CUSTOMER LOYALTY, REPURCHASE AND SATISFACTION: A META-ANALYTICAL REVIEW

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ABSTRACT

The purpose of this article is to investigate the relationship between customer loyalty, repurchase/repurchase intent and satisfaction in order to attempt to resolve the mixed views on these concepts. A quantitative review of loyalty-repurchase- satisfaction constructs was conducted to identify the strength and direction of the researched relationships and the influence of possible moderating factors affecting those relationships. The Hunter and Schmidt (1990) meta-analytical technique and software were employed. The results demonstrate that loyalty and satisfaction indicate strong positive relationships (0.54). Repurchase and satisfaction display a complicated relationship, which confirmed the view that satisfaction does not explain repurchase behavior. Repurchase intent and satisfaction display strong positive relationships in the meta-analysis (0.63) and moderator analyses. Loyalty and repurchase/repurchase intent indicate the strongest positive relationship (0.71) among all conducted analyses. This study provides value to managers dealing with customer satisfaction, loyalty, and repurchase by presenting a detailed overview of these three concepts, and relationships between them.

INTRODUCTION

Customer loyalty, repurchase and satisfaction are among the most researched concepts in academia and among the most important constructs in practice. Loyalty, repurchase and consumer satisfaction have a powerful impact on firms' performance by providing a competitive advantage (Edvardsson, Johnson, Gustafsson and Strandvik 2000; Lam, Shankar, Erramilli and Murthy 2004; Reichheld, Markey and Hopton 2000; Zineldin 2006), numerous loyal consumers (Mellens, Dekimpe and Steenkamp 1996; Zineldin 2006), and increasing customer satisfaction. Despite extensive research on the relationships between customer loyalty, repurchase and satisfaction, these constructs appear to be complex and multidimensional, and are, therefore, not well understood.

While one stream of loyalty- satisfaction research indicates that loyalty has a strong association with different aspects of consumer satisfaction (Ashley and Varki 2009; Boshoff 2005; Butcher, et al. 2001; Carpenter and Fairhurst 2005; Law, et al. 2004; Taylor and Hunter 2002; Yang and Peterson 2004), other researchers have suggested that not all aspects of loyalty are important to build consumer satisfaction (Floh and Treiblmaier 2006; Genzi and Pelloni 2004; Harris and Goode 2004; Kandampully and Suhartanto 2000; Shankar, et al. 2003). Oliver (1999) proposed six types of relationships between satisfaction and loyalty. All these relationships rise from different definitions and perspectives on satisfaction and loyalty. On one end of the spectrum, satisfaction and loyalty are two manifestations of t h e s a m e c o n c e p t . At t h e o t h e r e n d , satisfaction and loyalty are very distant. Oliver (1999) demonstrated that ultimate loyalty can totally encompass satisfaction, satisfaction and loyalty can overlap, but also that satisfaction does not necessarily

transform into loyalty and can indeed exist without the latter.

Loyalty-repurchase research recorded different observations as well. While a number of researchers argue that loyal consumers return to purchase goods or services (Taylor and Hunter 2002; Lee, at al. 2006), others have argued that high repurchase rates do not necessarily indicate loyalty, while low repurchase rates do not always indicate disloyalty (Dick and Basu 1994; Peyrot and Van Doren 1994; Rowley and Dawes 2000).

Establishing a direct link between repurchase and satisfaction ratings has not been easy for many organizations (Mittal and Kamakura 2001), and some researchers have demonstrated that this link can be weak (Homburg and Giering 2001; Kumar 2002; Quick and Burton 2000; Seiders et al. 2005; Shih and Fang 2005). Jones (2006) pointed out the importance of communicating the level of customers' satisfaction to the company's shareholders, either in the company's annual report, or in its letter to the shareholders, as an overall indication of the firm's performance. However, satisfaction by itself may not correlate with organizational performance. Customers may indicate that they are satisfied, but purchase goods and services elsewhere (Powers and Valentine 2008). On the other hand, the positive link between customer satisfaction and the profit of corporations was confirmed by a number of researchers (Anderson, Fornell and Lehmann 1994; Anderson and Mittal 2000; Edvardsson, et al. 2000; Fornell 1992; Hallowell 1996; Reichheld, et al. 2000; Soderlund and Vilgon 1999).

With all this confusing and contradictory evidence, additional research is needed to further the understanding of these constructs and their relationships (Leingpibul, et al. 2009).

The objective of a meta-analysis is to synthesize previously reported statistical findings. Although meta-analyses are frequently conducted for medical research studies, few marketing researchers have employed this type of analysis to investigate customer satisfaction. The few examples include Orsingher, et al. (2010) and Szymanski and Henard (2001).

The primary purpose of this study is to identify whether satisfaction leads to loyalty formation, which, in turn, leads to repurchase behavior. The result of this meta-analysis will help to determine the strength, magnitude, and direction of hypothesized loyalty-repurchase-satisfaction relationships. While all reported relationships are positive, the strength of the relationship does vary. Our research addresses existing conflicts in the literature, and attempts to resolve the existing mixed views on the studied concepts. Further, in the process of collecting studies for the quantitative analysis, we have identified the fact that there is a lack of published empirical work on the loyalty-repurchase relationship which some scholars consider especially important.

This article first provides an overview of the conceptual foundations of loyalty, repurchase and satisfaction, and their relationships. An overview of the meta-analysis technique is presented next with the database development and method of analysis. The results, research findings, discussion and the study implications are stated at the end.

CONCEPTUAL FRAMEWORK

The conceptual framework provides an overview of existing research on satisfaction-loyalty, loyalty-repurchase, and satisfaction-repurchase relationships, and identifies the need for conducting a meta-analysis.

