Technology as a Mediator to Enhance Customer Satisfaction

Dr. Rekha Attri, Assistant Professor, Jaipuria Institute of Management, Indore

Address: 101 Sapphire height, Opposite C-21 Mall, AB Road, Indore, Madhya Pradesh, India, 452008

Dr. Jagdish Bhagwat, Assistant Professor, Jaipuria Institute of Management, Indore

Dr. Tarun Agarwal, Professor, Jaipuria Institute of Management, Indore

Abstract

Purpose: Customer satisfaction and customer loyalty can be considered as two important parameters for assessing customer retention. In today's world, technology is a vital link between moment of truth and customer satisfaction. This paper critically reviews the mediating role of technology between moment of truths and customer satisfaction at two distinct levels: zero moment of truth (ZMOT) as well as ultimate moment of truth (UMOT).

Method: A total of 326 responses were received out of which 265 responses were found suitable for the study and 51 responses were dropped due to incomplete information. Harman's single factor test was employed in the present study. Data analysis was done using SPSS AMOS and SPSS Andrew Hays Process v3.4 Model 4.

Results: The finding of this research indicates that the role of technology is more prominent between zero moment of truth and customer satisfaction i.e. before availing gymnasium services. The role of technology is observed to be weak between ultimate moment of truth and customer satisfaction.

Key Words

zero moment of truth, ultimate moment of truth, technology, customer satisfaction, customer loyalty, gymnasium.

Introduction

A research carried out in 2006 by Customer Think Corporation on various industries like airlines, automobile, banking, car rental, department store, electronics, fast-food restaurant, fixed line telecom, full service restaurant, grocery supermarket, hotel and wireless telecom

industry, established that superior products or services and high quality interactions with people and systems were highly important as compared to lowest price or cost of ownership. Since even the customers of primarily product focused industries gave higher importance to high quality interactions, it is important for all organizations to work towards improving customer encounters if they wish to win the heart and wallet of the customers. Thus, in order to create a new or lasting source of competitive advantage companies need to manage customer experiences (Thompson, 2006).

The time period during which a customer has a direct interaction with the service is termed as service encounter (Shostack, 1985). These interactions are sometimes even referred to as moments of truth (Edvardsson, et al., 2000). Various moments of truth lay the foundation on which future customer expectations are built and therefore organizations need to carefully monitor the outcome of each moment of truth- whether good or bad and plan to deliver rich customer experiences. It has been stated that the micro aspects of service encounters with the customers are linked to the macro aspects of market share and general success of the firm. Therefore, it is in the interest of the organization to work towards having positive and delightful encounters with the customers (Vargo & Lusch , 2004).

The Indian healthcare sector is expected to reach Rs 19,56,920 crore (US$ 280 billion) by 2020.With the rise in income levels, heightened awareness regarding healthy lifestyle and with increased precedence of lifestyle diseases, there is an increased emphasis on fitness and an exponential growth has been witnessed in the healthcare and fitness centers (IBEF, 2019). The Indian sports and fitness goods market was valued at US$ 3,621 million in 2017 and is further projected to reach US$ 6,054 Million by 2024, growing at a CAGR of 9.0% during 2019-2024. The rise in the awareness about personal health has prompted many to join health clubs, gymnasiums and actively participate in various sporting activities (Anon., 2019). Competition today is on the level of service delivery along with the product features and that is what gives any organization an edge over its competitors. Extensive inputs are required from an organization while attempting to build customer relationships and organizations need to proactively devise and implement their CRM strategies in order to set them apart from competition (Berndt, et al., 2004). In today's world, technology is a vital link between moment of truth and customer satisfaction. This paper critically reviews the mediating role of technology between moment of truths and customer satisfaction at two distinct levels: zero moment of truth (ZMOT) as well as ultimate moment of truth (UMOT).

Literature Review

Customers' experiences need to be orchestrated and companies try giving different clues to the customers from time to time so that they catch the customers' attention and prompt them to prefer their company over the competition. Since the total customer experience has gained a lot of importance in the present times, any clue that can be experienced or perceived by the customer therefore cannot be neglected. These clues could be experience clues (clues which can be experienced by sensory organs), mechanics clues (clues emitted by things) or humanics clues (clues emitted by humans) (Berry, et al., 2002a). It has however been argued that habitual customers might ignore many stimuli and therefore grabbing customers' attention can be very tricky (Underwood, et al., 2001).

Based on customer expectations, past experiences, competitive scenario and situational factors, the zone of tolerance for each customer varies and organizations need to be mindful towards meeting or even exceeding the customer expectations (Hultman, 2005). In order to be successful in delivering value to the customers, it is essential that realistic promises are made (also termed as External Marketing) and adhered to by the employees empowered to provide excellent service (also termed as Internal Marketing) during each encounter resulting in a moment of truth (also termed as Interactive Marketing). A series of positive encounters forms a stronger base of customer relationships resulting in an increased likelihood of relationship continuation. Negative encounters on the other hand result in a loss of trust, while few positive and some negative encounters might lead the customer getting confused and very susceptible to appeal of competitors (Bitner, 1995).

Understanding Moment of truth is particularly important for services because services are intangible, inconsistent and inseparable. For any industry offering a service or selling products with embedded service elements, there are moments wherein long term relationships between the organization and its customers can change significantly- either for better or for worse. Companies have often utilized the customer satisfaction scores and at times the Net Promoter Scores (NPS) to assess customers' experiences. Customer Experience Quality (EXQ) Scale has also been proposed by researchers owing to its predictive power to measure customer loyalty and recommendations in comparison to measuring just customer satisfaction using SERVQUAL scale. Customer experience is a resultant of the cognitive and affective assessments of his/her various encounters with the firm. Since this experience begins much before the occurrence of service encounters and continues much after the encounter is over, it was argued that SERVQUAL which measures merely perceptions versus expectations cannot

accurately determine the customer experience and therefore measurement of customer experience of service quality needs to be carried out   (Klaus & Maklan, 2012).

