

The Relationship Between Perceived Event Service Quality and Direct Spending by Marathon Participants

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Abstract

The purpose of this study was to examine the relationship between participant perceived event service quality and direct spending at a marathon event while controlling for demographic differences. Data for this study was collected online after the conclusion of the event from 1,370 respondents who participated in a multi-day marathon event. A relatively strong positive relationship was found between the marathon participant's perceived event service quality levels and direct spending at the event. The higher the level of perceived service quality then more direct spending by event participants occurred. It was found that demographic data could not be used to predict perceived levels of event service quality and direct spending. The findings of this study suggest that sport event planners and organizers may want to consider budgeting money for service quality initiatives because these investments could pay dividends in terms of overall participant direct spending levels and ultimately the overall economic impact of the event.

Introduction

Sporting event organizers and planners spend a great deal of time, money, and effort to ensure that event participants are having an enjoyable and quality experience while participating in a particular sporting event. The Rock and Roll Half-Marathon, for example, has musical bands placed strategically along the course or running route. An event expo is provided to display and sell event merchandise and products from sport businesses and vendors. Finisher medals are included along with enhanced online registration features, event t-shirts, and gear bags. A post event party and celebration festivities are provided for event participants. The basic assumption behind providing these extra amenities is that individuals who participate in marathons, half-marathons, and other types of participant oriented sporting events are more likely to return to the event in the future if they have an enjoyable and satisfying experience while attending and participating in the event.

Moreover, it is felt that money spent on service quality features or amenities by sport event organizers and planners (e.g., event expo, post event parties, online registration enhancements, medal and award ceremonies, ...) is money well spent as it will add to the perceived service quality of the event and the overall satisfaction of event participants. Some sport and recreation researchers point out that service quality and satisfaction are separate dimensions while other researchers indicate they are closely related and perhaps even the same dimension (Murray & Howat, 2002). One area of service quality in sport settings that has

not been examined involves the relationship between perceived levels of service quality and levels of direct spending by event participants. In the past, most sport service quality studies have involved spectators and only a limited number of studies have included participants. Therefore, the purpose of this study was to explore the relationship between participant perceived service quality and direct spending at a multi-day marathon running event.

Review of the Literature

Perceived service quality has been defined as a global judgment or attitude related to the superiority of a service (Zeithami & Bitner, 2003). It has also been defined as “the difference between what is expected from each of the service dimensions and what a consumer perceives he or she receives from them” (MacKay & Crompton, 1988, p. 46). Perceived service quality has been studied in a number of non-sport settings for several years (e.g., Babin & Griffin, 1998; Brady & Robertson, 2001; Giese & Cote, 2000; McDougall & Levesque, 2000). The non-sport studies often use or refer to the twenty-two SERVQUAL dimensions that were initially developed by Zeithami, Parasuraman, and Berry (1998). Although a growing number of studies on service quality have been carried out in sport and recreation settings, these studies have generally examined the perceptions of spectators at sporting events or customers who use recreation facilities (e.g., Alexandris, Zahariadis, Tsorbatzoudis, & Grouios, 2004; Fornell, 1992; Laroche, Ueltschy, Shuzo, & Cleveland; Kandampully, 1998; Ko & Pastore, 2004; Lambrecht, Kaefer, & Ramenofsky, 2009; Murray & Howat, 2002,). A number of service quality studies in sport have shown a connection between service quality and increased levels of customer satisfaction, event involvement, spectator commitment, perceived value, and loyalty (Brady, Voorhees, Cronin, & Bourdeau, 2006; Ko, Kim, Kim, & Lee, 2010; Yoshida & James, 2010). In terms of service quality and future intentions, Zeithami, Berry, and Parasuraman (1996) point out that service quality has a direct influence on future behavioral patterns of consumers. More specifically, they note that a positive perception of service quality as it relates to core and peripheral services can lead to a customer’s intention to revisit, repurchase, and the willingness to pay more for services. It is this last point that links to the current study. In other words, is there a relationship or association between perceived levels of service quality at a multi-day participant oriented sporting event and direct spending levels by the participants? To date, no studies have been identified in the literature that specifically examine the perceived service quality levels of marathon event participants and the direct spending levels of the participants.