Satisfaction-Loyalty

For years companies have invested significant resources to improve their customers' satisfaction (Durvasula, et al. 2004). Customer satisfaction indicates the

general health of the organization, its future prospects, and provides companies with many benefits including forming consumer loyalty, preventing customer churn, reducing marketing costs, and enhancing business reputation (Fornell 1992). The success of the firm's strategy depends on the company's ability to fulfill its promises to consumers, which in turn leads to forming long-term, profitable relationships (Carpenter and Fairhurst 2005). Chow and Zhang (2008) proposed that it is important for managers to identify satisfying product attributes from dissatisfying ones, because brand switching is more likely to occur as a result of dissatisfaction. Satisfaction, as an independent variable, is considered to be linked to consumer loyalty and repurchase behavior.

Loyalty is a multidimensional construct, which is defined and viewed differently by researchers. Consumer loyalty is comprised of three distinct constructs: behavioral loyalty, attitudinal loyalty, and composite loyalty (Taylor, et al. 2006). These constructs affect consumers' expectations, satisfaction (Leingpibul, et al. 2009) and repurchase behavior. In order to build loyalty and to retain consumers, some companies impose high switching costs, which in turn impede switching intentions (Lee and Romaniuk 2009). These switching costs negatively affect consumer relations with the provider. Taylor et al. (2006) identified that the problem lies in the disagreement on the definition of loyalty, due to the multitude of constructs.

Many scholars have concentrated on the investigation of the satisfaction-loyalty relationship (Anderson and Srinivasan 2003; Bloemer and Kasper 1995; Dixon et al., 2005; Genzi and Pelloni 2004; Mittal and Kamakura 2001). Despite these studies, Oliver (1999) stated that an inquiry into the relevant literature shows that the satisfaction-loyalty link is not well defined. Bloemer and Kasper (1995) indicated that many studies did not take into account the differences between various types of loyalty while investigating its relationship to satisfaction. Furthermore, researchers have also concentrated on satisfaction as the independent variable without taking into account different types of satisfaction.

Two main views emerged from the literature review of the satisfaction-loyalty relationship. The first view concluded that satisfaction is the main driver of consumer loyalty (Dixon et al., 2005; Fornell 1992; Genzi and Pelloni 2004; Mittal and Kamakura 2001; Szymanski and Henard 2001). Heitmann et al. (2007) stated that satisfaction positively affects loyalty, willingness to recommend, and word-of-mouth. Further, satisfaction affects future consumer choices, which in turn leads to improved consumer retention. Customers stay loyal because they are satisfied, and want to continue their relationship.

The second view of the satisfaction-loyalty relationship is that while consumer satisfaction may positively influence consumer loyalty, it is not sufficient to form loyalty (Julander, et al. 2003; Oliver 1999; Reichheld, et al. 2000). These scholars argue that although loyal consumers are most typically satisfied, satisfaction does not universally translate into loyalty. Satisfaction is viewed as a necessary step in loyalty formation, but it becomes less significant as loyalty begins to be gained through other mechanisms (Olsen 2007). Several researchers (Reichheld, et al. 2000; Suh and Yi 2006) reported that even a loyal, satisfied consumer is vulnerable to situational factors such as competitors' coupons or price cuts. Therefore, satisfaction is not likely to be the sole predictor of loyalty. Carpenter and Fairhurst (2005) suggest that satisfaction influences relative attitude, repurchase, and recommendation but has no direct effect on loyalty.

Oliver (1999) proposed six types of relationships between satisfaction and loyalty. All these relationships arise from different definitions and perspectives on satisfaction

and loyalty. On one end of the spectrum, satisfaction and loyalty are two manifestations of the same concept. On the other end, satisfaction and loyalty are very distant. Oliver (1999) demonstrated that ultimate loyalty can totally encompass satisfaction, satisfaction and loyalty can overlap, or there are occasions when satisfaction does not transform into loyalty and can exist without it. Oliver (1999) stated that loyalty emerges as a combination of perceived product superiority, personal fortitude, social bonding, and their synergistic effects.

Bloemer and Kasper (1995) proposed that the relationship between consumer satisfaction and brand loyalty is not simple and straightforward. The relationship between customer satisfaction and loyalty is strongly influenced by customer characteristics such as variety-seeking, age, and income (Homburg and Gierin 2001).

Overall, researchers agree that when consumers are completely satisfied they are less likely to defect or switch. Therefore, satisfaction is one of the important elements in creating consumer loyalty. However, an increase in satisfaction does not produce an equal increase in loyalty for all consumers (Soderlund and Vilgon 1999). The relationship between satisfaction and loyalty is neither simple nor linear, and satisfied customers may defect (Rowley and Dawes 2000). Rowley and Dawes (2000) stated that a customer's degree of involvement with a product is an important element in forming loyalty.

One explanation for variations in the satisfaction-loyalty relationship rests on the nature of the judgment tasks involved (Auh and Johnson 2005). Customers could be very satisfied with their experience and quality of the service and be loyal, but will not purchase it again due to different factors. Therefore, consumer repurchase behavior is one of the main concerns for companies in their pursuit of profits.

Loyalty-Repurchase

The concept of repurchase and the factors influencing it has been investigated by many scholars (Dick and Basu 1994; Ehrenberg and Goodhardt 1968; Evans and Gentry 2003; Jacoby and Kyner 1973; Law, Hui and Zhao 2004; Mittal and Kamakura 2001; Quick and Burton 2000; Seiders et al., 2005; Wanke and Fiese 2004). Repurchase is defined as a consumer's actual behavior resulting in the purchase of the same product or service on more than one occasion. The majority of consumers' purchases are potential repeat purchases (Peyrot and Van Doren 1994). Customers buy similar products repeatedly from similar sellers, and most purchases represent a series of events rather than a single isolated event. Retention is another common term for repurchase (Hennig-Thurau 2004; Narayandas 1998; Zineldin 2006), which is considered to be one of the most important variables in relationship marketing (Fullerton, 2005; Morgan & Hunt, 1994). While repurchase is the actual action, repurchase intent is defined as the customer's decision to engage in future activities with the retailer or supplier (Hume, Mort and Winzar 2007).

Two forms of repurchase are identified: the intention to re-buy (repurchase), and the intention to engage in positive word-of-mouth and recommendation (referral) (Zeithaml, et al. 1996). There have been discussions in the marketing research literature as to whether purchase intentions and past purchasing behavior are correlated with actual consumer behavior in the future (Dixon, et al. 2005). In effect, does repurchase intent actually result in repurchase?

