ORIGINAL ARTICLE

Efficacy of COVID-19 screening system and customer satisfaction in banks: moderating role of the perceived threat and health risk

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Abstract

During the pandemic of COVID-19, the customers who visit the bank should be sure about the safety measures taken by the bank which may result in a positive image. This study aimed to examine the influence of the efficacy of the screening system of COVID-19 placed in the retail banks in India on customer satisfaction mediated by the brand image. The influence will be checked under the moderating effect of the perceived threat of COVID-19 and the perceived health risk of the customers. The data from 224 customers were collected who have visited banks in India since March 2020. The data were analysed through the partial least square method of structural equation modelling (PLS-SEM) using SmartPLS 3.2. The findings of the study suggested that the efficacy of the screening system of COVID-19 positively influences the brand image and customer satisfaction. The moderating role of the perceived health risk of the customers and perceived threat of COVID-19 has been confirmed between the screening system of COVID-19 and brand image. Further, brand image has strongly influenced customer satisfaction. The study will be helpful for the retail banks of India and worldwide to understand the need and importance of a screening system for COVID-19 symptoms in the banks to ensure the safety and well-being of its customers and employees.

Keywords COVID-19 · Customer satisfaction · Brand image · Perceived threat · Banks · India

Introduction

COVID-19 pandemic has disrupted every aspect of life and is going to change the course of consumption patterns. The pandemic of COVID-19 started on 31 December 2019 after the World Health Organization (WHO) witnessed the first case in Wuhan, China. A global health emergency was declared on 30 January 2020 by WHO, the sixth such emergency in history. WHO declared this infectious disease as pandemic based on its spread all over the world. The fatality rate of this virus is comparatively low than previous pandemics; however, the infection rate of the virus is high. On this day, the total number of people infected by this virus is 104, 458, 203 across the globe and 10,778,206 in India,[1] which stands second in the list after the USA. With the surge in the number of infections and deaths due to COVID-19 and

its highly infectious nature, there has been a necessity for a safe and efficient screening system (Kwon et al. 2020). The screening system may consist of a questionnaire containing personal information, epidemiologic factors and declaration of related symptoms at the entrance gate, body temperature examination using a contactless thermometer or an automated temperature screening machine.

Human behaviour changes during outbreaks of the pandemic, and maintaining social distancing is one of those behaviours which is evident during infectious disease spread (Poletti et al. 2012).

To slow down the spread of infectious viruses like COVID-19, it is essential to enforce preventative behaviours like social distancing and screening practices, and earlier detection of infection is advisable (Makhanova and Shepherd 2020). Social distancing should be enforced by the government by cancelling the large gathering events and closing the educational institutes and workplaces (Kleczkowski et al. 2015). This is a useful policy to overcome the growing cases when no vaccines are available (Hollingsworth et al. 2011). Usually, everyone is at risk to catch the infection;

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however, a study revealed that men are more vulnerable to catch COVID-19 infection (Sun et al. 2020). This drive to avoid an actual or potential threat of a disease is essential for survival from an evolutionary viewpoint (Altizer et al. 2003; Roy and Kirchner 2000). The potential threat of virus spread can only be controlled when there are efficient screening systems in place at the entrance of offices, schools, colleges, markets, malls and other crowded places. There is a need to enlighten people about the potential threat of the virus and need to get screened to save themselves, their family and others around. Kim et al. (2020) suggested that more information on the COVID-19 could reduce the perceived threat of this virus. It will be interesting to explore what effect the screening system in banks particularly has on the perception of customers related to the brand image of the bank.

Magid et al. (2006) stated that brand image is a response of customers towards a brand name, logo or impression and represents the product quality too. Branding is used to ascertain the product or service offered and distinguishes it from its rivals. Keller (1993) explained brand image as a perception of a brand in the minds of customers which helps them to recall the brand and association with specific product class and customer needs (Keller 2003). It is impossible to imitate this intangible asset which can result in sustainable performance (Roberts and Dowling 2002). The brand image helps consumers to identify their needs and to distinguish different brands (Anwar et al. 2011). Bravo et al. (2010) validated the scale to measure the brand image of retails banks which comprise service offering, location, social responsibility, global impression and personnel. The placement and facility of the screening system of COVID-19 symptoms is a social responsibility of a bank and will help the bank to enhance its image in the eyes of customers. The screening system is not the only indication of saving the bank employees and customers from potential virus threat but also makes customers feel safe and satisfied with the services.