It should be noted that a limited number of studies have looked at service quality involving participant oriented sporting events such as marathons and half-marathons. For instance, Alexandris, Theodorakis, Kapianidou, and Papadimitriou (2016) studied event quality and loyalty among marathon runners at different involvement levels. The researchers found that service quality was more important for the development of event loyalty among runners who had low levels of involvement when compared to marathon runners with high levels of involvement. In another running event study involving service quality, Theodorakis, Kaplanidou, and Karabaxoglou (2015) examined how sport running event perceived service quality attributes influence the overall satisfaction and experiential happiness of runners in 5K and 10K races. Overall, they found that perceived service quality attributes did influence the satisfaction and experiential happiness levels of the runners. In a related non-service quality study of marathon events, Koo, Byon, and Baker (2014) investigated two small scale marathon events for a hierarchical relationship among event image, satisfaction, and behavioral intention to revisit and recommend the events. The results of their study demonstrated that satisfaction and event image were positively associated with behavioral intention in that satisfaction partially mediated the relationship between event image and behavioral intention.

Customer satisfaction is another dimension closely related to service quality. While businesses and industry have long been concerned with customer satisfaction (Anderson, Fornell, & Lehmann, 1994; Anderson & Mittal, 2000; Bearden & Teel, 1983; Churchill & Surprenant, 1982; Day & Bodur, 1978; Spreng, Harrell, & Mackoy, 1995), a growing number of research studies have been conducted on customer satisfaction in the sport industry. Similar to sport service quality studies, sport customer satisfaction studies have focused on the satisfaction levels of sport spectators or fans. A common instrument or scale used in these studies has been a derivation of the “Servicescape” instrument (Bitner, 1992) which is called “Sportscape” (Wakefield & Sloan, 1995). “Sportscape” concentrates on the service extensions and physical surroundings of a sporting event. Spectator satisfaction in professional sport settings has been the focus of multiple “Sportscape” studies (e.g., Lambrecht et al., 2009; Greenwell, 2007; Madrigal, 1995; Van Leeuwen, Quick, & Daniel, 2002). These spectator studies have examined the professional sports of baseball, basketball, football, golf, hockey, and soccer. In the sports industry, customer satisfaction is crucial since sport organizations focus on understanding the needs and wants of customers while working to achieve organizational goals.

A limited number of studies (Lambrecht et al., 2009; Woo, 2016) have looked at various factors, amenities, or attributes when taken together add up to a total service quality experience and make the event enjoyable, satisfying, and memorable. These factors, amenities, or attributes can range from offering an event merchandise expo, to event medals and award ceremonies, to post event parties, ... Looked at individually and then added together -- event planners and organizers hope that these extra event amenities will pay dividends in terms of customer loyalty, satisfaction, happiness, retention, and increased spectator and/or participant direct spending levels.

Purpose of study

The purpose of this study was to examine the relationship between event participant perceived levels of service quality and levels of direct spending during a multi-day marathon event. Also, associations between perceived service quality, direct spending levels, and selected demographic variables were explored. It was not the aim of this study to investigate specific interactions involving participant satisfaction. The following research questions were formulated for this study:

- RQ1: Is there a relationship between perceived levels of service quality by participants in a multi-day marathon running event and their levels of direct spending during the event?
- RQ2: Is there an association between participant perceived levels of service quality and selected demographic variables at a multi-day marathon running event?
- RQ3: Is there an association between participant levels of direct spending and selected demographic variables at a multi-day marathon running event?

In the past, no sport studies have attempted to link perceived levels of service quality associated with event amenities (e.g., post-race party, medal ceremonies,...) with participant direct spending levels for the event. As mentioned previously, the primary focus of other studies has been to concentrate on whether event spectators have a positive service quality experience and plan to return to the event or sport facility again in the future. A basic premise of this study is that individuals who participate in sporting events such as marathons

are likely to spend more money during the multi-day event experience if they perceive the service quality of the event as being high, favorable, or positive.

If this premise is presented in a non-sport setting as an illustration, one could imagine a waiter or waitress in a restaurant receiving a larger tip if the customer perceives him or her as providing excellent service. In a sport context, such as a multi-day marathon event, many opportunities exist where the participant can spend more money (e.g., purchasing event expo merchandise, purchasing souvenirs, purchasing food and beverage, mall or retail shopping, sightseeing, entertainment,...). If the services (including event amenities or extras) being provided by the multi-day event organizers and planners are of high quality and exceptional in nature for the event participants, then it is being hypothesized in this study that there is a strong likelihood that more direct spending by the event participants will take place. The relationship between perceived service quality and levels of direct spending (while controlling for demographic variables) is at the heart of the current study.

If a relationship between service quality and direct spending can be shown, this could help sporting event organizers and planners to decide whether or not they want to invest money in providing event amenities such as post event parties, medals, special award ceremonies,... Ideally, event organizers would like to know if these efforts have a return on investment with event participants spending more money at the multi-day event and thus impacting the overall economic impact of the sporting event for the community.