Loyalty and repurchase are often-confused constructs (Hume, et al. 2007). This could be attributed to the multidimensional structure of loyalty, as well as to the numerous definitions of the loyalty concept.

Law, Hui and Zhao (2004, p. 547) use Oliver's definition of loyalty as "a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". In other words, they view loyalty as an attitude rather than a behavior. Behavioral loyalty is solely viewed as repurchase of the product or service. Dixon, et al. (2005) indicated that loyal customers are expected to consistently repurchase in spite of competitive efforts. Mellens, et al. (1996) reported that brand loyalty entails actual purchases of a brand, and verbal statements of preference are not sufficient to ensure brand loyalty. The consumer's disposition to repurchase is an essential element of loyalty (Law, et al. 2004).

Powers and Valentine (2008) have suggested that cumulative levels of satisfaction influence the consumer's loyalty to the product or service, which in turn, influences behavioral intentions including purchase behavior (Powers and Valentine 2008). Managers need to focus on marketing in order to ensure that they have satisfied customers, which ensure higher levels of repurchase behavior and an increase in loyal customers (Solvang 2007).

Satisfaction-Repurchase

Early studies in consumer behavior explored the relationship between repurchase and the level of satisfaction. However, this relationship is not straight forward. Mittal and Kamakura (2001) stated that the satisfaction-repurchase relationship can display variability due to three main reasons. The first includes satisfaction thresholds, which consist of satisfied consumers who have different levels of repurchase due to their different characteristics. The second includes response bias, which means that ratings obtained from the survey may not represent a true picture due to the different characteristics of consumers. The third includes nonlinearity, which means that the satisfaction-repurchase function may be nonlinear and vary for different consumers.

Tsai, Huang, Jaw and Chen (2006) reported that longitudinal and cross-sectional satisfaction-repurchase studies have demonstrated that satisfied consumers are more likely to continue their relationship with a particular organization than dissatisfied ones. This view is supported by a number of researchers (Anderson and Sullivan 1993; Davidow 2003; Deslandes 2003; Durvasula, et al. 2004; Eggert and Ulaga 2002; Fullerton 2005; Harris 2003; Hennig-Thurau 2004; Jones, et al. 2000; Mittal and Kamakura 2001; Preis 2003; Szymanski and Henard 2001).

In contrast, Olsen (2002) stated that despite the common view that satisfaction is linked to repurchase, few empirical studies can be found that relate satisfaction to actual repurchase behavior. and Kamakura (2001) indicated that establishing a direct link between repurchase and satisfaction ratings has not been easy for many organizations. In addition, the satisfaction-repurchase relationship can be affected by consumers' characteristics. Despite the identical ratings on satisfaction, a significant difference was observed in repurchase behavior, which was attributed to differences in consumer age, education, marital status, sex, and area of residency (Mittal and Kamakura 2001).

A number of factors complicate the satisfaction-loyalty-repurchase relationship. The problem exists that researchers do not consistently define loyalty across studies, which could be operationalized as behavioral, attitudinal, or composite (Taylor, et al. 2006). This creates a misunderstanding on how loyalty forms, and the strength of its relation to satisfaction and repurchase. Consumer satisfaction could occur during different stages of the shopping process (pre, during, and post), during purchase of different

types of goods (convenience, shopping, and specialty) (Bassi and Guido 2006), and in a traditional or online setting (Lee and Overby 2004). In addition, consumers consist of different types (Halstead et al. 2007), and they all have different levels of knowledge about the product (Hicks, et al. 2005), which affects their level of satisfaction.

Understanding the importance of a comprehensive review, our study attempts to summarize previously reported findings to explain the complex relationships between satisfaction, loyalty and repurchase. Does satisfaction have strong relationships with loyalty and repurchase? Does loyalty have a strong relationship with repurchase? What is the strength and the direction of the relationships uncovered in the various research projects published in the literature?

We believe that this article will provide practitioners with an improved understanding of what influences consumer satisfaction, loyalty and repurchase behavior toward a product or service. Knowledge of consumers' satisfaction, loyalty and repurchase behavior will enhance the practitioner's ability to develop more effective marketing strategies in the future (Leingpibul, et al. 2009).

METHODOLOGY

We use a meta-analysis technique in this study. It is a technique for summarizing and testing statistical results across many independent researchers' findings related to the same topic. The first step in conducting a meta-analysis is to collect studies and to extract information in order to create a database of individual research findings related to the investigated research topic. The second step in meta-analysis includes the conversion of collected statistical information to the same measurement scale, if needed. Field (2001, p. 162) indicated, "In meta-analysis, the basic principle is to calculate effect sizes for individual studies, convert them to a common metric, and then combine them to obtain an average effect size". The third step in meta-analysis includes conducting the meta-analysis procedure and analyzing the obtained results. Saxton (2006) indicated that meta-analysis tests whether findings from multiple studies, involving bi-variate analysis, agree or disagree in terms of the direction of association between variables and the strength of that relationship. In summary, the primary goal of meta-analysis is to address three general issues: central tendency, variability, and prediction (Johnson, Mullen and Salas 1995).

Step 1: Database Development

A rigorous and comprehensive search for relevant studies on the relationship between loyalty-satisfaction, repurchase-satisfaction, and loyalty-repurchase was conducted. Eighty published studies, which appeared to be suitable for conducting the meta-analysis, were identified with reported relationships on the key constructs. These studies were identified through search engines of electronic databases such as ABI/Inform, ProQuest, WilsonWeb, JSTOR, PsycINFO, UMI, and others by using key words including satisfaction, loyalty, or repurchase. Searches of the references found in the available studies were conducted in addition to the manual searches of top-ranked peer reviewed journals such as *the Journal of the Academy of Marketing Science, Journal of Marketing Research, Psychology & Marketing, Journal of Financial Services Marketing, Journal of Service Research, International Journal of Service Industry Management, Journal of Consumer Satisfaction/Dissatisfaction and Complaining Behavior, Management Science*, and others.

