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RAISING THE VALUE OF LOYALTY PROGRAM DATABASES

Dr. Ronald B. Larson

Mid-America Consultants International, Fargo, ND, USA

Abstract

Many marketers have invested in loyalty programs to direct incentives at key buyers and to analyze customer transactions. Because many buyers do not join the programs, incomplete customer databases may result in poor business decisions. This research uses a literature review and two direct mail surveys to find options for encouraging people to join more programs. Prior literature was reviewed to identify challenges faced by loyalty programs and possible tactics for enhancing program participation. Direct mail surveys of consumers in the Midwest region of the US and ordered probit regressions were used to identify variables related to higher loyalty program participation by consumers. Education and income were positively linked to participation while technological anxiety was negatively related. If marketers can reduce customer technological anxiety and encourage more buyers to participate (especially less-educated and lower-income customers), database coverage and the quality of decisions based on the data would improve.

Keywords: *Privacy concern, Technology anxiety, Information protection, Frequent customer program, Frequent shopper card.*

INTRODUCTION

Many firms use loyalty programs to encourage customers to buy their goods and services. Consultants who worked with retailers and their loyalty programs believed that the data generated by these programs has been particularly valuable for customer relationship management initiatives (Martin et al., 2020). The perceived benefits contributed to a sharp increase in programs. For example, memberships in US electronic grocery loyalty programs grew from 135.5 million in 2006 to a peak of 173.72 million in 2010. However, they fell to 142.4 million in 2016, the last year of the Colloquy Loyalty Census (Fruend, 2017). Part of this decline was due to program cancellations by some supermarket chains including Albertsons, Shaw's, Star Market, Acme, Jewel-Osco, Pathmark, and Waldbaum's (Karolefski, 2015). These chains apparently were disappointed with the direct effects and believed that their customer databases did not offer enough value to compensate.

Studies have found that loyalty programs can change consumer choices (Lundberg & Lundberg, 2010; Huang & Chen, 2010; Marques et al., 2017; Rossi, 2018; Alshurideh,

2019; Yoo et al., 2020). The widespread use of loyalty programs creates a presumption that they are profitable. When firms introduced loyalty programs, their stock prices tended to rise (Faramarzi & Bhattacharya, 2021). Case studies and profit comparisons over time suggest that programs can be profitable (Lal & Bell, 2003; Chaudhuri et al., 2019). A few grocers adopted a controversial strategy: boost purchases by their best buyers and reduce transactions by lower-volume shoppers by rewarding only at high-volume buyers (i.e., firing their worst customers; Young, 2003; Gallagher, 2004). However, changing high-volume buyer behavior is difficult. Volume gains generated by programs usually come from light buyers (Lal & Bell, 2003; Liu, 2007; Allaway et al., 2014). Therefore, loyalty program sponsors may want to adjust their incentives to attract more light users.

Several US supermarkets with loyalty programs claimed that members were responsible for between 60–90% of their sales (Raphel, 1990; Nannery, 1999; Lal & Bell, 2003; Moses, 2005; Camron, 2020). One report put the average for US grocers at 55% (Stoneback, 1997). If similar results were found in other industries, a significant portion of sales (and much of it to light buyers) would not be covered in customer databases.

Some loyalty programs produced disappointing results (Dowling & Uncles, 1997; Skogland & Siguaw, 2004; McEwen, 2005; Meyer-Waarden & Benavent, 2006; Nunes & Dreze, 2006; Lacey, 2009; Kim et al., 2009; Murthi et al., 2011; Lin & Bennett, 2014; Filipe et al., 2017). In a survey of 325 marketing executives about their loyalty programs, using a zero to ten scale, only 16 % rated their programs a 9 or a 10. About 27% said their programs deserved a score of 5 or less (International Institute for Analytics, 2014). Many consumers have tired of the concept, almost 90 % of social media sentiment on loyalty programs was negative (Taylor et al., 2015).

The first eight items in Table 1 summarize some reasons why programs underperform expectations. Marketers may underestimate program costs. If they make changes to limit their expenses or shut down programs, customers may be disappointed. Program operators often focus on sales revenue, rewarding those who currently spend the most and ignoring customers who are profitable but are not heavy buyers or who may be profitable in the future (e.g., small firms, young families). It is difficult to select incentives that appeal to heavy users without angering those who fail to qualify. Programs may raise top customer expectations for more rewards and better service in the future. If competitors also have programs, reward costs may escalate to keep the best customers. Heavy buyers often join multiple programs and select the best offers from each, reducing the benefits from each program.