Methodology

A multi-day marathon event was selected for purposes of this study. The event started with online registration followed by packet pick-up that was held two days before the actual marathon was run. A large merchandise expo was offered where vendors gathered to exhibit and sell sporting goods, exercise equipment, health foods, vitamins, and running workshops were presented for the event participants. The marathon event included multiple sub-events such as a half-marathon and 8K run.

An online survey was used to collect demographic and direct spending data from the participants. A 12-question event service quality questionnaire was used to collect online data on the perceived levels of service quality. Similar to the Lambrecht et al. (2009) study that used a number of Sportscape factors, the service quality questions for the present study included a variety of service quality factors or attributes associated with the event. For example, questions were asked that pertained to the finish line food, packet pick-up, expo vendors, start line arrangements, timing system, course layout, finisher medals, event merchandise, overall organization of the marathon, finish line arrangements, post-race party, and water-stops. Also, similar to the Lambrecht et al. (2009) study, a Likert-type scale with 5-responses was used with choices ranging from 1=Poor to 5=Excellent.

Direct spending data was obtained through the use of a 6-question online survey that asked questions related to the total amount of money spent on food and beverage, lodging, retail shopping including event souvenirs/merchandise, tourism/recreation, entertainment, and transportation. The online direct spending survey has been used in several direct spending studies and previously went through a jury of experts review process with revisions and modifications made to the instrument. An e-mail was sent to event participants two days after the conclusion of the event by event organizers who made a personal request for event

participants to complete the online survey. The online survey was sent to event participants two days after the conclusion of the event in order to give event participants time to return home and check their e-mails for credit card statements, spending reports, and receipts. A total of 1,370 event participants provided completed online surveys for the study.

Finally, online survey respondents were asked a series of demographic information questions. These questions included information related to age, gender, race, household income levels, highest educational level, etc. The demographic information was eventually analyzed and used to determine its effect, if any, on direct spending and service quality interactions.

Analysis and Results

The mean age of the respondents was 40.28 (median of 39) years, with 62% female and 38% male. The breakdown by ethnic group, educational, and income levels are listed below.

Table 1: Ethnic Groups

Caucasian 90.15%	African-American 2.34%	Asian 2.77%	Hispanic 2.12%
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Table 2: Educational Levels

High-School (HS) 5.99%	Junior College (JC) 6.79%	4-Year College (4-C) 40.66%	Graduate School (GS) 41.75%
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Table 3: Household Income Levels

Under \$25,000 (Inc1) 2.04%	\$25,000 to \$49,999 (Inc2) 9.12%	\$50,000 to \$74,999 (Inc3) 13.43%	\$75,000 to \$99,999 (Inc4) 14.02%	\$100,000 to \$149,999 (Inc5) 26.28%	\$150,000 to \$199,999 (Inc6) 14.60%	\$200,000 to \$249,999 (Inc7) 5.4%	\$250,000 to \$299,999 (Inc8) 3.36%	Over \$300,000 (Inc9) 2.92%
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Generally speaking, the typical person in the data set was a 40 year-old Caucasian female who has spent time in graduate school and lives in a household that has a gross household income of between \$100,000 and \$149,999.

Direct spending was broken down into 6 main categories that included food/beverage, lodging, retail, tourism/recreation, entertainment, and transportation. The mean level of spending in dollars for each category is listed below.

Table 4: Direct Spending Figures

Food 152.79	Lodging 208.89	Retail 64.20	Transportation 80.34	Tourism/Rec. 2.56	Entertainment 10.11
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Summed together, these categories account for an average of \$518.74 per respondent.

Is There A Relationship Between Reported Participant Perceived Event Service Quality, Levels of Direct Spending, and Demographic Characteristics of Survey Respondents?

Analysis started by using the sum of reported event service quality across 12 categories as the dependent variable (Model 1). Again, these categories included finish line food, packet pick-up, expo vendors, start line arrangements, timing system, course layout, finisher medals, event merchandise, overall organization of the marathon, finish line arrangements, post-race party, and water-stops. Each of these variables was reported on a scale of 1 to 5, the new variable 'service quality' ranged from a minimum of 12 to a maximum of 60. The independent variables in the model were dummy variables related to income (with 9 categories, as defined in Table 3), education (high school, junior college, four-year college, graduate school, as categorized in Table 2), race (African-American, Asian, Caucasian, Hispanic, as categorized in Table 1), and gender. There was also a variable for age. The regression output for the model is listed below.

The first finding worthy of discussion relates to the F-statistic for joint-significance of the model. The null hypothesis is that the model taken as a whole does not have any explanatory power. The F-statistic for this model is 1.40, with an associated p-value of 0.13.