The idea of customer satisfaction has been there before the inception of marketing. The satisfied customer usually indulges in word of mouth and promotes the business of the company (Anderson 1998). Fornell (1992) explained how customer satisfaction indicates loyalty, reduced price elasticity, reduced brand switching, lower cost on retention and enhanced brand reputation. Customer satisfaction leads to customer loyalty (Pham and Ahammad 2017) and ensures a steady and stable income of cash flows (Reichheld and sasser 1990). With the rise in competition in retail banking in India, banks always hunt for the means to attract new customers, satisfy and retain them (Bhatt 2020). Customer satisfaction is a signal of the customer's faith in the likelihood of a service leading to a positive feeling (Udo et al. 2010). Satisfied customers often engage in repurchase (Filieri and Lin 2017) and increase the chances of high usage level and revisit (Rita et al. 2019). Pont and McQuilken (2005) suggested that customer satisfaction is an important factor that is not an end itself in baking; however, it strengthens the relationship between a customer and bank.

Thus, this study aims to examine the influence of the efficacy of the COVID-19 symptom screening system on the brand image which may lead to customer satisfaction. The relationship between the COVID-19 symptom screening system and brand image is observed under the moderating effect of the perceived threat of COVID-19 and perceived health risk. It is expected that a good screening system at the entrance of the bank will enhance the brand image of the bank in the eyes of visiting customers. However, customers who have a high/low perceived threat and perceived health risk associated with COVID-19 may moderate the relationship between the efficacy of a screening system and the brand image of the bank. The study will be helpful for the banks to understand the need for such screening systems to enhance their brand image. It will also help them to recognize the perceived health risk of their customers so that they can make necessary arrangements for their safe visits to the banks. The study will contribute to the existing literature by identifying the responsive approach of banks towards the health crisis to safeguard their employees and customers which can enhance their brand image and make customers satisfied. The study will also contribute to the existing body of knowledge by suggesting that the non-financial services offered to the customers can also enhance their satisfaction.

Literature review

Efficacy of COVID-19 screening system and brand image

In the financial sector, brand image can have many dimensions as pointed by various past studies, e.g. Customer benefit (Mandel et al. 1981), Service offering and Physical setting (LeBlanc and Nguyen 1996) and Service-scape (O'Cass and Grace 2004). Na et al. (1999, (p. 171) argued that "image cannot be measured by attribute measurements alone but must include measurements of consumers' perceptions of the value and benefits attainable from using the brand". During the COVID-19 pandemic, banks usually don't get affected directly by the pandemic; however, fewer business activities and consumption lead to indirect effects (Baber 2020), e.g. customers were reluctant to visit banks. Studies suggested that the pandemic of COVID-19 will bring a positive attitude in people towards branchless or internet banking (Shahabi et al. 2020). However, Ozili and Arun (2020) confirmed that card payments and FinTech transactions reduce as people try to save money for future uncertainties. This implies that all customers will not move towards online banking and visit banks regularly. To prevent symptomatic and infected

customers from entering the bank premises or building, a screen system will be required. There is considerable interest in establishing symptom-based surveillance systems at various offices and crowded places (Callahan et al. 2020). One of the first things to ensure good health (customers and employees) is the development of a rapid and effective multimodal COVID-19 screening process (Reeves et al. 2020). Screening systems serve as frontiers for inhibiting community transmission of COVID-19, and South Korea benefited from forming COVID-19 screening systems in all administrative areas to avert the spread of community infection (Kim et al. 2021). However, Callahan et al's. (2020) symptom-based screening may not be an efficient strategy to measure an individual's likelihood of having COVID-19. Developing and installing budgeted swift screening has been encouraged since the beginning of the pandemic (Atkeson et al. 2020). Even, Romaniuk (2001) confirmed that the responsiveness to the needs of customers in the financial services leads to positive brand positioning. The prompt response to the crisis and developments by the organizations to ensure the safety of customers will enhance the trust of its customers. Nuseir et al. (2021) stated that organizations have adopted the new customer needs to enhance the brand image. Therefore, it is important to examine the installation of the COVID-19 screening system in banks on the brand image and customer satisfaction.

