "The impact of Wal-Mart's supercenter on supermarket concentration in U.S. metropolitan areas", *Agribusiness*, 17:105-114.
- [6] Goldman, Ariele, S. Ramaswami and Robert E. Krider (2002), "Barriers to the advancement of modern food retail formats: theory and measurement", *Journal of Retailing*, 78, 281-295.
- [7] Government of India (2005), *Economic Census of India*, Available at: http://mospi.nic.in/index_6june08.htm, Accessed on: March 15, 2011.
- [8] Kumar, S. Ramesh and Vishvas, Radhika (2010), "The old world of 'Kirana Shops' vs. new world of glitzy retail; a case study in an emerging market – The Indian context", *Research Paper 2010/01*, ISSN 0265 9778, Indian Institute of Management, Bangalore.
- [9] Lu, Sheng (2010), "Understanding China's Retail Market", *China Business Review*, online edition, Available at: <http://bit.ly/ms8mTS>, Accessed on: May 18, 2011.
- [10] McKinsey (2008), *The Great Indian Bazaar: Organised Retail Comes of Age in India*, August, Mumbai: McKinsey & Company, Available at: <http://bit.ly/js9bLZ>, Accessed on: May 20, 2011.
- [11] Miller, C.E., Reardon, J. and McCorkle, D. E. (1999), "The Effects of Competition on Retail Structure: An Examination of Intratype, Intertype, and Inter category Competition", *Journal of Marketing*, 63 (October), 107-120.
- [12] NielsenWire (2010), "Asia Pacific Retail: A Decade of Change, With More to Come", September 21, Available at: <http://bit.ly/bxHjHk>, Accessed on: January 16, 2011.
- [13] Paruchiri, Srikanth, Baum, Joel A.C. and Porter, David (2009) "The Wal-Mart Effect: Wave of Destruction or Creative Destruction?" *Economic Geography*, 85 (2), 209-236.
- [14] PwC (2011), *Strong and Steady: 2011 Outlook for the Retail and Consumer Products Sector in Asia*, PricewaterhouseCoopers, Available at: <http://bit.ly/jnlLha>, Accessed on: May 20, 2011.

- [15] Reardon, Thomas and Berdegué, Julio A. (2002), “The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development”, *Development Policy Review*, 20 (4), 371-388.
- [16] Singh, Namrata and Sharma, Samidha (2011), “Modern retail makes a big splash”, *Times of India*, online edition, May 20, Available at: <http://bit.ly/jviTHI> , Accessed on: May 21, 2011.
- [17] Srivastava, R.K. (2008), "Changing retail scene in India", *International Journal of Retail & Distribution Management*, 36 (9), 714-721.
- [18] Sternquist, Brenda and Chen, Zhengyi (2006), “Food retail buyer behavior in the People’s Republic of China: A grounded theory model”, *Qualitative Market Research: An International Journal*, 9, 3, 243-265.
- [19] Takeuchi, Hirotaka and Bucklin, Louis P. (1977), “Productivity in retailing: Retail structure and public policy”, *Journal of Retailing*, 56, 1 (Spring), 35–46, 94-95.
- [20] Time (1929), “Business & Finance: Piggly Wiggly Man”, *Time*, online edition, Feb. 25, Available at: <http://ti.me/7V2JzI>, Accessed on: May 21, 2011.
- [21] Traill, W. Bruce (2006), “The Rapid Rise of Supermarkets?”, *Development Policy Review*, 24 (2), 163-174.
- [22] Varman, Rohit and Costa, Janeen Arnold (2009), “Competitive and Cooperative Behavior in Embedded Markets: Developing an Institutional Perspective on Bazaars”, *Journal of Retailing*, Vol. 85, No. 4, 453-467.