Researchers have divided the moment of truth broadly into two parts. The first moment of truth is when, despite the clamour from competition, the product or service catches the attention of the customer and is able to communicate the benefits of the product or service effectively. The second moment of truth is when the product/service is consumed and thereby subject to evaluation by the consumer. The total customer experience is a combination of these two moments of truth (Löfgren, 2005) which ultimately defines how much a company would be able to satisfy and retain them. Although product/service benefits and attributes play crucial role in customer satisfaction, thereby leading to customer loyalty, the impact on customer satisfaction has been found to be significantly different in the first and second moment of truth (Lofgren, et al., 2008).

Present day customers inadvertently go for an online search of product features, reviews, feedback etc. even before searching for alternatives. This online search behavior of customers has been termed as "Zero Moment of Truth (ZMOT)" by Google in 2011. Companies focus on search engine optimization so that when the customer searches for a product or service category their product comes in the top few search results. The better and more specific the search results, the better is the customer experience. Companies also focus on providing all relevant information and details about their product as well as benefits in comparison to the competition to facilitate the decision making of the customer. The more engaging and enriching the experience of the customer during this search stage, the more is the satisfaction level in terms of information received (Inc.com, 2017).

It has been suggested that the customer experience at zero moment of truth leads to some amount of customer satisfaction. That is probably the reason why many organizations keep finding newer ways to reach out to customers or achieve Top of Mind Association (TOMA) so as to generate positive customer interaction at his/her need identification stage. The better the organization scores at this zero moment of truth in terms of ease of searching for information to satisfy customer needs and wants, the higher would be the satisfaction of the customer. This leads to following hypothesis:

H1: There is a positive association between Zero Moment of Truth (ZMOT) and Customer Satisfaction (CS)

 The point when a consumer takes a decision to purchase a particular brand has been termed as "First Moment of Truth (FMOT)" while when the customer actually uses the purchased product

has been termed as the "Second Moment of Truth (SMOT) by A.G. Lafley, the Chairman, President and CEO of Procter &Gamble in 2005 (Hyken, 2106). The decision to share experiences of the brand has been termed as the Third or Ultimate Moment of Truth (UMOT) (Moran, et al., 2014). User Generated Content (UGC) on social networking sites (SNS) give a reflection of brand experience by users to other customers. Since these contents are not created by organizations, there is more authenticity and credibility attached to the content as real experiences of the customer with the brand are shared (Moran, et al., 2014). Companies need to engage the customers at each moment of truth, especially during UMOT and for this they adopt the usage of mobile and web apps offering personalized experiences and immediacy of engagement thereby facilitating delightful consumer experiences (Muzellec & Raghallaigh, 2018). This leads to following hypothesis:

H2: There is a positive association between Ultimate Moment of Truth (UMOT) and Customer satisfaction (CS)

Technology has become an enabler in customizing service offerings, helping recover from service failures thereby resulting in customer satisfaction. This infusion of technology has enabled both employees and customers in delivering and receiving goods/services. ATM machines, internet/mobile banking, online booking portals, E-commerce, click and mortar business models, customization of delivery schedules etc. are some technological interventions that have helped in delighting the customers through customization and flexibility. (Bitner, et al., 2000). Although technology has in many ways standardized the service delivery, still pure technology solutions can never replace the complex emotional connection between employee and customer during various frontline situations (Beaujean, et al., 2006).

The health and fitness industry has witnessed an increased promotion of physical Support required to get on to a fitness regimen is being increasingly accessed by individuals using the Mobile Fitness Applications (MFAs) on their smartphones. The basic presumption on which these MFAs work on is that fitness can be achieved through small and consistent actions that add up over time. Therefore, in the fast paced world where individuals are not able to follow a schedule to reach out for sports or any other fitness regimen, these applications remind the subscribers of their progress, the efforts required to reach desired goals and keep a track of varied things like the sleep quality, calories burnt, number of steps taken etc. The participants are also encouraged to share their progress with others in the social forum using the same application. This also serves to keep the participants motivated to keep on achieving their set targets although they are following the fitness regimen solo (Darin, et al., 2015).

Many mobile applications on fitness use the concept of gamification which makes fitness activities fun by focusing on competition and individual user's interactions with the group. Physical activities get significantly enhanced as compared to exercising alone. Furthermore, the physical activities have been found to be positively correlated with the number of messages exchanged between the participants (Chen & Pu, 2014). Sharing of fitness data with members belonging to social networks of the application adds to the motivation of following the fitness routine. However, many users are apprehensive of sharing their personal images or their fitness progress owing to the privacy concerns (Gui, et al., 2017).

Although wearable fitness trackers have gained a lot of acceptance and popularity amongst consumers desiring higher health and fitness levels, there is little evidence to support the user engagement and long term motivation of the customers. Over a period of time, in many cases the usage of mobile fitness applications decreases, as these mobile fitness applications do not motivate enough to follow a fitness routine. (Asimakopoulos, et al., 2017).

With more and more usage of technology in the fitness industry, there has been a surge in the usage of technology by gymnasiums and fitness centers. There is little evidence however to substantiate that technology plays a significant role to enhance the user experience with a gymnasium thereby leading to satisfaction. It has been observed that, of late, many gymnasiums are using technology to acquire and retain customers. Besides the usage of traditional media for mass communications, a number of gymnasiums today are utilizing technological platforms like mobile marketing and social media marketing to create awareness and also to attract customers with lucrative offers of memberships. Once a customer starts using the services at a gymnasium, technology is used to track the regularity of the customer, the change in body profile, like muscle mass, fat and water percentage and the basal metabolic rate. Many gymnasiums are maintaining customer relationships by sharing nutritional facts over mobile and even encourage the customers of their gymnasium to participate beyond regular exercise routine in various activities like outdoor sporting activities, walkathons or simply running with other members. The members are encouraged by the gymnasium to share their participation in various fitness activities with their family and friend circle by posting the photographs on their social media profiles as well as on the social media platform of the gymnasium. Members are also encouraged to share their before-after photographs on social media platforms and tag the gymnasium. Many gymnasiums, besides having members subscribing to the physical gymnasium facilities, have online classes where celebrities and prominent fitness trainers deliver live online fitness sessions and the participants can work-out

along with them and also track their activity level on the energy meter available for every device. Technology therefore is being increasingly used by the gymnasiums to connect with the customers and provide better services. However, there is no evidence to substantiate the role of technology on customer satisfaction during various moments of truth. This prompted us to frame the following hypothesis:

H3: The association between Zero Moment of Truth (ZMOT) and Customer satisfaction (CS)is mediated by Technology (T1)

H4: The association between Ultimate moment of Truth (UMOT) and Customer Satisfaction (CS) is mediated by Technology (T2)

Sarpong (2016) opined that unique challenges encountered during service delivery and the way they are handled, creates moments of truth. Service flexibility and service recovery are some factors which generates customer experiences and moment of truth. It not only builds customer satisfaction but also results in future customer decision making (Khan & Garg, 2015).   There are multiple attributes which contribute for generating moment of truth like; flexibility, pro-activity, risk perception, interpersonal skills and service recovery. Among multiple factors, moment of truth and peace of mind are most important in generating customer satisfaction and loyalty. In fact, moment of truth generated positive word of mouth communication by the customers. (Klaus, 2012). Provision of high quality services to customers is instrumental in attracting them to the organization and also forms the basis for customer satisfaction owing to which they keep coming back to the organization and exhibit loyalty (Yee, et al., 2010). The customer satisfaction in fitness centres have been found to lead to citizenship behaviours of the customers in the form of customer feedback and advocacy (Chiu, et al., 2015). A positive impact of customer satisfaction has been seen on the recommendations given, repurchase intention and increase in frequency of visits to the fitness centres (Ferrand, et al., 2010). It has also been pointed out that even if the customer is satisfied with the gymnasium facilities and services, he/she might not renew the membership and recommend the gymnasium to others (Hellier, et al., 2003). This leads to the following hypothesis:

H5: There is a positive association between Customer Satisfaction (CS) and Customer Loyalty (CL)

The conceptual model therefore developed for the study (Figure 1) is as follows:

Figure 1: Conceptual Model
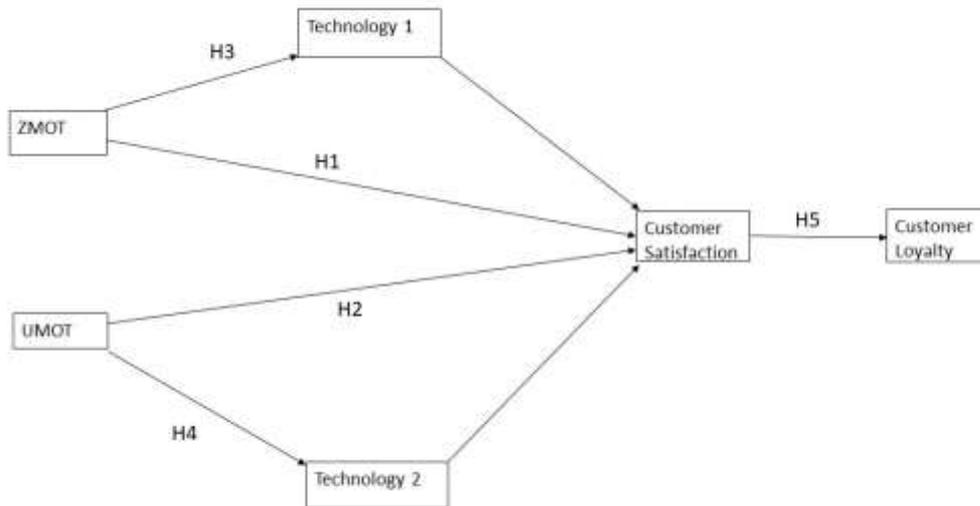
Research Methodology

Sample and Study Procedure

A pilot study on the research instrument developed was carried out on a sample of 65 respondents. The analysis of sample data showed positive and encouraging results, which were in line with the conceptual model. So, a larger study was carried out and sample was collected from various cities of India like Mumbai, Pune, Delhi-NCR, Bangalore, Kolkata, Indore, Jaipur, Lucknow, Hyderabad and Chennai and from various other tier II cities to cover all parts of India i.e. east, west, north, south and central regions. Data was collected using online and physical survey forms. A total of 326 responses were received out of which 265 responses were found suitable for the study and 51 responses were dropped due to incomplete information. The response rate was observed to be 81.28 %.

Measures

Zero Moment of Truth (ZMOT)

The study used three items developed by (Sarpong, 2016) for the measurement of Zero Moment of Truth (ZMOT) with minor modifications for this survey. Items like "My enquiry call for Gymnasium options was responded to my satisfaction", "I was provided with information about different fitness plans during my visit to Gymnasium for inquiry" and "I was warmly

greeted at the reception of gymnasium during my first visit" were used for measurement of Zero Moment of Truth (ZMOT).

Technology 1 (T1)

The Four items for measurement of Technology 1 were taken from instruments developed by Chen et al. (Chen, et al., 2012), George & Kumar (George & Kumar, 2014), Zarei (Zarei, 2010), Santos (Santos, 2003) and Nuseir et al. (Nuseir, et al., 2010) with minor modifications for his research. Four items like "Gymnasium website provides sufficient information", "Gymnasium website provided testimonials of users" and "Gymnasium website was easy to navigate" and "Gymnasium website design is attractive" were used to measure role of technology.

Ultimate Moment of truth (UMOT)

The three items for UMOT were adopted from scales developed by Al-alak and Alnawas (Al-alak, 2010) and Klaus and Maklan (Klaus & Maklan, 2012) with minor modifications for the present study. Items like "Gymnasium employee will provide better service in the future", "Gymnasium addressed to my problems when things went wrong" and "I will encourage friends and relatives to use this Gymnasium services" were included to measure UMOT.

Technology 2 (T2)

Technology at this stage (T2) was measured using items from research carried out by George and Kumar (George & Kumar, 2014), Chen et al. (Chen, et al., 2012), Zarei (Zarei, 2010), Nuseir et al. (Nuseir, et al., 2010) and Santos (Santos, 2003). It included items like "Gymnasium encourages me to post my progress on their website", Gymnasium website recommends me proper diet plan using my fitness data", "Gymnasium uses technology to update me about upcoming fitness events/challenges", "Reports through gadgets help me monitor my progress" and "Gymnasium uses technology to update me about upcoming fitness events/challenges".