Therefore, the null hypothesis cannot be

rejected that this model has no explanatory power at the 5% level of significance. It would appear that demographic characteristics do not help to predict the service quality that individuals report. In other words, reported service quality was not related to income group, education level, gender, race, and age collectively. The adjusted-R² of .0038 for this model was very low.

To conclude the discussion of the relationship between reported event service quality

Table 5: Regression Output for Model 1

Variable	Names	Coefficient	T-value	P-value
Income	inc2	-0.04	-0.07	0.95
	inc3	-0.89	-1.59	0.11
	inc4	0.19	0.36	0.72
	inc5	-0.46	-0.95	0.34
	inc6	-0.40	-0.77	0.44
	inc7	-0.61	-0.78	0.44
	inc8	0.37	0.51	0.61
	inc9	-1.01	-1.07	0.29
	Education	junior-college	-0.59	-0.79
four-year-college		-0.71	-1.53	0.13
grad-school		-1.00	-2.17	0.03
Gender	female	0.81	2.72	0.01
Race	Asian	0.45	0.58	0.56
	Hispanic	0.56	0.42	0.67
	African-American	-0.43	-0.56	0.58
	age	0.02	1.39	0.16

and demographic characteristics, there does not appear to be much of a meaningful relationship. There was a possible exception in the case of gender, as there was evidence to suggest that females derive a higher level of perceived service quality than males. This issue may merit further investigation by subsequent researchers.

The question of how perceived service quality is related to direct spending for the marathon event was the next step in the data analysis process. In the regression models considered in this section (Model 2), the dependent variable was the natural logarithm of the sum of all categories of direct spending that were considered earlier. In every model, demographic characteristics were used as controls (gender, income group, education level, age, racial background). We considered two possible ways for service quality levels to enter into the model. The model to consider used the sum of all relevant reported service quality categories as the independent variable of interest. This measure was identical to the measure of service quality used in the previous section. The output for this regression is listed below.

The F-statistic for joint-significance of the model was 6.76 and this was significant at the 0.1% level. We may therefore reject the null hypothesis that the model has no explanatory power. The adjusted-R² associated with the model of .062 indicates that while the model did not capture all the factors related to spending, it captured enough so that its predictions were potentially relevant.

The significance of the control variables in the model will be considered next. Since many individual coefficients were significant (one may simply observe the

p-values associated with the coefficients to determine which ones were significant), F-tests of groups of control variables will be presented rather than discussing each individually. The discussion will be brief as the coefficients of the control variables in this model were not the primary concern of this study.

Table 6: Regression Output Model 2

Variable	Names	Co-efficient	T-value	P-value
	service qual	0.01	2.99	0.00
Income	inc2	-0.27	-2.13	0.03
	inc3	-0.17	-1.61	0.11
	inc4	-0.05	-0.47	0.64
	inc5	0.01	0.16	0.88
	inc6	0.29	3.09	0.00
	inc7	0.16	1.22	0.22
	inc8	0.38	2.97	0.00
	inc9	0.20	1.10	0.27
	Education	junior-college	-0.13	-1.04
four-year-college		-0.17	-2.05	0.04
grad-school		-0.17	-1.94	0.05
Gender	female	0.01	0.13	0.90
Race	Asian	-0.14	-0.97	0.33
	Hispanic	0.02	0.09	0.93
	African-American	-0.14	-0.62	0.53
	age	0.01	4.63	0.00
	Intercept	4.83	16.05	0.00

The null hypothesis for each test was that the coefficients for all variables in the group are equal to zero. First, the group of income variables (inc2-inc9) were considered. The F-statistic for this test was 6.55, with an associated p-value < 0.001. The null hypothesis was rejected at the 5% level and it was concluded that the controls related to income have a highly significant effect on spending. This was not surprising. Next, the education variables were considered. The F-statistic for this test was 1.18, with an associated p-value of .3169. Therefore, the null hypothesis was not rejected at the 5% level and it was concluded that the controls related to education have no joint explanatory power related to the level of direct spending. Finally, the variables related to race were considered. The F-statistic for this test was 0.44, with an associated p-value of .73. The null hypothesis was not rejected at the 5% level and it was concluded that the controls related to race also had no joint explanatory power related to the level of direct spending. The discussion on controls was concluded by noting that the coefficient on 'age' of .011 was significant at the 5% level. Therefore, the null hypothesis can be rejected that the coefficient on 'age' is equal to zero.