TABLE 1. LIMITATIONS WITH ELECTRONIC CUSTOMER LOYALTY PROGRAMS

1. Marketers may underestimate the high setup and operation costs (Cigliano et al., 2000; Tenser, 2006).

   Data acquisition and maintenance costs can be high.

   To cover program costs, product price increases put firms at a competitive disadvantage.

   Key lessons learned early from customer data, but firms must bear long-term program costs.

2. Programs are difficult to change or shut down (McCall & McMahon, 2016; Melnyk & Bijmolt, 2015).

3. Marketers may have difficulty identifying and attracting profitable prospects.

   Firms focus on heavy users instead of targeting light users who may be more profitable (Wansink, 2003).

   The profit potential of "butterflies" and "barnacles" is ignored (Reinartz & Kumar, 2002).

4. Programs may look backward (e.g., overemphasize retention, underemphasize acquisition), use the metrics that are not associated with profits (Brierley, 2012), or confuse past customer profitability with future profit potential.

5. Marketers may be unable to change the long-term purchase behaviors of heavy users (Sharp & Sharp, 1997; Magi, 2003; Meyer-Waarden & Benavent, 2009; Allaway, et al., 2014).

6. Designing effective program rewards that satisfy members is challenging (Jang & Mattila, 2005; Wendlandt & Schrader, 2007; Demoulin & Zidda, 2009).

   Rewards may lack aspirational value, be too hard to earn, or be too difficult to receive.

   Incentive inequity can create betrayal and jealousy effects (Feinberg et al., 2002; Lacey & Sneath, 2006).

7. Loyalty programs raise customer expectations and create long-term liabilities (Shugan, 2005).

8. Programs by competitors may generate reward escalation, reducing the net benefits from a program (Liu & Yang, 2009).

   Customers may join many programs and "cherry-pick" (Bellizzi & Bristol, 2004).

9. Program databases do not reflect the preferences of all customers (Cortinas et al., 2008; Azeem et al., 2018; Vuorinen et al., 2020).

   Inaccurate entries on applications and other missing data create biases.

10. Programs encourage customers to tradeoff benefits for privacy concerns (Sayre & Horne, 2000; Gomez et al., 2012; SDL, 2014; Rainie & Duggan, 2015; Sides et al., 2019).

    Privacy concerns may limit participation and add costs to protect data security.

If high-quality customer data help firms make smarter decisions, this could compensate for program underperformance. Data issues, the last two items in Table 1, are the focus of this study. Customer data analyses usually omit transactions by non-members. For example, a supermarket chain in the Southwest region of the US had 57,650 loyalty program members (i.e., customers who used their loyalty card on multiple shopping trips) that were divided into six segments (Allaway et al., 2006). However, purchases by non-members (customers who did not request a card and nearly 20,000 shoppers who only used their loyalty card once) were excluded. Researchers have found that non-members have different preferences and buying patterns than members (Smith et al., 2003; Demoulin & Zidda, 2008; Meyer-Waarden,

2008; Azeem et al., 2018). Omitting non-members creates data coverage issues and may introduce biases. A study of 10 categories sold by a Spanish hypermarket demonstrated that member purchases were not good proxies for the average shopper (Cortinas et al., 2008). For this store, the estimated effects of price discounts based on member data were too high in three categories and too low in two categories. Brand preference estimates were too low in five categories and too high in two categories. Preferences for smaller sizes were underestimated in five categories. Rains and Longley (2021) noted that many members of a UK loyalty program shopped at competitors or failed to use their cards, limiting generalizations based on the data. If programs are modified to attract more non-members and encourage members to spend a larger share of their wallet at the retailer, database coverage would improve. Otherwise, analyses of loyalty program databases may recommend product assortments, merchandising, promotions, and prices that would not appeal to many non-members.

This research identifies factors that could raise loyalty program participation by members and non-members and improve database coverage. The lessons learned from analyzing more complete customer databases could help justify any additional program costs. An extensive literature review and two surveys are used to identify measures that are related to program memberships and develop tactics to boost participation. The next section reviews the prior research on information sharing, loyalty program participation, and analyses of customer databases. Then the methodology for the surveys is described. After the analytical results are presented, their implications and lessons from other studies are reviewed in the final section.