Hypothesis 1 Efficacy of COVID-19 screening system has a positive influence on the brand image of the banks.

Hypothesis 2 Efficacy of COVID-19 screening system has a positive influence on customer satisfaction in the banks.

Brand image and customer satisfaction

Hsieh et al. (2004, p. 252) "a successful brand image enables consumers to identify the needs that the brand satisfies and to differentiate the brand from its competitors, and consequently increases the likelihood that consumers will purchase the brand". Bapat (2018) suggested that customers compare the brand experience of existing and new financial service providers and prefer the service provider that offers a better brand experience. Andreassen and Lindestad (1998) suggested that brand image influences customer satisfaction although through moderating effects. A similar finding was explained by Davies et al. (2003) suggested that brand image affects satisfaction. Onyancha (2013) found a positive relationship between brand image and customer satisfaction in the commercial banks of Kenya. Tu and Chih (2013) found that brand image positively affects customer satisfaction along with customer perceived value and customer loyalty. Andreani et al (2012) suggested that brand image has three elements, such as favourability, strength and uniqueness of

brand association, and found strength of brand association positively influencing customer satisfaction. Liao (2012) found a strong correlation between brand image and customer satisfaction. Veloutsou et al (2004) conducted a study on five banks and found customer satisfaction positively influenced by the image of the bank. The current pandemic of COVID-19 has changed the behaviour of customers and forced organizations to respond to such changing behaviour. Rumiyati and Syafarudin (2021) suggested that during COVID-19 banks had to respond to changes which affected customer satisfaction and loyalty. During COVID-19, customer satisfaction and brand image are positively associated with each other, however, in the context of universities (Shehzadi et al. 2020). Hence, following hypothesis is proposed:

Hypothesis 3 Brand image has a positive influence on customer satisfaction in the banks.

Moderating role of the perceived threat of COVID-19 and perceived health risk on the relationship between the efficacy of COVID-19 screening system and brand image.

Makhanova and Shepherd (2020) suggested that COVID-19 has greater than the normal seasonal flu and people are interested to read about the increasing threat related to it. Kim and Lee (2020) stated that the threat of COVID-19 was so much that people stockpiled basic household items and were reluctant to go to service providers' sites to avail the services. Kim and Lee (2020) found a positive effect of the perceived threat of COVID-19 on the preference for a private dining restaurant and a private dining table to maintain the social distance. Kim (2020) found that the perceived threat of COVID-19 changed the consumption behaviour of people and increased the tendency to seek variety. Wnuk et al (2020) stated that during the COVID-19 pandemic concerns related to one's own life or the safety of the loved ones were experienced and can be recalled as real threats. The threat of COVID-19 is not only health-related but also economic (loss to business or medical expense), social (being away from nears and dears) and future consequences (Baber 2021; Paredes et al. 2020).

There has been an initial indication that the COVID-19 pandemic followed by the lockdown and restrictions can increase the severity of pre-existing mental diseases and can be a source of new symptoms in individuals with no past disorders (Cullen et al. 2020). Paredes et al. (2020) found the detrimental effect of COVID-19 on mental health and future anxieties. The perception of threat from COVID-19 has been found positively related to negative cognitive health effects such as sadness–depression, anxiety and anger–hostility which in turn induce the threat in a cyclic manner (María del Carmen et al. 2020). Fear of illness and catching disease leads to depression and anxiety (Arthur 2005). COVID-19 pandemic elicited a parallel epidemic of frustration,