Customer Satisfaction (CS)

Customer satisfaction was measured using Five items from the instruments developed by Tabaku & Kruja (Tabaku & Kruja, 2019) Klaus & Maklan (Klaus, 2012), Al-alak & Alnawas (Al-alak, 2010), Dagger et al. (Dagger, et al., 2007), Oliver et.al. (Oliver, et al., 1997) and Hubbert et al. (Hubbert, A. R., et al., 1995) with minor modifications. Items like "My feelings towards gymnasium are very positive", "I'm very satisfied with this Gymnasium as compared

to other gymnasiums" and "I am happy with my decision to join this gymnasium" etc. were used for measurement of Customer Satisfaction (CS).

Customer Loyalty (CL)

Customer Loyalty was measured using four items developed by Tabaku & Kruja (Tabaku & Kruja, 2019) , Pee et al. (Pee, et al., 2019), Wang et al. (Wang, et al., 2017), Khalifa & Liu (Khalifa & Liu, 2007), Hennig-Thurau et al. (Hennig-Thurau, et al., 2006), Parasuraman et al. (Parasuraman, et al., 2005), Oliver (Oliver, 1999) and Zeithaml et al. (Zeithaml, et al., 1996). Minor modification in the items was done suitability of this study. Customer Loyalty (CL) items included items like "I will continue using this gymnasium next year as well" or "I will recommend this Gymnasium to others". All items in the instrument were presented on a Five point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5). The details of the attributes studied for the research are presented in Table 1.

Table 1: Moment of Truth Study Attributes

S. No.	Attribute	Items	Adopted from
1	**ZMOT** 1. My enquiry call for Gymnasium options was responded to my satisfaction. 2. I was provided with information about different fitness plans during my visit to Gymnasium for inquiry. 3. I was warmly greeted at the reception of gymnasium during my first visit	3	Sarpong Sam (2016).
2	**Technology 1** 1. Gymnasium website provides sufficient information. 2. Gymnasium website provided testimonials of users. 3. Gymnasium website was easy to navigate 4. Gymnasium website design is attractive	4	Chen, Rai-Fu; Hsiao, Ju-Ling and Hwang, Hsin-Ginn (2012);George, Ajimon; Gireesh Kumar, G. S. (2014); Zarei S (2010);Santos J (2003); Nuseir MT, Akroush MN, Mahadin BK, Bataineh AQ (2010).

3	**UMOT** 1. Gymnasium employee will provide better service in the future. 2. Gymnasium addressed to my problems when things went wrong. 3. I will encourage friends and relatives to use this Gymnasium services.	3	Al-alak, Basheer. A.M. and Alnawas, Ibrahim, A.M. (2010); Klaus, P. & Maklan, S. (2012).
4	**Technology 2** 1. Gymnasium encourages me to post my progress on their website. 2. Gymnasium website recommends me proper diet plan using my fitness data. 3. Gymnasium offers me incentives like discount coupons, extension of membership etc. for my online reviews. 4. Reports through gadgets help me monitor my progress. 5. Gymnasium uses technology to update me about upcoming fitness events/challenges.	5	Chen, Rai-Fu; Hsiao, Ju-Ling and Hwang, Hsin-Ginn (2012); George, Ajimon; Gireesh Kumar, G. S. (2014); Zarei S (2010); Santos J (2003); Nuseir MT, Akroush MN, Mahadin BK, Bataineh AQ (2010).
5	**Customer Satisfaction** 1. My feelings towards gymnasium are very positive. 2. I'm very satisfied with this Gymnasium as compared to other gymnasiums. 3. I feel motivated to come to gymnasium. 4. I am happy with my decision to join this gymnasium. 5. The service offered at this gymnasium meets my expectations.	5	Al-alak, Basheer. A.M. and Alnawas, Ibrahim, A.M. (2010); Dagger, T., Sweeney, J. & Johnson, L. (2007); Tabaku, Elvira and Kruja Drita (2019); Hubbert, A. R., Garcia Sehorn, A. & Brown, S. W. (1995); Oliver et. al. (1997); Klaus, Philipp and Maklan Stan (2012).
6	**Customer Loyalty** 1. I will continue using this gymnasium next year as well.	4	Tabaku, Elvira and Kruja Drita (2019). Pee, LG; Jiang, JJ and Klein G and (2019); Oliver, R. L. (1999); Khalifa,

2. I will recommend this Gymnasium to others. 3. If the Gymnasium raise the price of my fitness plan, I would still continue to be a member of this Gymnasium. 4. If another gymnasium offers similar services, I would still prefer this gymnasium.	M., & Liu, V. (2007); Wang, Ze; Singh, Surendra N.; Mishra, Sanjay; Ambrose, Maureen and Biernat, Monica (2017); Hennig-Thurau, T.; Groth, M.; Paul, M. and Gremler, D. D. (2006); Zeithaml, V.; Berry, L. and Parasuraman, A. (1996); Parasuraman, A., Zeithaml, V. & Malhotra, A. (2005).

Source: Prepared by authors from literature review

Control Variables

Demographic variables like Age, Gender, Marital Status, Income, Reason for Joining Gymnasium, Distance from Gymnasium etc. were controlled by randomisation in the present study and are presented in Table 2.

Table 2: Demographic details of respondents

Gender	Age	Marital Status	Annual Income	Reason for Joining Gymnasium	Distance from Gymnasium
Males = 139, Females = 126	Below 20 Years = 16	Married = 104 Single = 161	Less than 5 Lac = 116	As new year Resolution = 9	Within one Kilometer = 94
	21 – 30 years = 221		5 - 10 Lac = 137	Body Building = 46	1 – 3 Kilometers = 109
	30-35 years = 09		Above 10 Lac = 12	Managing Lifestyle Diseases = 16	More than three Kilometers = 62
	Above 35 Years = 19			Healthy Living = 117	
				Weight Loss = 77	

Source: Results compiled by authors from data analysis

Data Analysis & Interpretation

Common Method Variance

To overcome common method variance problem among variables, Harman's single factor test was employed in the present study (Podsakoff, et al., 2003). Since the first factor accounted for 38.03 percent of the total variance extracted, the concern for Common Method Variance (CMV) was overruled as the problem of CMV is present when one general factor accounts for more than 50 % variance.