The identified studies were coded by two independent researchers into three separate databases: Loyalty-Satisfaction, Repurchase-Satisfaction, and Loyalty-Repurchase. The independently-compiled databases were compared for data

discrepancies and corrected. Due to the number of scholars who examined Repurchase Intent separately from Repurchase, the Repurchase-Satisfaction database was further divided into two: Repurchase-Satisfaction and Repurchase Intent-Satisfaction (see Table 1). Industries included large and small corporations, retail, banking, e-commerce, hotel, restaurants, cosmetics, recreational facilities, media, insurance, automotive, transportation, and others.

Table 1

Database Characteristics

	Total Number of Studies	Number of Reported Results (Correlations)	Total Number of Subjects
Loyalty-Satisfaction	32	82	153,150
Repurchase-Satisfaction	6	11	13,098
Repurchase Intent-Satisfaction	19	59	1,640,056
Loyalty-Repurchase	4	7	2,172

Not all identified studies were included in the database. Nineteen studies with incomplete information, studies with fewer than 20 subjects and studies with statistical measurements which could not be converted to the desired statistics were excluded from the database after additional review. The summary of the studies included in the meta-analysis is provided in Appendix A.

Step 2: The Conversion

F-distribution values, t-distribution values, or chi-squares with their corresponding degrees of freedom were converted to Pearson product-moment correlation coefficients. Not all statistical measurements could be converted to the desired statistics due to a lack of information available in the studies; therefore, several studies were excluded from the database. A few studies conducted two or more analyses under different conditions and reported more than one correlation coefficient. Therefore, the number of selected studies does not correspond exactly to the number of obtained correlation coefficients.

Step 3: Method of Analysis

Three constructs (loyalty, repurchase/repurchase intent, and satisfaction) were examined. The suggested sample size within individual studies should be at least 20 subjects (Ankem 2005; Hunter and Schmidt 2004; Saxton 2006).

Our research employed the Hunter and Schmidt (1990) meta-analytical approach and the Hunter and Schmidt software package for computations. This method weights individual correlations by the sample size and assumes that the correlations entered are independent. If this assumption is violated, it would not affect the calculated mean, but would cause an inaccurate calculation of the sampling error variance. Therefore, it could lead to possible distortions in significance

testing (Sundaramurthy, Rhoades and Rechner 2005). After the calculation of the mean weighted correlation across all studies, the standard deviation of the observed correlations was used to estimate the variability in the relationship. The sampling error, reliability of individual studies, and range restrictions contributed to estimate the true variability around the population correlation (Sundaramurthy, et al. 2005).

After all studies' individual effect sizes are calculated, these are combined to obtain an average or pooled effect size, which is a more precise indicator of the strength of the relationship between two variables across studies than the effect size of a single study (Ankem 2005). In the calculation of the pooled effect size, the individual effect sizes are weighted by sample size within each study to give more weight to the results of those studies with larger sample sizes. "Upon calculation of the aggregate effect size, significance in meta-analysis is generally gauged by computing 95% confidence intervals around the average effect size" (Ankem 2005, p.164).

Moderator Analyses

Hunter and Schmidt (1990) recommended conducting moderator analyses if the 90% credibility interval surrounding the mean corrected correlation includes zero, or if the study artifacts do not account for more than 75% of the variance across studies. Moderator analyses can provide additional insights into the research relationships and help in further refining the strength of those relationships. The employed technique weights individual correlations by the sample size and assumes that the correlations entered are independent (Hunter and Schmidt 1990). The variability in the relationship between studied variables was estimated by using the standard deviation of observed correlation (Sundaramurthy, et al. 2005). The statistical significance was assessed with a 95% confidence and 90% credibility

intervals. The moderator analyses were conducted to further investigate the relationships between the researched constructs.

Moderator variables are additional independent factors that can influence the relationship between the researched constructs (Hair, Black, Babin and Anderson 2009). The presence of moderator variables indicates that there may be more than one population involved. The variance in the effect sizes and the credibility intervals indicate whether moderators might be present. If the credibility or confidence intervals surrounding the mean corrected correlation include zero, then the mean corrected effect size is probably the mean of several subpopulations identified by the operation of moderators (Hunter and Schmidt 1990; Sundaramurthy, et al. 2005; Whitener 1990). In case the moderator is present, the population should be broken down into subpopulations. "If the effect size is the mean of several population parameters, or subpopulations identified by the operation of moderators, then the variance in observed effect sizes is due to both true variance in effect sizes and variance due to sampling error" (Whitener 1990, p. 316).

The collected studies used for the meta-analysis represent consumer samples from around the world. Jones, et al. (2010) reported that culture moderates the consumer shopping values and affects shopper satisfaction. One of the reasons, they explained, is that American consumers conduct their shopping activities in an advanced retail setting with a variety of goods, which is not the case in some other countries. Therefore, the geographic area of the collected samples was used as one of the moderators.

Marketing researchers usually investigate two types of customer satisfaction: product satisfaction and service satisfaction (Yoshida and James 2010). The differences between products and services have received much attention in academia. Products

outperform services in several categories including satisfaction and perceived quality (Edvardsson, et al. 2000). Consumers could be satisfied with the product performance but dissatisfied with the service components such as sales or pre- or post- purchase services. Therefore, these categories (product and service) were investigated as another moderator of the loyalty-repurchase-satisfaction relations.

Piercy (2010) suggested that business-to-business (B2B) companies might have different requirements and responses to customers and different market pressures for higher service and investments, as opposed to business-to-consumer companies (B2C). B2B management place a large focus on involvement by aligning sales operations with strategic direction, intelligence, integration of cross-functional relationships, internal marketing and infrastructure (Piercy, 2010). Those managerial emphases will be different for B2C companies due to the nature of the business. Therefore, the business setting was included as third moderator for the studied constructs.