LITERATURE REVIEW

Information Sharing and Privacy Concerns

Studies in the US and Europe found that consumers weighed the benefits (e.g., monetary incentives) and the risks when making disclosure decisions (Olivero & Lunt, 2004; Gabisch & Milne, 2014; Roeber et al., 2015). A review of privacy research gave this tradeoff concept high ratings for predicting actual disclosures (Gerber et al., 2018). The willingness to share information may also be linked with some demographic measures. Jai and King (2016) found that willingness to share personal data varied by gender and age. Another US study found that privacy concerns limited disclosures and that women were less willing to share information (Leon et al., 2015). A German study confirmed the importance of privacy concerns and found that none of the demographics was significant (Krafft et al., 2017).

Attitudes about privacy may influence many consumer decisions. For example, Inman and Nikolova (2017) found that perceptions about a store technology with potential privacy effects can influence retail patronage. However, other research found a disconnect between the privacy concerns expressed in surveys and their actual

behavior (Kehr et al., 2015; Hallam & Zanella, 2017; Bandara et al., 2020; Larson, 2020). This "privacy paradox" suggests that some information-sharing decisions may be made without considering the tradeoffs.

Most studies on loyalty programs measured privacy concerns with a single construct, often developed from several questions. One used a four-item privacy concern scale to build an index and found it was negatively related to receptivity to join a relationship marketing program (Ashley et al., 2011). Another used a two-item scale and found that privacy concerns reduced loyalty program participation (Gomez et al., 2012). In the Netherlands, 88% of households belonged to at least one supermarket program and 53% participated in more than one (Leenheer et al., 2007). The only factor linked to joining programs was privacy concern, which was measured with a single question. A Belgian study used a two-item privacy scale and found that privacy concerns, gender, age, income, marital status, and home ownership were associated with loyalty program memberships (Van Doorn et al., 2007). They also tested several nonlinear relationships between memberships and privacy and did not find large improvements over a linear model.

In a review of privacy concern scales, Preibusch (2013) described the 15-item Smith et al. (1996) scale as the most "influential." Stewart and Segars (2002) confirmed this scale's reliability and validity and concluded that computer anxiety, measured with five items attributed to Parasuraman and Igbaria (1990), was independently linked to privacy concerns. Hinz et al., (2007) used the Smith scale and the Parasuraman and Igbaria scale in their survey. Components of the Smith scale were intended to measure different concerns, but the authors collapsed it into a single index. People were less likely to join programs if they had high privacy concerns and if they had high levels of computer or technology anxiety. Technology anxiety influences other consumer behaviors (e.g., use of self-checkouts, Larson, 2019). Hinz et al., (2007) also found that program members were more concerned about privacy than non-members and that age and income were important. Taylor et al., (2015) used questions similar to the Smith scale and divided privacy concerns into three factors. Although the authors surveyed students (whose responses may not generalize to the adult population, see Larson & Kinsey, 2019), they found that concerns about information collection were negatively related to loyalty program attitudes, concerns about data errors were positively related to program attitudes, and concerns about unauthorized secondary use of the data were not significant. These results raise questions about how privacy concerns influence program participation and show the importance of splitting the concerns into components instead of grouping them into a single measure.

Loyalty Program Participation

Many factors may influence the decision to join a loyalty program. Noble and Phillips

(2004) used focus groups and interviews to identify reasons why satisfied customers did not want to participate. They divided the reasons into four groups: upkeep (e.g., maintenance, forgetting to carry, ad barrage), time (e.g., sign-up, accumulation requirements, location), benefit (e.g., disappointing rewards, difficult to receive rewards, hidden costs, lack of benefit information), and personal (e.g., privacy, embarrassment from association with the firm). Addressing these issues might help boost loyalty program enrollments. A UK intercept survey found that consumers had between 0 and 8 loyalty program memberships (Wright & Sparks, 1999). Age, presence of children, income, and gender were linked with card ownership. An Australian survey found that program attribute appeal varied by gender (Vilches-Montero et al., 2018). For example, women were more interested in program innovativeness. Another factor, the number of loyalty cards an individual already possessed, was positively associated with joining a new program (Leenheer et al., 2007; Demoulin & Zidda, 2009). While the characteristics of individuals with many cards could indicate who might be the most likely to join a program, the attributes of individuals with few cards could suggest what issues need to be addressed before they join another program.

Customer Database Research

Although having a variety of customer characteristics in models can improve data analyses, many supermarkets limit what they ask during program sign-up. About 87% of supermarkets asked shoppers for their name, address, and phone number at loyalty program enrollment (Ashman, 2000). Less than 60% asked about age and less than 15% asked about other demographics (e.g., household size, age of children, etc.). A study in Belgium found that gathering more than the basic name and address information would require significant, immediate rewards (De Wulf et al., 2003).