Validity and Reliability

The mean, standard deviation and correlation details are presented in Table 3(a) and Table 3(b) for ZMOT and UMOT models respectively.

Table 3 (a): Mean, SD, Correlation and Reliability for ZMOT model

Variable	Mean	SD	1	2	3	4	5	6
1. Age	24.92	9.03	-					
2. Gender	1.475	0.50	-0.23	-				
3. ZMOT	12.02	2.11	0.28	-0.015	*(0.821)*			
4. Technology (T1)	15.25	2.77	0.17	-0.029	0.62**	*(0.767)*		
5. Customer Satisfaction	20.19	3.31	0.33	0.024	0.69**	0.74**	*(0.846)*	
6. Customer Loyalty	15.75	2.84	0.18	0.021	0.54**	0.66**	0.74**	*(0.811)*

Note: N = 265, ** Correlation significant at 0.01 level; Reliabilities are depicted in diagonals and in italics

Source: Results compiled by authors from data analysis

Table 3 (b): Mean, SD, Correlation and Reliability for UMOT model

Variable	Mean	SD	1	2	3	4	5	6
1. Age	24.92	9.03	-					
2. Gender	1.475	0.50	-0.23	-				
3. UMOT	12.08	1.96	0.15	0.03	*(0.840)*			
4. Technology (T2)	19.66	3.92	0.25	0.10	0.58**	*(0.844)*		
5. Customer Satisfaction	20.19	3.31	0.33	0.02	0.69**	0.77**	*(0.846)*	
6. Customer Loyalty	15.75	2.84	0.18	0.02	0.67**	0.76**	0.74**	*(0.811)*

Note: N = 265, ** Correlation significant at 0.01 level; Reliabilities are depicted in diagonals and in italics.

Source: Results compiled by authors from data analysis

The Validity and Reliability is presented in Table 4 (a) for ZMOT model & Table 4 (b) for UMOT model and was measured through convergent and discriminant validity.

Table 4 (a): Assessment of Reliability and Validity for ZMOT model

Variable	CR	AVE	Cronbach's alpha	Discriminant Validity
Zero Moment of Truth (ZMOT)	0.861	0.675	0.755	0.821
Technology 1 (T1)	0.849	0.589	0.765	0.767
Customer Satisfaction	0.926	0.716	0.900	0.846
Customer Loyalty	0.884	0.657	0.822	0.811

Source: Results compiled by authors from data analysis

Table 4 (b): Assessment of Reliability and Validity for UMOT model

Variable	CR	AVE	Cronbach's alpha	Discriminant Validity
Ultimate Moment of truth (UMOT)	0.878	0.706	0.791	0.840
Technology 2 (T2)	0.925	0.712	0.897	0.844
Customer Satisfaction	0.926	0.716	0.900	0.846
Customer Loyalty	0.884	0.657	0.822	0.811

Source: Results compiled by authors from data analysis

The Average Variance Extracted (AVE) was used for measurement of convergent validity. The recommended value of AVE > 0.5 was followed. All values were observed to be more than 0.5. The discriminant validity was established using Fornell and Larcker recommendations (Fornell & Larcker, 1981), which stated that discriminant validity should be more than correlation values of the variables. The discriminant validity was established using AVE values. The reliability was established through Composite Reliability (CR) and Cronbach's alpha values. Data analysis was done using SPSS AMOS and SPSS Andrew Hays Process v3.4 Model 4.

Hooper et al. (Hooper, et al., 2008) and MacCallum et al. (MacCallum, et al., 1996) proposed the acceptable values for model fit are; (χ^2/df) minimum 2.0 with better model fit for higher values; GFI = 0.95 and above; AGFI = 0.90 and above; RMSEA preferably below 0.08 (for good fit) and RMSEA between 0.08 – 0.10 (average or fair fit); and RMR as low as possible (preferably below 0.10). The observed values are presented in Table 5.

Table 5: Statistical Parameters for the Models

Parameter	Model 1 *ZMOT – T1 – Customer Satisfaction – Customer Loyalty*	Model 2 *UMOT – T2 – Customer Satisfaction – Customer Loyalty*
χ^2	8.503	43.91
df	2	2
χ^2/df	4.251	21.955
GFI	0.984	0.965
AGFI	0.922	0.902
RMSEA	0.091	0.098
RMR	0.092	0.112

Source: Results compiled by authors from data analysis

All relationships were tested at $\alpha = 0.05$ and were found significant. The R^2 value was observed to be 0.634 for ZMOT model with a significant p value, which indicates a decent model fit for ZMOT model. In the case of UMOT model, the R^2 value was observed to be 0.713 which is again a decent fit. The R^2 value for Customer Satisfaction (CS) – Customer Loyalty (CL) was observed to be 0.721.

The mediation effect for Technology (T1) between Zero Moment of Truth (ZMOT) and Customer Satisfaction (CS) as well as mediation effect of Technology 2 (T2) between UMOT and Customer satisfaction was studies by comparison of direct and indirect effects. The null and alternate hypothesis for mediation effects are stated as under:

H_0: Indirect Effect = 0; H_1: Indirect effect $\neq$ 0

The value Zero falls outside the lower limit values (LLCI) and upper limit values(ULCI) for both the models, and is statistically significant. Sobel test was performed (Sobel, 1982) on data for model 1 to further confirm whether the mediator variable Technology (T1) has an influence between independent variable ZMOT and dependent variable Customer Satisfaction (CS). The Sobel test p value was found significant which further indicates that Technology (T1) has a significant but partial mediation effect betweeen ZMOT and Customer satisfaction (CS).

Sobel test was also carried out for the second model whether mediator variable Technology 2(T2) was found to influence relationship between independent variable UMOT and dependent variable Customer Satisfaction (CS). The Sobel test p value was found significant for this model also which further indicates that Technology (T2) has a significant but partial mediation effect between UMOT and Customer satisfaction (CS). So, the null hypotheses for both the models stands rejected and alternate hypotheses are accepted.