Moderator analyses were conducted by dividing the total sample into three main sub-groups based on the specific factors, which were identified through the literature review and the compiled databases (Sundaramurthy, et al. 2005). Separate analyses for the identified factor were conducted for each sub-group:

1. The geographic area of the collected sample (North America, Europe, and Other)

2. The category (Product and Service)

3. The business setting (B2B and B2C).

Due to the small number of identified studies conducted in the B2B setting, the B2B moderator was subsequently eliminated.

The Hunter and Schmidt (1990) software package was utilized to compute the following statistics: the total sample size; correlations (observed and corrected); standard deviations (observed, residual, and corrected); and the percent of variance attributed to the sampling error.

RESULTS

Loyalty-Satisfaction

The results of the Loyalty-Satisfaction meta-analysis are displayed next in Table 2. The mean observed correlation between loyalty and satisfaction was 0.54. The sampling error accounted only for 1.02% of the observed variance, indicating the presence of moderator variables. The finding of statistical significance at the 95% confidence level indicated that loyalty and satisfaction correlations fall within a 0.23-0.85 interval. Neither the credibility interval nor the confidence interval included zero, which indicates that the observed relationship is consistently positive.

Table 2

Loyalty-Satisfaction Meta-Analysis and Moderator Analyses

Measure	Meta-Analysis	Moderators:			Moderators:	
		North America	Europe	Other	Product	Service
Sample size	153,150	125,655	22,488	5,007	7,642	145,504
Number of correlations	82	31	36	15	15	67
Observed correlation	0.54	0.51	0.41	0.6	0.47	0.55
Observed SD	0.16	0.21	0.17	0.15	0.17	0.16
%Variance attributable to SE	1.02%	0.30%	3.63%	5.86%	4.12%	0.88%
SD residual	0.16	0.21	0.17	0.14	0.17	0.1592
Corrected correlation	0.54	0.51	0.41	0.6	0.47	0.5476
SD of corrected r	0.16	0.2	0.17	0.14	0.17	0.1573

Moderator analyses were conducted to further clarify the strength of the loyalty-satisfaction relationship. Moderator analyses were conducted on two identified factors: the geographic area of the collected sample (North America, Europe, and Other) and the category (product and service) (see Table 2). "Other" factor included Australia, Cyprus, South-Africa, Hong Kong, Korea, and Malaysia. The majority of the sample was collected in the B2C setting (82 versus 3). As such, the B2B moderator was not investigated, and the results of the B2C setting are assumed to be similar to the already-obtained loyalty-satisfaction meta-analysis results.

The results indicate that the strongest relationship between loyalty and satisfaction is displayed by the "Service" factor, with mean correlation of 0.55. The large percentage of unexplained variances for the geographic area factor might indicate the possible presence of additional factors moderating the observed results.

The finding of a statistical significance at the 95% confidence level for the Geographic Area moderators indicated that loyalty and satisfaction correlations for the North America factor fall within a 0.11-0.92 interval; Europe falls within a 0.08-0.74 interval; and the "Other" factor falls within a 0.32-0.87 interval. The finding of statistical significance at the 95% confidence level for the Category factor indicates that loyalty and satisfaction correlations fall within a 0.15-0.80 interval for the product category, and within a 0.24-0.86 interval for the service category. Neither the credibility interval nor the confidence interval for all the conducted moderator analyses include zero, which indicates that the observed relationships between loyalty and satisfaction are consistently positive for those 5 moderators.

Repurchase-Satisfaction

Results of the meta-analysis for repurchase and satisfaction are displayed in the Table 3.

Table 3

Repurchase-Satisfaction Meta-Analysis and Moderator Analyses

Measure	Meta-Analysis	Moderators:		Moderators:	
		North America	Europe	Product	Service
Sample size	13,098	2,115	5,917	4,940	3,092
Number of correlations	11	3	7	6	4
Observed correlation	0.56	0.11	0.4	0.34	0.3
Observed SD	0.35	0.11	0.2	0.03	0.29
% Variance attributable to SE	0.32%	11.26%	2.13%	3.47%	1.33%
SD residual	0.35	0.11	0.2	0.16	0.28
Corrected correlation	0.56	0.11	0.4	0.34	0.3
SD of corrected r	0.34	0.11	0.2	0.16	0.3

The mean correlation between repurchase and satisfaction is 0.56. The percentage of observed variance attributed to the sampling error is 0.32%, which indicates the presence of moderator variables. The 95% confidence and the 90% credibility intervals for the repurchase-satisfaction relationship did include zero. The finding of statistical significance at the 95% confidence level indicates that there is a 5% chance that no relationship between the repurchase and satisfaction exists. A small sample size of 11 correlations resulted in a large standard deviation, which makes the confidence interval so wide that it includes zero. No negative correlations were observed in the raw data. Therefore, it is reasonable to assume that any relationship that exists is positive.

Moderator analyses were conducted to further clarify the strength of the researched repurchase-satisfaction relationship (Table 3). Moderator analyses were conducted on two factors: the geographic area of the collected sample (North America and Europe); and the category (product and service). There were no samples from other regions. The business setting factor (B2B and B2C) was not examined because all collected studies were conducted in the B2C setting only.

The strongest relationship between repurchase and satisfaction for moderators is displayed by the Europe factor, with a mean correlation of 0.4. The large percentage of unexplained variances for the North America geographic area might indicate the possible presence of additional factors moderating the observed results.

The 95% confidence and 90% credibility intervals for the repurchase-satisfaction relationship for the North America factor did include zero. The finding of statistical significance at the 95% confidence level indicated that there is a 5% chance that no relationship between the repurchase and satisfaction researched constructs exists for the North America factor. A small sample size of only three correlations resulted in a large standard deviation, which makes the confidence interval so wide that it includes zero. No negative correlations were observed in the raw data. Therefore, it is reasonable to assume that any relationship that exists is positive.

Neither the credibility interval nor the confidence interval for Europe and Product moderators include zero, which indicates that the observed relationship is consistently positive. The finding of significance at the 95% confidence level indicates that repurchase and satisfaction correlations for Europe fall within a 0.02-0.78 interval.