Fig. 1 Research framework
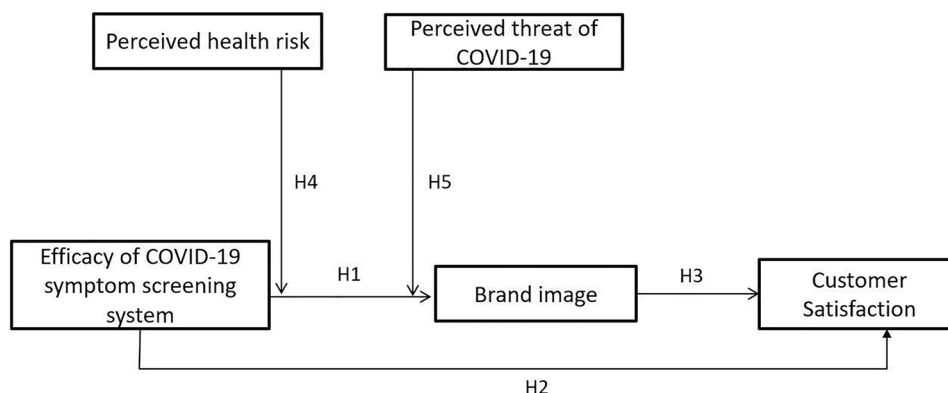
anxiety and emotional enervation (Lai et al. 2020; Yao et al. 2020; Irshad et al. 2020). Similar results were suggested by Shahzad et al. (2021) during the COVID-19 pandemic; however, the study found social support reducing the threat of health. There is a significant role of perceived health risk in customer decision-making processes, and the adoption of new technology systems can reduce perceived health risk (Shin and Kang, 2020). Si et al. (2020) suggested that preventive measures taken by the organization to reduce the transmission of infection would be beneficial in decreasing perceived health risks related to the COVID-19 pandemic.

Hypothesis 4 Perceived health risk will influence the relationship between the efficacy of the COVID-19 screening system and brand image.

Hypothesis 5 Perceived threat of COVID-19 will influence the relationship between the efficacy of the COVID-19 screening system and brand image.

Method

Data collection and instrument

The data were collected from the banking customers in India who have visited banks during the COVID-19 pandemic. The rationale behind choosing India for the study is that it is the second worst-hit country due to coronavirus and people visit banks regularly instead of operating accounts online. Around 234 people participated in the survey, and data were collected through an online survey. The snowball sampling method was used to collect data and the survey link within our network, and they further shared it in their network. Out of the five constructs, four were adopted and modified from past studies. The items of the perceived threat of COVID-19 and perceived health risk were taken from Foroudi et al. (2020), brand image (Narteh and Braimah 2019) and customer satisfaction (Bhatt 2020). The items of "Efficacy of

COVID-19 symptom screening system" were developed by the author for this study as it was never used before. The research framework of the study is shown in Fig. 1.

Demographic profile

The demographic profile of the respondents suggests that the sample consists of mostly 31–40 years old (38%) followed by 23–30 (24%), 41–50 (22%), 18–22 (11%) and over 50 (4%). Most of the respondents were male (72%) and married (70%) as shown in Table 1. The sample belongs to diverse educational levels which are good for the study to understand the mindset of people towards perceived threat and health risk. The customers had their accounts almost equally in private and public banks. Most of the people have visited banks 2–10 times during the period of the COVID-19 pandemic. Almost one-third of the population was not sanitizing their hands and wearing masks regularly which is the concern. However, all the organizations and institutions, private or public have directed people to wear masks inside their premises and some also denying entry without masks. Many banks have been seen using the sanitization system upon entry.

Measurement model

The data were analysed through the partial least square structural equation modelling (PLS-SEM) approach using SmartPLS 3.2 software. Hair Jr et al. (2020) stated that PLS-SEM should be selected when the prediction is an aim of the study. The measurement of factor loadings, Cronbach's alpha, composite reliability and average variance extracted (AVE) is shown in Table 2. All the values of factor loadings were meeting the minimum threshold value of 0.7 (Hair et al. 2019). The values of reliability measurements–Cronbach's alpha and composite reliability values are also above the minimum acceptable level of 0.7 (Hair et al. 2019). To check the validity of data, convergent validity measurement was checked through the average variance extracted (AVE)

Table 1 Demographic statistics

Variable	Range (value)	Frequency	Percentage
Age	18–22	24	10.71
	23–30	55	24.55
	31–40	85	37.95
	41–50	51	22.77
	Over 50	9	4.02
Gender	Male	162	72.32
	Female	61	27.23
	Other	1	0.45
Marital status	Single	57	25.45
	Married	159	70.98
	Other	8	3.57
Educational qualification	Secondary School/High School	56	25.00
	College Graduate/ Bachelor's Degree	64	28.57
	Master's Degree	52	23.21
	Doctorate Degree	8	3.57
	Other	44	19.64
Bank category	Private	105	46.88
	Public	119	53.13
Number of visits made to a bank since March 2020	0–1	6	2.68
	2–5	105	46.88
	5–10	63	28.13
	More than 10	50	22.32
Do you wear a mask and wash/sanitize your hands regularly?	Yes	150	66.96
	No	74	33.04

and all the values were found to be above the accepted level of 0.5 (Hair et al. 2019).