Marketers need to invest in maintaining their data accuracy. For example, about 10% of Americans move each year (United States Census Bureau, 2019). Public information (e.g., new addresses, deaths, marriages, and births) may be added to customer databases so that promotional offers to each household are more relevant. Some supermarkets gather additional data about their customers. In California, supermarket chains must publicize what they collect (Lazarus, 2020). One chain listed transaction history at the stores along with geolocation data, insurance coverage, employment history, education, website usage, and credit history. Some customers may be troubled by all the data that may be collected and choose not to participate in a loyalty program. To improve data coverage, marketers need to consider customer concerns when selecting the measures to collect.

METHODOLOGY

During late 2005 and early 2006, a four-page survey was distributed by first-class mail to 4,900 adults who were randomly selected by a professional mailer from a very large

mailing list. The sample frame was individuals, aged 25 to 60 years old, who lived in Illinois, Indiana, Michigan, and Ohio. To confirm the 2006 survey results, using the same methods, a survey with identical questions was mailed to another sample of 4,900 randomly-selected adults in 2010.

TABLE 2. SURVEY SAMPLE PROFILES

Variables in Model	2006 Survey Sample Proportions	2010 Survey Sample Proportions
Loyalty Program Memberships (None/ 1-3/ 4-6/ 7+)	0.357/ 0.472/ 0.106/ 0.065	0.321/ 0.404/ 0.177/ 0.097
Female	0.547	0.462
Age 35 to 44 Years	0.261	0.357
Age 45 Years or More	0.581	0.419
Single/Separated/Divorced/Widowed	0.322	0.336
Attend Religious Service (at least once per month)	0.464	0.440
Some College (No 4-Year Degree)	0.270	0.296
Four Year College Degree or More	0.566	0.574
Non-white	0.097	0.126
Medium Low Incomes: $30,000 to $59,000	0.295	0.260
Medium High Incomes: $60,000 to $89,000	0.265	0.256
High Incomes: At Least $90,000	0.318	0.314
Sample Size	420	277

The survey asked respondents: "How many frequent flyer/frequent buyer/customer loyalty programs does your household participate in?" Subjects were given seven choices from none to more than 15. The top four options were collapsed into a "seven or more" category. Table 2 shows that more than 30% of respondents did not participate in any programs and more than 40 % participated in one to three programs. These four classes, represented by integers between 0–3, will be the dependent variable. Measures associated with more memberships will be identified with ordered probit regressions.

Besides demographics, people were also asked if they attended religious services at least once per month. Religiosity has been associated with many consumer behaviors (Larson & Heimrich, 2015). Larson (2020) linked religiosity to several privacy-protecting behaviors. Because religiosity has not been considered in prior loyalty

program studies, it will be included as an exploratory variable.

To assess privacy concerns, eight items with high factor scores from the Smith et al., (1996) scale were used along with five computer or technology anxiety scale questions (Parasuraman & Igbaria, 1990). Many studies have used all of the Smith scale, parts of it, or modified the scale's questions (Malhotra et al., 2004). Other researchers have used items from the Smith scale along with the Parasuraman scale to test for privacy concern effects (Ahn et al., 2015; Larson, 2018, 2019). The survey assessed respondents' privacy concerns by asking them to respond to 13 statements using a 7-point Likert scale (1 was Strongly Disagree, and 7 was Strongly Agree). If privacy concerns are found to be negatively related to participation, this would suggest that people weighed the benefits and costs when considering whether to join loyalty programs.

RESULTS

In 2006, recipients returned 420 usable responses, representing about a 9% response rate (after adjusting for bad addresses). The 2010 recipients returned 277 usable responses, representing about a 6% response rate. Low response rates were expected since the survey primed individuals to think about privacy and there was little incentive to complete the survey (i.e., to control costs, less than 5% of the samples were sent $1 incentives).

Table 2 shows the demographic profiles of the two samples. Women represented 54.7% of the sample in 2006 and 46.2% in 2010. In both 2006 and 2010, most profile measures were similar to the Midwest population. More than half of the respondents said they had earned at least a four-year college degree, which is higher than the target population. Non-whites were under-represented (10 and 12% of respondents), which is common in surveys that do not use ethnic quotas or oversample minorities.