In contrast, confidence and credibility intervals for the service moderator did include zero. In part, these results might be due to the small samples which make the analysis somewhat unstable. The finding of statistical significance at the 95% confidence level indicates that there is a 5% chance that no relationship between the repurchase and satisfaction researched constructs exists for the service category. A small sample size of only 4 correlations resulted in a large std. deviation, which makes the confidence interval so wide that it includes zero. No negative correlations were observed in the raw data; therefore, any relationship that exists is positive.

Repurchase Intent - Satisfaction

The results of the analysis for repurchase intent and satisfaction are displayed next in Table 4.

Table 4
Repurchase Intent-Satisfaction Meta-Analysis and Moderator Analyses

Measure	Meta-Analysis	Moderators:		Moderators:		Moderator:
		North America	Asia	Product	Service	B2C
Sample size	1,640,056	1,610,189	6,848	1,607,438	32,618	1,636,989
Number of correlations	59	40	16	29	30	46
Observed correlation	0.63	0.64	0.51	0.63	0.48	0.63
Observed SD	0.04	0.04	0.17	0.03	0.12	0.04
% Variance attributable to SE	0.67%	0.72%	4.46%	0.56%	3.57%	0.59%
SD residual	0.04	0.04	0.17	0.03	0.12	0.04
Corrected correlation	0.63	0.64	0.51	0.64	0.48	0.63
SD of corrected r	0.04	0.04	0.16	0.04	0.12	0.04

The mean correlation between repurchase intent and satisfaction was 0.63, which is significant and strong. The percent of the observed variance attributable to the sampling error was 0.67%, which indicates that there are other factors moderating the observed results. The repurchase intent-satisfaction relationship is consistently positive as indicated by the credibility interval and the confidence interval, which did not include zero. The finding of significance at the 95% confidence level indicates that repurchase intent and satisfaction correlations fall within a 0.55-0.72 interval. The satisfaction construct is clearly a strong, positive indicator of repurchase intent.

To further investigate this relationship (Table 4), moderator analyses were conducted on three factors: the geographic area of the collected sample (North America and Asia); the category (product and service); and the business setting (B2B and B2C). Once again, due to the small sample size in of the B2B category (3,434), this category was eliminated from the analysis. No samples from European countries were presented. The strongest relationship between repurchase intent and satisfaction moderators is displayed by the North America factor, with mean correlation of 0.64. The finding of statistical significance at the 95% confidence level indicates that repurchase intent and satisfaction correlations for North America fall within a 0.57-0.70 interval, and within a 0.19-0.83 interval for Asia. Neither the credibility interval nor the confidence interval include zero for both geographic areas, indicating that the observed relationship is consistently positive.

Most studies in the product category were conducted in the auto industry. The finding of statistical significance at the 95% confidence level indicates that repurchase intent and satisfaction correlations for the product category fall within a 0.57-0.70 interval, and within a 0.24-0.71 interval for the service category. Neither the credibility interval nor the confidence interval include zero, which indicates that the observed relationship is consistently positive.

Table 5
Loyalty-Repurchase/Repurchase Intent Meta-Analysis

Measure	Meta-Analysis
Sample size	2,172
Number of correlations	7
Observed correlation	0.71
Observed SD	0.11
% Variance attributable to SE	6.61%
SD residual	0.11
Corrected correlation	0.71
SD of corrected r	0.11

Meta Analysis

Loyalty-Repurchase/Repurchase Intent

The results of the conducted Loyalty-Repurchase/Repurchase Intent meta-analysis are displayed in Table 5

The mean correlation between loyalty and satisfaction is 0.71. The sampling error accounts for a 6.61% of the observed variance. Neither the credibility interval nor the confidence interval includes zero, which indicates that the observed relationship is consistently positive. The finding of statistical significance at the 95% confidence level indicates that loyalty and repurchase/repurchase intent correlations fall within a 0.50-0.91 interval.

DISCUSSION

While satisfaction has been a widely researched topic in the marketing literature, the number of studies that actually met the criteria of meta-analysis (reported statistics of a relationship between satisfaction-loyalty-repurchase) was surprisingly small. Most of the identified studies focused on the relationship between satisfaction and loyalty. Olsen (2002) was correct in that despite the common view that satisfaction is linked to repurchase, few empirical studies can be found that relate satisfaction to actual repurchase behavior. From a firm's perspective, this aspect is critical. The purpose of a meta-analysis is to provide a quantitative review of the strength and direction of a set of relationships, in this case between satisfaction-loyalty-repurchase. The moderator analyses further investigate the research constructs and help to identify additional areas that may need to be explored.

The summary of the observed correlations for the researched constructs is presented in Table 6.

Table 6

The Observed Correlations

Constructs	Meta-Analysis	Moderators:			Moderators:		Moderator:
		North America	Europe	Other	Product	Service	B2C
Loyalty-Satisfaction	0.54	0.51	0.41	0.6	0.47	0.55	0.54
Repurchase-Satisfaction	0.56[1]	0.11[1]	0.4	n/a	0.34	0.30[1]	0.56
Rep Intent-Satisfaction	0.63	0.64	n/a	0.51	0.64	0.48	0.63
Loyalty-Rep/Rep Intent	0.71						

[1] Confidence intervals include zero

In both the meta-analysis and the five moderator analyses, loyalty and satisfaction reveal strong positive relationships. The strongest relationship between loyalty and satisfaction appears to be within the "Other" geographic region factor (0.60), followed by the "Service" moderator (0.55). The results confirmed the view that satisfied consumers do display loyalty. This is an important point for practitioners.

The repurchase and satisfaction constructs display a complicated relationship. The correlation coefficient for the overall meta-analysis is 0.56. However, the 95% confidence interval and 90% credibility interval include zero, indicating that there is a small likelihood that those constructs are not related at all. The small sample size collected for the meta-analysis (11) resulted in a large standard deviation, which makes the confidence intervals wide enough to include zero. The moderator analyses for North-America and the Service factors displayed at the 95% confidence interval also included zero. The collected sample sizes were 3 and 4 respectively, which resulted in large confidence intervals. The obtained results for the repurchase-satisfaction relationship confirmed Szymanski and Henard's (2001) observation about the failure of satisfaction to explain repurchase behavior. Satisfaction is a multifaceted construct; therefore, some aspects of satisfaction are more predictive of repurchase than others.