To check the discriminant validity of the items which means that each item measures a different factor from the other different items. Discriminant validity is established when the shared variance within a construct is above the shared variance between the constructs. Fornell–Larcker criteria were used to test the discriminant validity. All the values of AVEs are higher than the shared variance between the constructs; therefore, discriminant validity is established (Hair et al. 2019) (Table 3).

Results

The hypothesized relationships were analysed using PLS-SEM without control variables. There was evidence of the positive relationship of the efficacy of the COVID-19 symptom screening system on the brand image (β: 0.189), and on customer satisfaction (β: 0.176), therefore accepting the hypotheses H1 and H2 as shown in Table 4. The is a significant positive impact of brand image on customer satisfaction (β: 0.687), supporting hypothesis H3. The perceived health risk significantly moderates the relationship between

the efficacy of the COVID-19 symptom screening system and brand image, however, negatively. Therefore, we accept hypothesis H4, but the relationship is weakened by the perceived health risk. The perceived threat of COVID-19 positively moderates the relationships between the efficacy of the COVID-19 symptom screening system and brand image. Hence, we accept hypothesis H5. Although mediating effect of brand image has not been hypothesized, we analysed and found it significant as shown in Table 4. The R^2 values of brand image and customer satisfaction are 0.686 and 0.668, respectively, as shown in Fig. 2.

Discussion

Financial services are an imperative part of our personal and professional life. With the advancement of technology and the Internet, we can operate our bank accounts remotely. Yet some people are unable to access the Internet or due to a lack of technological tools to access their banking account online. They are required to visit banks to avail the financial services. During the pandemic of COVID-19, people were forced to stay in their houses to avoid close contact with people. In India, the lockdown was announced, and

Table 2 Measurement model

Measurement items	Factor loadings	Cronbach's alpha	Composite reliability	AVE
Efficacy of COVID-19 symptom screening system		0.876	0.915	0.730
During my visit to the bank, I was checked for temperature by thermometer manually or by automated temperature Screening Machine	0.895			
During my visit to the bank, I was asked to provide details about symptoms, if any	0.898			
The bank's system of screening is strict and allows only people with no symptoms	0.836			
No one is allowed to bypass the screening procedure during the visit to the bank	0.784			
Perceived health risk		0.786	0.872	0.695
Due to the outbreak of coronavirus, I worry that going to any banks are harmful	0.773			
Due to the outbreak of coronavirus, I worry about my health after going to any bank	0.843			
Due to the outbreak of coronavirus, I worry that going to any bank is risky	0.882			
Perceived threat of COVID-19		0.838	0.899	0.748
Coronavirus is a very frightening disease	0.872			
Compared to SARS, avian flu, or Influenza, Coronavirus is more dangerous	0.877			
I am afraid of coronavirus	0.845			
Brand image		0.857	0.896	0.633
My bank's brand has a clean image	0.765			
My bank has a good image in the society	0.773			
My bank's brand has a differentiated image	0.805			
It is prestigious to be a customer of my bank	0.856			
My bank is committed to sustainable development	0.776			
Customer satisfaction		0.914	0.941	0.800
I will encourage friends and relatives to do business with Bank	0.911			
overall, I have a good and positive impression of the Bank	0.950			
I am satisfied with the overall service quality of the Bank	0.945			
I feel satisfied when using Banking services	0.759			

Table 3 Fornell–Larcker criteria for divergent validity

Construct	1	2	3	4	5
(1) Efficacy of COVID-19 symptom screening system	**0.855**				
(2) Perceived threat of COVID-19	0.347	**0.865**			
(3) Perceived health risk	0.677	0.331	**0.854**		
(4) Brand image	0.683	0.334	0.783	**0.846**	
(5) Customer satisfaction	0.645	0.291	0.836	0.807	**0.894**

people couldn't move from their homes. During the ease of the restrictions, people were out to buy things and avail themselves of the necessary services like hospital, courier, insurance and banking (Baber and Tripati 2021).