Discussion

A comparison of obtained values with recommended values for the model 1 between ZMOT and Customer Satisfaction with partial mediation by Technology 1 (T1) indicates that the model is a moderate fit. In other words, Technology (T1) does partially moderates the relationship between zero moment of truth (ZMOT) and customer satisfaction (CS). Although technology is being widely used by various retail organizations to attract and acquire the customers, the same has not so much explored by gymnasiums. The gymnasiums and fitness centres are however catching up and are increasingly using technology to attract customers. The gymnasiums like Cure Fit (Cult) are offering online fitness sessions through Cult fit where the fitness routines can be followed by customers from the comfort of their home and they can work out with celebrities and trainers during their live or recorded programme. There are fitness programmes designed for beginners, senior ctizen and also advanced programmes for developing endurance and reaching higher fitness levels. Cure fit also offers packages like Eat fit and Mind Fit where customers can get healthy recipes and can do meditation respectively. Fitness Gears are also available which can be procured online (Curefit, n.d.). Gymnasiums like Any Time Fitness (ATF) also provide assistance to customers for finding the gym in their desired city. The gymnasium operates 24X7 and has various technological interventions like the swipe card for 24 hour access and also round the clock security. With their membership cards they can use any of the ATF gymnasium while they travel to places for leisure and work. Similar to Curefit gymnasium, Anytime fitness has blogs where the discussions on health and fitness serve to encourage the customers to join the gymnasium (Fitness, n.d.). Therefore slowly but steadily technology is being increasingly utilised by gymnasiums and the customers are getting influenced by technological interventions taken by gymnasium to enhance customer satisfaction.

The second model which is Ultimate Moment of Truth (UMOT) and Customer Satisfaction with partial mediation by Technology 2 (T2) is a weak fit. The customer may be less interested in posting progress results on technological medium or websites after availing gymnasium services. He/she may feel it as a breach of his personal privacy or may not be interested in

availing fitness related advices like fitness run, fitness events etc. Multiple reasons may play a role in the latter case like; customer may not have achieved desired results either due to his body tendency or workout regime or diet plan during fitness regime or any other reason. At the same time, customer may not be interested in maintaining the fitness diet plan due to multiple reasons like taste, preference etc. or may not be interested in availing fitness challenges posed by the gymnasium on websites. Even, the marketing gimmicks like discount coupons or extension of membership or posting fitness results on gymnasium website might not lure a customer and therefore the ultimate moment of truth wherein the customer is usually expected to post the reviews of his/her experience with the product/service did not exhibit a strong model fit. This study indicates that technology has a better impact on customer satisfaction prior to availing gymnasium services when the customer is enquiring about the same and evaluating options before making his/her decision for gymnasium services as compared to the later stage when he is using the gymnasium and achieving results. Gymnasium service providers therefore can focus on engaging more with the customers by usage of technology. Since the adoption and modernization of gymnasiums is relatively new in India, there are higher chances that with increase in competition, the adoption of technology for customer acquisition, servicing and retention increases for gymnasium and a similar study at a later stage might result in a better model fit.

What Does This Article Add

Although technology has been widely used in various sports but its role in attracting and satisfying customers in a gymnasium has not been researched so far. Almost every business today is using technology for building customer connect so as to build a loyal customer base. Experiential purchases such as gymnasium memberships depend a lot on a positive word of mouth and referrals. Technology can enable the gymnasiums to devise ways for customer acquisition and retention. However, without a complete knowledge of the impact of technology during various interactions of gymnasium with its customers, it would be difficult for formulating any concrete plans for attracting and retaining customers. The results of the present study will provide inputs which gymnasium owners can apply to increase their customer acquisition and loyalty.

References

Afsanepurak, S., Hossini, R., & Seyfari, M. (2012). A Comparison of Customers` Satisfaction with Aerobics and Bodybuilding in Public and Private Gyms. *International Journal of Academic Research in Business and Social Sciences, 2*(1), 522-528.

Al-alak, B. A. (2010). Evaluating the Effect of Marketing Activities on Relationship Quality in the Banking Sector: The Case of Private Commercial Banks in Jordan. *International Journal of Marketing Studies, 2 (1)* , 78-91.

Appleton, L. (2012). Assuring quality using "moments of truth" in super-converged services. *Library Management, 33 6/7*, 414 - 420.

Asimakopoulos, S., Asimakopoulos, G., & Spillers, F. (2017). Motivation and User Engagement in Fitness Tracking:Heuristics for Mobile HealthcareWearables. *In Informatics, 4*(1), 5.

Beaujean, M., Davidson, J., & Madge, S. (2006). The "Moment of Truth" in Customer Service. *Mckinsey Quarterly, 1*(Feb), 62-73.

Berndt, A., Herbst, F., & Roux, L. (2004). Customer Relationship Management Implementation Within a Retail Banking Environment: A South African Perspective. *Southern African Business REview, 8*(2), 31-41.

Berry, L., Carbone, L., & Haeckel, S. (2002a). Managing the Total Customer Experience. *MIT Sloan Management Review, Spring*, 85-89.

Bitner, M. (1990). Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses. *Journal of Marketing, 54*(April), 69-82.

Bitner, M. (1995). Building Service Relationships:It's All About Promises. *Journal of the Academy of Marketing Science, 23*(4), 246-251.

Bitner, M. J., & Brown, S. W. (2000). Technology Infusion in Service Encounters . *JOURNAL OF THE ACADEMY OF MARKETING SCIENCE, 8 (1)* , 138-149.

Bitner, M., Brown, S., & Meuter, M. (2000). Technology Infusion in Service Encounters. *Journal of the Academy of Marketing Science, 28*(1), 138-149.

Brooks , R. (2000). Why Loyal Employees and Customers Improve the Bottom Line. *Journal of Quality and Participation, 23*(2), 40-44.

Chen, R., Hsiao, J., & Hwang, H. (2012). Measuring customer satisfaction of Internet banking in Taiwan: scale development and validation. *Total Quality Management & Business Excellence, 23*(7-8), 749-767.

Chen, Y., & Pu, P. (2014). HealthyTogether: Exploring Social Incentives for Mobile Fitness Applications. *In Proceedings of the second international symposium of chinese chi* , 25-34.

Chiu, W., Kwag, M.-S., & Bae, J.-S. (2015). Customers as partial employees: the influences of satisfaction and commitment on customer citizenship behavior in fitness centers. *Journal of Physical Education and Sport, 15*(4), 627-633.