In terms of perceived event service quality, the coefficient of .014 had an associated t-statistic of 2.99 and a p-value of .003. The null hypothesis may be rejected that the coefficient on 'service quality' was equal to zero and further conclude that the coefficient on 'service quality' was positive. Elasticity analysis revealed that a one unit increase in "service quality" increases total direct spending by 0.24% on average with actual values of "service quality" used in the model as an independent variable. It may be concluded on the basis of this model that individuals who report higher levels of "service quality" also tend to spend more money at the event.

Another model (Model 3) was considered where the natural logarithm of 'service quality' was used rather than the level of service quality. All other control variables in this model stayed the same as in the previous model. The reason behind using the logarithm of service quality was to check whether the relationship improved than in the previous model by introducing more linearity in the "service quality" variable. The regression output for this model is listed below.

In considering this model, the logarithm of service quality was exclusively examined. This was because everything said about the control variables in the last model are also true in this model.

The F-test on income was significant and the F-tests on the education and race variables were insignificant. The coefficients were all of the same sign as before, and the adjusted-R² is now .0623 compared to .0621 previously. This model therefore appears to fit the data slightly better than the previous model. The coefficient on 'service quality' (the natural logarithm of service quality) was equal to .6695, with an associated t-statistic of 2.92 and a p-value of .004. One may reject the null hypothesis that the coefficient on 'service quality' was equal to zero at the 5% level. Once again, direct spending was positively associated with increased levels of reported service quality. Elasticity analysis indicated that a one unit increase in the natural logarithm of "service quality" increased direct spending by 0.44% on average. In other words, there was evidence that half of the increase in reported service quality may be feeding directly into increases in spending. There was a relatively strong positive relationship between reported levels of service quality and reported levels of direct spending at the multi-day marathon event. This result was robust to the degree that service quality enters into the regression model.

Summary and Conclusions

In terms of RQ1, there was a relatively strong positive relationship found between participant direct spending and perceived service quality involving a multi-day marathon event when controlling for demographic data. In terms of RQ2 and RQ3, the relation between perceived service quality and demographic data along with the relation between direct spending and demographic data were explored. It was found that only one demographic factor had a

significant effect on the perceived service quality as reported by event participants with this factor being gender. Females were found to respond with higher perceived service quality levels than males. It was revealed that factors related to income level had a relatively strong influence on direct spending. Education, race, and age did not have a strong influence on direct spending.

Based on elasticity analysis of the last two models, it was then determined that a one unit increase in perceived service quality led to a 0.24% increase in direct spending. However, a better model was found using the natural logarithm of perceived service quality. Using this model, it was determined that a one unit increase in service quality led to a 0.44% increase in direct spending. Therefore, a relatively strong positive relationship did exist between the perceived service quality dimension and direct spending of the multi-day marathon event participants. In both models, the service quality and the log of service quality were statistically significant ($p\text{-value} < 0.05$). It was concluded that, in both occasions, there was a statistically significant relationship between service quality and direct spending.

This was an exploratory study and directed at a multi-day marathon event. Although service quality and direct spending were the main focal points of this study, participant satisfaction, loyalty, and retention are certainly other variables that should be considered in future studies of event participants. In particular, more studies that examine participants of sporting events are needed. In the past, a primary focus of sport service quality studies has been on event spectators. Post-event online data collection was used for this event. For

Table 7: Regression Output Model 3

Variable	Names	Co-efficient	T-value	P-value
	Log-service qual	0.67	2.92	0.00
Income	inc2	-0.27	-2.12	0.03
	inc3	-0.17	-1.62	0.11
	inc4	-0.05	-0.47	0.64
	inc5	0.01	0.14	0.89
	inc6	0.29	3.08	0.00
	inc7	0.16	1.23	0.22
Education	inc8	0.38	2.96	0.00
	inc9	0.19	1.09	0.28
	junior-college	-0.13	-1.02	0.31
	four-year-college	-0.17	-2.06	0.04
	grad-school	-0.17	-1.96	0.05
Race	Asian	-0.14	-0.97	0.33
	Hispanic	0.02	0.12	0.90
	African-American	-0.14	-0.63	0.53
	Age	0.01	4.76	0.00
	Intercept	2.93	3.16	0.00

future studies, it is suggested that multiple data collection methods be employed such as post event online surveys, in person surveys at the event, event exit surveys, mobile device real time surveys, online tracking of debit and gift card real time purchases, and personal logs or journals of spending. Furthermore, additional modeling techniques could be used based on longitudinal data sets collected at similar events in different geographical locations.

Another suggestion for future service quality studies is to look closely at which specific service quality attributes and amenities (e.g., post event party, award ceremonies) result in the highest levels of participant and spectator satisfaction, enjoyment, happiness, retention, loyalty, and direct spending levels. Ultimately, this type of data will help future sport event organizers and planners to make informed decisions and create the best events possible.

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