At the top of Table 3 are the five computer or technology anxiety scale questions (Parasuraman & Igbaria, 1990). The rest of this column shows items selected from the Smith scale. The reliability of the thirteen statements about attitudes toward privacy was measured by Cronbach's alpha and was very good, 0.815 in 2006 and 0.814 in 2010 (George & Mallery, 2003). For both the 2006 and 2010 privacy responses, principal component analysis identified three factors using the eigenvalue-greater-than-1 criterion. The results after Varimax rotation are shown in Table 3. Varimax rotation was used to eliminate any multicollinearity between the factors in the regressions. The first factor in both surveys was primarily the five Parasuraman scale questions and was labeled "Technology Anxiety."

There was a slight change in the structure of the second and third factors between the two surveys. Confirmatory factor analysis did not find the deviation to be statistically significant. In the 2006 survey, six questions that dealt with the confidentiality of personal information dominated the second factor ("Confidentiality") and the remaining two questions made up the third factor ("Data Accuracy"). In the 2010

survey, the two questions about the accuracy of data were part of the second factor ("Company Actions") and three questions about the sharing of personal data made up the third factor ("Data Sharing"). Although these factor differences could complicate the analysis, they will have little effect.

TABLE 3. FACTOR ANALYSIS RESULTS

	2006 Survey			**2010 Survey**		
	Tech Anxiety	Priv2-2006 Confid-entiality	Priv3-2006 Data Accuracy	Tech Anxiety	Priv2-2010 Company Actions	Priv3-2010 Data Sharing
I am sometimes frustrated by increasing automation in my home	**0.835**	0.027	-0.041	**0.867**	-0.030	-0.003
I am easily frustrated by computerized bills	**0.827**	0.073	-0.035	**0.799**	-0.025	0.076
I am anxious and concerned about the pace of automation in the world	**0.687**	0.184	0.194	**0.764**	0.176	0.079
Computers are a real threat to privacy in this country	**0.606**	0.189	0.203	**0.622**	0.308	0.222
Sometimes I am afraid that data processing department will lose my data	**0.603**	0.046	0.407	**0.611**	0.239	0.171
Companies should never share personal information with other companies unless it has been authorized by the individuals who provided the information	0.007	**0.762**	0.140	-0.094	**0.546**	0.278
Companies should never sell the personal information in their computer databases to other companies	0.166	**0.718**	0.003	0.064	**0.604**	0.042
Computer databases that contain personal information should be protected from unauthorized access – no matter how much it costs	0.016	**0.682**	0.288	0.092	**0.707**	-0.065
People should refuse to give information to a business if they think it is too personal	0.195	**0.647**	-0.019	0.092	0.012	**0.735**
When companies ask me for personal information, I sometimes think twice before providing it	0.036	**0.555**	0.099	0.062	0.152	**0.696**
It bothers me to give personal information to so many companies	0.431	**0.541**	0.220	0.416	0.282	**0.597**
Companies should take more steps to make sure that the personal information in their files is accurate	0.130	0.208	**0.871**	0.223	**0.689**	0.160
Companies should have better procedures to correct errors in personal information	0.159	0.140	**0.863**	0.270	**0.625**	0.181
Cronbach's Alpha	0.815			0.814		

Note: Underlined and bold entries identify the largest factor score for each question

TABLE 4. LOYALTY PROGRAM MEMBERSHIPS ORDERED PROBIT REGRESSION RESULTS

Independent Variables in Model	**2006 Survey**		**2010 Survey**	
	B	P-value	B	P-value
Intercept 0 | 1	**0.603****	0.043	0.095	0.761
Intercept 1 | 2	**2.056****	0.000	**1.326****	0.000
Intercept 2 | 3	**2.678****	0.000	**2.121****	0.000
Female Dummy Variable	0.046	0.716	-0.165	0.250
Age 35 to 44 Years	-0.082	0.668	0.187	0.317
Age 45 Years or Higher	-0.230	0.177	0.002	0.993
Single/Separated/Divorced/Widowed	**0.302****	0.047	0.036	0.817
Frequent Religious Attendance	0.155	0.204	0.063	0.652
Some College (No 4-Year Degree)	0.270	0.167	0.189	0.430
Four-Year College Degree or More	**0.604****	0.001	**0.491****	0.041
Non-white	-0.126	0.534	-0.205	0.340
Medium Low Income	0.355	0.119	0.229	0.312
Medium High Income	**0.563****	0.021	0.061	0.806
High Income	**1.001****	0.000	**0.689****	0.006
Technology Anxiety Factor	-0.125*	0.056	**-0.222****	0.002
Privacy Factor 2: Confidentiality/Company Actions	-0.031	0.658	-0.107	0.116
Privacy Factor 3: Data Accuracy/Data Sharing	0.037	0.554	-0.108	0.114
AIC		808.99		673.24

Note: * indicates significance of at least 0.90; ** and bold indicates significance of at least 0.95.