The meta-analysis and the moderator analyses indicate that repurchase intent and satisfaction display strong positive relationships. Generally, satisfied customers do show a strong intent to repurchase. This is another important point for practitioners.

The difference between repurchase intent and repurchase and satisfaction relationships could be explained by the large sample size for repurchase/repurchase intent-satisfaction studies that came from the U.S. auto industry, which represents the sale of expensive items (cars). Therefore, consumers' actual behavior could be heavily affected by auto deals and rebate offers. For example, consumers could be satisfied with one car make but due to a promotion might actually purchase another make.

Both the meta-analysis and the moderator analyses indicate that loyalty and repurchase/repurchase intent indicate the strongest positive relationship (0.71) of all the relationships studied. These results confirmed the view that loyalty and the repurchase/repurchase intent constructs are positively linked.

RESEARCH LIMITATIONS

This study has several limitations. First, meta-analysis studies were collected from peer-reviewed publications by using internet search engines, manual searches, and other references. This research did not include studies that partially reported needed statistics, or statistics that cannot be converted to correlation coefficients. No unpublished work was identified or included in the study either. Second, the moderator analyses were conducted only on three identified criteria: geographic region of the collected sample; the category (product and service); and the business setting (B2C). Third, small sample sizes were collected for the repurchase-satisfaction meta-analysis (11), repurchase-satisfaction moderator analyses for North America (3) and Service (4) factors.

This resulted in large standard deviations, which made confidence intervals wide enough to include zero. Additional research needs to be done in the repurchase-satisfaction area perhaps by looking at the size of the purchase.

IMPLICATIONS OF THE STUDY

Most of the identified studies were collected in the area of loyalty-satisfaction, which displayed strong and moderately strong relationships with the strongest occurring for the Service moderator (see Table 6). While the direct relationship between loyalty and customer satisfaction has been shown to be complex and asymmetric (Yu and Dean 2001), our meta-analysis confirmed that a relatively strong correlation exists between these concepts. In fact, it would seem counterintuitive to suggest that dissatisfied customers would remain loyal. The critical question for firms, however, is "Does satisfaction lead to repurchase?" Here the answer is clouded by two issues.

First, most of the studies identified examined satisfaction and repurchase intent, not actual repurchase, and the number of studies looking at the relationship between intent and repurchase is too small to draw conclusions about the strength of this relationship. If highly satisfied customers are likely to make future purchases (Zeithaml et al. 1996) and if it is cheaper to retain existing customers than attract new customers (Yu and Dean 2001), then this final link in the chain (satisfaction to loyalty to intent to repurchase) is an important one. This is consistent with Mittal and Kamakura's (2001) observation that the relationship between satisfaction and repurchase is more complicated, can result in no correlation, and can be moderated by several factors. The relationship between customer satisfaction and repurchase is assumed to be positive, but vary between products, industries, and situations (Olsen, et al. 2005).

Second, research is not clear on when less-than-satisfied customers might repurch-ase. Lack of competition or lack of knowledge about alternatives or switching barriers can all lead less-than-satisfied customers to repurchase. In these situations, the firm needs to understand when improving satisfaction will actually increase sales. While this study confirmed strong positive relationships between loyalty and repurchase/repurchase intent, the strongest among all conducted analyses, the issue of relatively few studies in this area remains.

Consumers' geographic location, product vs. service companies, and the business setting should be taken into account when developing marketing strategies. Jones et al. (2010) highlighted the importance of culture, which moderates the consumer shopping values. Among the product/service moderators, the strongest link was found between repurchase intent and satisfaction for the product category, followed by the loyalty-satisfaction link for the service category. The difference could be explained in that product manufacturing creates inventory, however,

services are only produced when needed. The research finding is consistent with the Edvardsson et al. (2000) observation that companies working with physical products do not make money on loyalty per se but rather they make money on customer satisfaction. Service companies attempt to foster consumer loyalty by offering them loyalty programs such as frequent flyer miles for airlines.

The overall research results support the view that while the loyalty-satisfaction-repurchase intent link is straight forward, the satisfaction and repurchase link might not be. Customer loyalty, satisfaction and repurchase are strong indicators of how people will act in the future, and if customers will actually return to the same company again (Edvardsson et al. 2000). This study aids academicians and practitioners to develop more effective organizational strategies, which should lead to better positioning in order to achieve overall competitive advantages (Leingpibul et al. 2009).

CONCLUSION

Many studies independently examined different combinations of relationships and the present research synthesizes previously reported findings. Despite the reported mixed results on loyalty-repurchase-satisfaction relationships collected from a large number of published empirical studies, the meta-analysis findings suggest that strong positive relationships exist between the researched constructs. However, these relationships are also moderated by different factors, including the collected samples' geographic regions, the category (products versus service), and the business setting. Overall, loyalty is positively linked to repurchase and satisfaction, while satisfaction is positively linked to repurchase intention.

The meta-analysis contributes to the growing knowledge of the relationships between loyalty, repurchase, and satisfaction

by assessing the current state of the empirical research on those three variables using meta-analysis. This research addressed the existing gap in the literature, and attempted to resolve the existing mixed views on the studied concepts.

This research is important to academicians as well as practitioners. First, while many studies independently examined different combinations of relationships between loyalty, repurchase, and satisfaction, this research synthesized the previously reported findings. The meta-analytical technique identified the true relationships between the studied variables and their directions. This study provides value to managers dealing with consumer satisfaction, loyalty, and repurchase by presenting a detailed overview of those three concepts, and the relationships between them. Despite some of these relationships not being very straight forward, and affected by many internal and external factors, as the literature review suggests, the overall picture reveals the positive link between loyalty, repurchase intent, and satisfaction. The nature of the industry, company size, and situational factors largely affect consumers' loyalty, satisfaction, and the repurchase rate.