The institutions including the banks were proactive in restricting the entry of people inside the premises without a mask and proper screening. Most of the banks were checking the temperature of the customers through manual or automatic screening systems. Such systems were in place to check the mask and temperature and help people to gain

the confidence to visit the crowded public places like banks, which was among the essential services. This study was focused to know the impact of such systems, which were in place to make sure that only healthy customers enter the banks, on the brand image of the bank and customer satisfaction. The association was tested under the moderating effect of the variable like the perceived threat of COVID-19 and health risks associated with the virus. The study found that the efficacy of the COVID-19 symptom screening system was positively influencing the brand image of the bank. This implies that the image of the bank was elevated in the minds of the customer if there was a system in banks that was checking the temperature and other preventive aspects of the COVID-19. This system in place was a sign of concern by the bank towards customers and implies the responsiveness of the bank towards the situation. The efficacy of the COVID-19 symptom screening system also positively influenced customer satisfaction. The customers were feeling satisfied by knowing the bank cares about them. This system not only helped customers to be sure that healthy and masked customers are allowed to enter the bank but also helped unhealthy customers to know that they are having

Table 4 Estimated path relationships

| H#	Direct effects–path relationships	Beta β	T values	P values	Remarks
H1	Efficacy of COVID-19 symptom screening system→Brand image	0.189	3.528	0.000	Supported
H2	Efficacy of COVID-19 symptom screening system→Customer Satisfaction	0.176	3.131	0.002	Supported
H3	Brand image→Customer Satisfaction	0.687	15.017	0.000	Supported
Moderation effect					
H4	Perceived health risk * Efficacy of COVID-19 symptom screening system→Brand image	− 0.167	4.809	0.000	Supported
H5	Perceived threat of COVID-19 * Efficacy of COVID-19 symptom screening system→Brand image	0.093	2.442	0.015	Supported
Mediating effect					
	Efficacy of COVID-19 symptom screening system→Brand image→Customer satisfaction	0.130	3.475	0.001	Supported
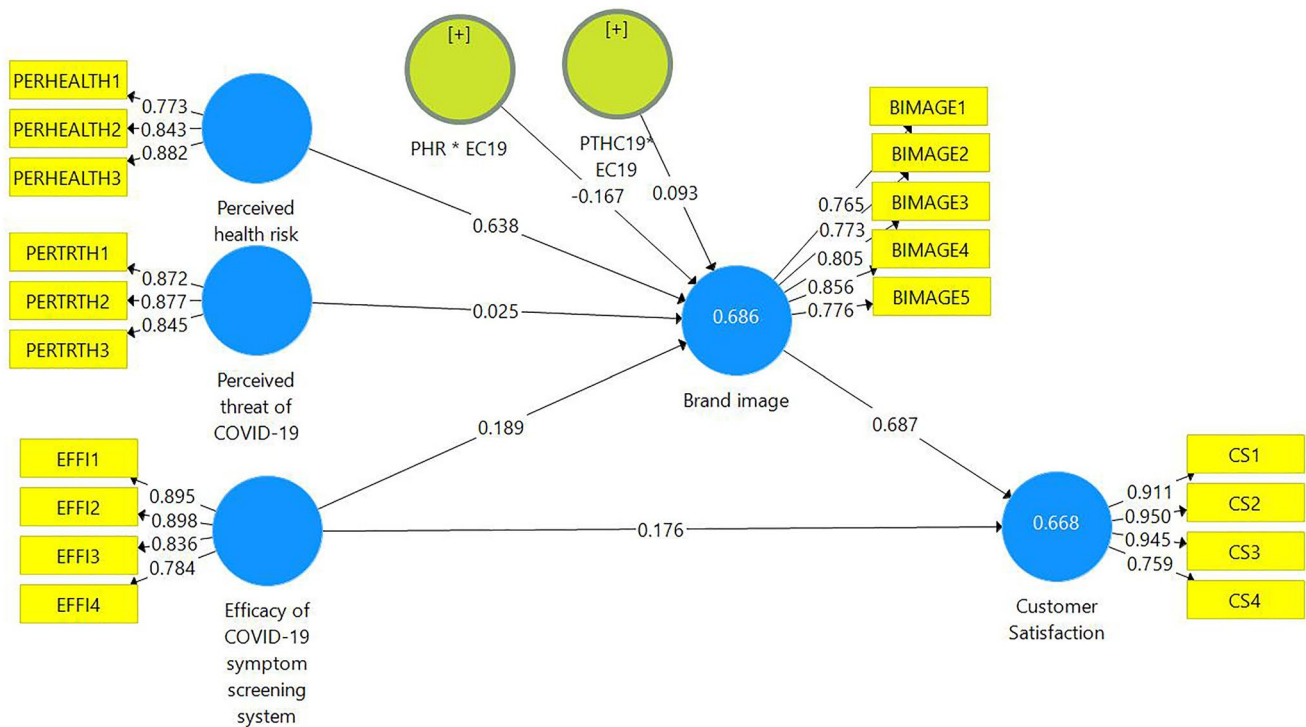
Fig. 2 PLS estimation model