Table 4 shows the results for the ordered probit regressions. Unlike some previous studies, gender and age were not significant and education was positively related to participation in both regressions. The results for marital status were not consistent and religiosity and ethnicity were not significant. The high-income class was positive and significant in both regressions. This implies that enticing people with college degrees and high incomes to join loyalty programs may be easier. The second and third privacy factors, Confidentiality/Company Actions and Data Accuracy/Data Sharing, were not significant, which suggests that those joining more programs did not express those concerns. The privacy concern measure that was significant was technology anxiety. Hinz et al., (2007) also found technology anxiety to be significant. In both regressions, those individuals who expressed more anxiety participated in fewer programs (at the 90% confidence level).

DISCUSSION

Some firms have been disappointed with the performance of their loyalty programs. Data that is collected can have high marketing research value and may tip the scale, making programs with limited direct effects net positives. To provide unbiased recommendations for assortment, pricing, promotion, and merchandising decisions, more customers, including those who do not buy large amounts, need to participate in loyalty programs. Marketers may need to change program designs, adjust incentives, and improve product offerings to attract more infrequent customers and small-transaction shoppers. Too many loyalty programs appear to be copies of competing programs (Heath, 1997). Differentiation options include adding some innovative features (to appeal to women) (Vilches-Montero et al., 2018) and offering unique nonmonetary benefits (Koh et al., 2020). Because preferences for hedonistic benefits (e.g., games, sweepstakes), recognition benefits (e.g., personalized check out, birthday cards), convenience benefits (e.g., priority checkouts, home delivery), and informational newsletters vary by customer, careful planning is needed to design the rewards system (Meyer-Waarden et al., 2013). Some rewards should have aspirational or emotional attributes and light buyers should be able to earn them.

The focus group research by Noble and Phillips (2004) highlighted other issues. Many supermarkets offer key tag membership cards or let members attach their membership number to their phone number (so individuals only need to recall their phone number to have a transaction added to their account). Firms should also make receiving rewards easy and publicize all the community and charitable activities that they support so that customers are proud of their memberships. Nunes and Dreze (2006) recommended awarding new members points at enrollment and providing a reason for the endowments. The communication system can influence perceptions of fairness (Shulga & Tanford, 2018). A European study found customer preferences varied for the communication media that highlighted a program's features (Ieva & Ziliani, 2017). Therefore, marketers should have multiple options for regular communications and allow members to choose the medium that they prefer. They also should recognize loyal members when they move out of the market area (Brierley, 2012). These steps should increase program participation and improve the value of the customer purchase database.

This study found that it may be easier to add households with college degrees or higher incomes to programs. This also means that extra efforts may be needed to attract households with less education and with lower incomes. Perhaps direct mail solicitations sent to specific neighborhoods could boost participation among customers with less education or lower incomes.

The lack of significance for the two privacy concern factors tends to support the

privacy paradox and not the tradeoff concept. The negative coefficient on technology anxiety offers new insights on how to recruit members. Keeping the loyalty program sign-up, usage, and redemption processes simple may help reduce this anxiety. Firms should also provide assurances that the data will be protected and will not be misused. This anxiety continues to bother some consumers. The average scores for the technology anxiety questions in this study were 4.4 and 4.3 (on a 1–7 scale). The percentages of subjects with average scores of at least five were 37% and 34%. Two national online panel surveys in 2015 asked the same five questions and had average scores of 4.0 and 3.8 (Larson & Farac, 2019). The percentages with scores of at least five were also lower, 21% and 15%. One option to reduce this anxiety may be to use science fiction movies as a prime to encourage thinking about the future and privacy tradeoffs (Milne et al., 2021). Reducing anxiety about a program's use of technology and alleviating concerns about how membership might create technology frustrations should help increase participation.

Like most studies, this research has some limitations. The data are from a period when memberships were increasing; the results should be confirmed with more recent surveys. The response rates were low and the samples were not ideal reflections of the Midwest target audience. Future research could have larger, national samples, have greater non-white participation, and test for differences between regions. Longer privacy concern scales could also be used to measure consumer attitudes. By following the suggestions in this research, marketers with loyalty programs should be able to raise the quality of their customer databases and make better decisions for their operations.

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