Managers need to take into consideration many factors before making a decision where to invest and formulate a marketing strategy: either in creating consumer loyalty, increasing consumer satisfaction, increasing repurchase rate, or all three at the same time. Our meta-analysis confirmed that satisfied consumers do display strong loyalty and a higher repurchase intention rate; however, the relationship between satisfaction and actual repurchase rate is more complicated.

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APPENDIX A

SUMMARY OF STUDIES INCLUDED IN THE META-ANALYSIS

		Loyalty-Satisfaction Relationship	Experimental Setting		
	Authors	Strength	Geography	Setting	
1	Alonso, 2000	Moderate and weak	North America	Telecommunication	B2C
2	Andreassen and Lindestad, 1998	Strong	Norway	Insurance industry	B2C
3	Ball et al., 2003	Strong and moderate	Portugal	Banking industry	B2C
4	Boshoff, 2005	Strong	South-Africa	Banking industry	B2C
5	Butcher et al., 2001	Strong	Australia	Service industry	B2C
7	Carpenter and Fairhurst, 2005	Strong	North America	Products	B2C
8	Dixon et al., 2005	Strong	Australia	Retail industry (online)	B2C
9	Edvardsson et al., 2000	Strong and moderate	Sweden	Product & services	B2C
10	Floh and Treiblmaier, 2006	Moderate	Austria	Banking industry (online)	B2C
11	Fornell et al., 1996	Strong	North America	Different economic sectors	B2C
12	Genzi and Pelloni, 2004	Strong and weak	Italy	Service: fitness center	B2C
14	Hallowell, 2006	Strong and moderate	North America	Banking industry	B2C
16	Harris and Goode, 2004	Strong and weak	UK	Online consumers	B2C

17	Huber and Herrmann, 2001	Strong, moderate and weak	Germany	Auto industry	B2C
19	Johnson et. al., 2001	Moderate and weak	Norway	Service industries	B2C
20	Kandampully and Suhartanto, 2000	Weak	Australia	Hotel industry	B2C
21	Karatepe and Ekiz, 2004	Strong	Cyprus	Hotel industry	B2C
22	Law et al., 2004	Strong	North America	Restaurant	B2C
23	Lee and Overby, 2004	Strong	North America	Retail industry (online)	B2C
24	Olsen and Johnson, 2003	Strong and moderate	Norway	Banking industry	B2C
25	Olsen et al., 2005	Strong, moderate and weak	Norway	Product: seafood	B2C
26	Shankar et al., 2003	Strong, moderate and weak	North America	Lodging industry	B2C
27	Suh and Y, 2006	Strong	Korea	Products	B2C
28	Taylor and Hunter, 2002	Strong	North America	Service: e-CRM	B2C
29	Vickery and Droge, 2004	Strong	North America	Service: logistics	B2B
30	Wahid and Ramayah, 2003	Strong	Malaysia	E-commerce	B2B
31	Yang and Peterson, 2004	Strong	Hong Kong	Banking industry (online)	B2C
32	Yu and Dean, 2001	Strong	Australia	Higher Education	B2C

Strong relationships with correlations above 0.45; moderate between 0.3-0.45, and weak relationships with correlations below 0.3

REPURCHASE INTENT-SATISFACTION RELATIONSHIP

EXPERIMENTAL SETTING

	Authors	**Strength**	**Geography**	**Setting**	
1	Anderson and Sullivan, 1993	Strong	Sweden	Variety of industries	B2C
2	Davidow, 2003	Strong	North America	Service (complains)	B2C
3	Deslandes, 2003	Strong	Caribbean	Travel industry	B2C
4	Eggert and Ulaga, 2002	Strong	Germany	Service (supplier services)	B2B
5	Fullerton, 2005	Strong	North America	Retail	B2C

6	Harris, 2003	Strong	Multi-countries	Complaint	B2C
7	Jones et al., 2000	Strong	North America	Banking services or hairstyling/barber services	B2C
8	Kim, 2004	Strong and moderate	Korea	Online MIS, marketing and e-commerce	B2C
9	Kumar, 2002	Moderate and weak	North America	Supplier	B2B
10	Mittal and Kamakura, 2001	Strong	North America	Auto industry	B2C
11	Preis, 2003	Strong	North America	Supply management	B2B
12	Quick and Burton, 2000	Moderate and weak	North America	Auto industry	B2C
13	Seiders et al., 2005	Strong	North America	Retail	B2C
14	Shih and Fang, 2005	Strong and weak	China	Retail (online)	B2C
15	Soderlund and Vilgon, 1999	Moderate	Europe	Wholesaler	B2B
16	Spreng et al., 1995	Strong	North America	Service	B2C
17	Taylor and Hunter, 2002	Strong	North America	Technology	B2C
18	Tsai et al., 2006	Moderate	Taiwan	Retail (online)	B2C
19	Turel and Serenko, 2004	Strong	North America	Telecommunication	B2C

REPURCHASE-SATISFACTION RELATIONSHIP

1	Durvasula et al., 2004	Strong	Singapore	Insurance industry	B2C
2	Hennig-Thurau, 2004	Strong	Germany	Retail and travel industries	B2C
3	Homburg and Giering, 2001	Strong, moderate and weak	Germany	Auto industry	B2C
4	Seiders et al., 2005	Weak	North America	Retail	B2C
5	Szymanski and Henard, 2001	Strong	Global	Variety of industries	B2C/B2B
6	Tsiros and Mittal, 2000	Moderate	North America	Computers	B2C

LOYALTY-REPURCHASE RELATIONSHIP

1	Lee et al., 2006	Strong	France	Telecommunication	B2C
2	Newman and Werbel, 1973	Strong and moderate	North America	Appliances	B2C
3	Peyrot and Van Doren, 1994	Weak	North America	Auto industry	B2C
4	Taylor and Hunter, 2002	Strong	North America	Service: e-CRM	B2C

Strong relationships with correlations above 0.45; moderate between 0.3-0.45, and weak relationships with correlations below 0.3