Christopher, M. P. (2002). *Relationship Marketin.* Oxford: Oxford: Butterworth-Heinemann, ISBN-13: 978-0750648394 .

Cina, C. (1990). Five Steps to Service Excellence. *Journal of Services Marketing, 4*(2), 39-47.

Curefit. (n.d.). *cult.fit*. Retrieved from cure.fit: https://www.cure.fit/cult/home

Dagger, T., Sweeney, J., & Johnson, L. (2007). A hierarchical model of health service quality: scale development and investigation of an integrated model. *Journal of Service Research, 10*(2), 123-142.

Darin, T., Almeida, R., Carneiro, N., Silva, D., & Sánchez, J. (2015). Motivational Resources for Physical Exercises: Evaluation of User Experience in Mobile Fitness Applications. *Nuevas Ideas en Informática Educativa TISE*, 323-332.

Edvardsson, B., Gustafsson, A., Johnson, M., & Sanden, B. (2000). *New Service Development and Innovation in the New Economy.* Lund: Studentlitteratur.

Ferrand, A., Robinson, L., & Florence, P. (2010). The Intention-to-Repurchase Paradox: A Case of the Health and Fitness Industry. *Journal of Sport Management, 24*, 83-105.

Fitness, A. (n.d.). *ANYTIME FITNESS*. Retrieved from anytimefitness.com: https://www.anytimefitness.com/membership/

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

George, A., & Kumar, G. (2014). Impact of service quality dimensions in internet banking on customer satisfaction. *Decision, 41*(1), 73-85.

Godarzvand, M., Yousefi, S., & Delshad, M. (2016). The relationship between management commitment to service quality and organizational output according to mediating role ofthe effective participation of employees in the banks of Gilan province. *Journal of Development and Transformation Management, 24*(2), 39-50.

Gui, X., Chen, Y., Caldeira, C., Xiao, D., & Chen, Y. (2017). When Fitness Meets Social Networks: Investigating Fitness Tracking and Social Practices on WeRun. *Social Computing and Health*, 1647-1659.

Gupta Abhinav. (2016). Service quality and delivery in banking services—An Indian perspective. *Cogent Business & Management, 3: 1243504*, 2-14.

Gupta, A. (2016). Service quality and delivery in banking services—An Indian perspective. *Cogent Business & Management, 3*(1), 1243504.

Hellier, P., Geursen, G., Carr, R., & Rickard, J. (2003). Customer repurchase intention:A general structural equation model. *European Journal of Marketing, 37*, 1762–1800.

Hennig-Thurau, T., Groth, M., Paul, M., & Gremler, D. (2006). Are all smiles created equal? How emotional contagion and emotional labor affect service relationships. *Journal of Marketing, 70*(3), 58-73.

Heymann, M. (2015). Spotlight on service: Integrating workforce management with employee engagement to optimize customer satisfaction and profitability. *Global Business and Organizational Excellence, 34*(5), 6-12.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53-60.

Howat, G. (2007). Predictors of Customer Loyalty for Aquatic and Fitness Centres. *12th Congress European Association for Sport Management*, (pp. 309-312).

Hubbert, A. R., A., Sehorn, A., & Brown, S. (1995). Service expectations: the consumer versus the provider. *International Journal of Service Industry Management, 6*(1), 6-21.

Hui, S., Huang, Y., Suher, J., & Inman , J. (2013). Deconstructing the "first moment of truth": Understanding unplanned consideration and purchase conversion using in-store video tracking. *Journal of Marketing Research, 50*(4), 445-462.

Hultman, J. (2005). The Moment of Truth: A key to Successful Services Marketing. *INTI Journal, 1*(5), 363-370.

Hyken, S. (2106, April 9). *The new Moment of Truth in Business*. Retrieved from Forbes.com: https://www.forbes.com/sites/shephyken/2016/04/09/new-moment-of-truth-in-business/#492b660838d9

IBEF. (2019, December). *IBEF, India Brand Equity Foundation*. Retrieved February 12, 2020, from India Healthcare Industry Analysis: https://www.ibef.org/industry/healthcare-presentation

Inc.com. (2017, October 3). *5 Steps to Winning the Zero Moment of Truth*. Retrieved December 19, 2019, from Inc.com: https://www.inc.com/entrepreneurs-organization/5-steps-to-winning-zero-moment-of-truth.html

Khalifa, M., & Liu, V. (2007). Online consumer retention: contingent effects of online shopping habit and online shopping experience. . *European Journal of Information Systems, 16*(6), 780-792.

Khan, I., & Garg, R. J. (2015). Customer Service Experience in Hotel Operations: An Empirical Analysis. *Procedia - Social and Behavioral Sciences, 189 (2015)* , 266-274.

Khan, P. a. (2012). Customer Service Strategies and Critical Success Factors in Managing Customer Relationships in Banking Sector . *Innovation in Banking and Finance, 1, ISSN: 2277-7830 (print)*, 41-44.

Khan, P., & Chouksey, R. (2012). Customer Service Strategies and Critical Success Factors in Managing Customer Relationships in Banking Sector. *IBMRD's Journal of Management & Research, 1*(1), 41-44.

Klaus, P., & Maklan, S. (2012). Towards a Better Measure of Customer Experience. *International Journal of Market Research, 55*(2), 227-246.

Löfgren, M. (2005). Winning at the First and Second Moments of Truth: An Exploratory Study. *Managing Service Quality: An International Journal, 15*(1), 102-115.

Lofgren, M. (2005). Winning at the first and second moments of truth: an exploratory study . *Managing Service Quality, 15 (1)* , 102-115.

Lofgren, M., Witell, L., & Gustafsson, A. (2008). Customer Satisfaction in the First and Second Moments of Truth. *Journal of Product & Brand Management, 17*(7), 463-474.

Lotz, C. (2009). Customer service quality at selected Commercial Health and Fitness centres in KwaZulu-Natal. *Doctoral Dissertation*.

MacCallum, R., Browne, M., & Sugawara, H. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*(2), 130.

Menon, K. a. (2007). Building customers' affective committment towards retail banks: The role of CRM in each "moment of Truth". *Journal of Financial Services Marketing, 12 (2)* , 157–168 .