symptoms that need medical attention. Brand image has a strong positive influence on customer satisfaction, and our study has reaffirmed the relationship which was already ascertained by Onyancha (2013), Tu and Chang (2012), Liao (2012) and Veloutsou et al (2004). The enhanced brand image due to the arrangement of the COVID-19 symptom screening system in the banks will further increase customer satisfaction. The mediating effect of the brand image further signifies the importance of the image of the bank in the minds of customers to be satisfied with the services.

The moderating effect of perceived health risks associated with COVID-19 is significant and reduces the relationship of the efficacy of the COVID-19 symptom screening system and brand image. This signifies that people who are more concerned about their health and risks associated with catching the virus while having the screening system in place will reduce the image of the bank. The justification can be that those who are concern about their health may feel more scared when they see the screening system upon entry at the bank. The scary notion will reduce the effect of the screening system on brand image in the minds of customers who are more concerned about their health. However, the perceived threat of COVID-19 will be moderate the relationship between the efficacy of the COVID-19 symptom screening system and brand image. The threat of COVID-19 is real, and people have realized that it has serious health

repercussions so a system of screening will positively influence the brand image of the bank. Therefore, the system of screening symptoms will enhance the brand image for the people who perceive a greater threat of COVID-19 and slightly reduce the image of the bank for customers who are concern about their health.

Implications

The study will be useful for the banks to understand the need of being responsive at the time of crisis. Proper screening, availability of sanitizers and check to keep social distancing will be them to enhance their brand image in the eyes of the customer which will further satisfy the customers. Retail banking in India has a throat cut competition, and survival has become hard for private banks in the last few years. Customer satisfaction and brand image play an important role for banks as it is a matter of safety and security of their hard-earned money. During the current pandemic crisis, the safety of health is a newly added factor for the brand image and customer satisfaction. Customers who are concern about their health and perceived the potential threat of catching the virus will appreciate the screen of customers entering the banks. At the same time, customers need to be educated about the virus as suggested by Kim et al. (2020) to relieve them from fear and depression. The paper contributes to the existing literature about the non-financial services and crisis response services that can impact the banks' image and customer satisfaction. The study also contributes to the important existing yet incomplete research of the factors which changed the behaviour of people towards financial services during the COVID-19 crisis.

Conclusion

The pandemic of COVID-19 has changed the behaviour of consumers and the operation of service providers. The measures taken by the service providers to monitor the health of customers and scrutinize the infected or symptomatic customers from the visiting may impact brand image and satisfaction of customers. The presence of the screening system of COVID-19 which may include a simple thermometer or automatic temperature monitoring system was well recognized by the customers and enhanced the image of banks during the pandemic. The study will help banks to recognize the need for an automatic and manual screening system for customers and employees upon entry to ensure the safety of everyone. From a simple temperature check-up to a sophisticated screening system, customers acknowledge the response of the banks to the pandemic to ensure the safety of customers. The study suggested that not only quality financial services enhance customer satisfaction in banks

but also the care about the customers during the crisis will contribute to it.

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