Menon, K., & Connor, A. (2007). Building Customers' Affective Commitment towards Retail Banks: The role of CRM in each ' Moment of Truth '. *Journal of Financial Services Marketing, 12*(2), 157-168.

Mishra, A. (2009). A Study on Customer Satisfaction in Indian Retail Banking. *The IUP Journal of Management Research, Vol. VIII (11)*, 45-61.

Moran, G., & Muzellec, L. a. (2014). Consumer Moments of Truth In the Digital Context; How "Search" and "E-Word of Mouth"Can Fuel Consumer Decision Making. *Journal of Advertising Research, DOI: 10.2501/JAR-54-2-200-204*, 200-204.

Moran, G., Muzellec, L., & Nolan, E. (2014). Consumer Moments of Truth In The Digital Context: How "Search" and "E-Word of Mouth"Can Fuel Consumer Decision Making. *Journal of Advertising Research, 54*(2), 200-204.

Moran, G., Muzellec, L., & Nolan, E. (2014). Consumer moments of truth in the digital context: How "search" and "e-word of mouth" can fuel consumer decision making. *Journal of Advertising Research, 54*(2), 200-204.

Muzellec, L., & O'Raghallaigh, E. (2018). Mobile technology and its impact on the consumer decision-making journey: how brands can capture the mobile-driven "Ubiquitous" moment of truth. *Journal of Advertising Research, 58*(1), 12-15.

Muzellec, L., & Raghallaigh, E. (2018). Mobile Technology and Its Impact on the Consumer Decision Making Journey: How Brand can Capture The Mobile-Driven "Ubiquitous" Moment of Truth. *Journal of Advertising Research, 58*, 12-15.

Nuseir, M., Akroush, M., Mahadin, B., & Bataineh, A. (2010). The effect of e-service quality on customers' satisfaction in banks operating in Jordan: an empirical investigation of customers' perspectives. *International Journal of Services, Economics and Management, 2*(1), 80-108.

Oliver, R. (1999). Whence consumer loyalty? *Journal of Marketing, 33*(4_suppl1), 33-44.

Oliver, R., Rust, R., & Varki, S. (1997). Customer delight: foundations, findings, and managerial insight. *Journal of Retailing, 73*(3), 311.

Parasuraman, A., Zeithaml, V., & Berry, L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing, 58*(Jan), 111–124.

Parasuraman, A., Zeithaml, V., & Malhotra, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research, 7*(3), 213-233.

Pee, L., Jiang, J., & Klein, G. (2019). E-store loyalty: Longitudinal comparison of website usefulness and satisfaction. *International Journal of Market Research, 61*(2), 178-194.

Peppers, D., Rogers, M., & Dorf, B. (1999). Is Your Company Ready for One -to - One Marketing. *Harvard Business Review, 77*(1), 151-160.

Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879.

Research and Markets. (2019, February 22). Retrieved March 19, 2020, from Globenewswire.com: https://www.globenewswire.com/news-release/2019/02/22/1740160/0/en/Indian-6-Bn-Sports-and-Fitness-Goods-Market-2019-2024-Industry-Trends-Share-Size-Growth-Opportunity-and-Forecasts.html

Santos, J. (2003). E-service quality: a model of virtual service quality dimensions. *Managing Service Quality: An International Journal*.

Sarpong, S. (2016). The Service Industry and the "Moment of Truth": The Quest for the Holy Grail. *Athens Journal of Tourism, 3*(1), 25-40.

Sarpong, S. (2016). The Service Industry and the" Moment of Truth": The Quest for the Holy Grail. *Athens Journal of Tourism, 3*(1), 25-40.

Shostack, G. (1985). Planning the Service Encounter. In J. Czepiel, M. Solomon, & C. Surprenant, *The Service Encounter* (pp. 243-254). Lexington, MA: Lexington Books.

Sobel, M. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290-312.

Soderlund, M., & Julander, C.-R. (2009). Physical attractiveness of the service worker in the moment of truth and its effects on customer satisfaction. *Journal of Retailing and Consumer Services, 16*, 216-226.

Tabaku, E., & Kruja, D. (2019). An integrated framework for customer loyalty in the hotel sector. *Serbian Journal of Management, 14*(1), 205-221.

Terzoglou, M., Papadopoulos, P., Koronas, V., & Matsaridis, A. (2012). Quality Assessment of Private Fitness Centers in Eastern Thessaloniki. *Studies in Physical Culture and Tourism, 19*(4), 196-200.

Thompson, B. (2006). Customer Experience Management:The Value of "Moments of Truth". *Customer Think Corporation white paper, Customer Think*, 1-18.

Underwood, R., Klein, N., & Burke, R. (2001). Packaging Communication: Attentional Effects of Product Imagery. *Journal of Product & Brand Management, 10*(7), 403-422.

Vargo , S., & Lusch , R. (2004). Evolving to a New Dominant Logic for Marketing. *Journal of Marketing, 68*(January), 1-17.

Wang, Z., Singh, S., Li, Y., Mishra, S., Ambrose, M., & Biernat, M. (2017). Effects of employees' positive affective displays on customer loyalty intentions: An emotions-as-social-information perspective. *Academy of Management Journal, 60*(1), 109-129.

Yagil, D. (2013). Moments of Truth: Examining Transient Authenticity and Identity in Service Encounters. *Athens Journal of Tourism, 56*(2), 473-497.

Yagil, D., & Medler-Liraz, H. (2013). Moments of truth: Examining transient authenticity and identity in service encounters. *Academy of Management Journal, 56*(2), 473-497.

Yee, R., Yeng, A., & Cheng, E. (2010). An Empirical study of employee loyalty, service quality and firm performance in the service industry. *International Journal of Production Economics, 124*(1), 109-120.

Zarei, S. (2010). Electronic service quality evaluation methods for online-banking system. *International Journal of Computer Science and Technology, 1*(2).

Zehra, S., & Ali, T. (2017). Impact of Employee's Behavior and Efficiency on Customer Satisfaction in Banking Sector of Pakistan. *International Journal of Global Business, 10*(2), 35-48.

Zeithaml, V., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. . *Journal of Marketing, 60*(2), 31-46.