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RESEARCH NOTE

COVID-19: transforming air passengers' behaviour and reshaping their expectations towards the airline industry

Anam Afaq[a], Loveleen Gaur[a], Gurmeet Singh[b] and Amandeep Dhir[c]

[a]Amity International Business School, Amity University, Noida, India; [b]The University of the South Pacific (USP), Fiji; [c]University of Agder, Kristiansand, Norway

ABSTRACT
The COVID-19 crisis has hindered travelling and transformed air passengers' expectations, which profoundly impacted airlines, affecting tourism-related activities. Therefore, it is essential to determine the air passenger's perception regarding the airline services that create positive and negative opinions. Accordingly, this research note (RN) assesses air passenger's engagement with the airline service providers (ASP) on Twitter. This RN turns to social capital theory as a theoretical base to evaluate how the passengers engage with the ASP to depict their expectations on Twitter. The authors conducted two analyses. First, python was applied for tweet mining and sentiment analysis (SA) to identify the polarity in passenger's engagement with five ASP. This analysis depicted the positive sentiments of the passengers towards the ASP. Second, a qualitative analysis was carried to identify the themes that shape passenger's expectations before and after the outbreak of COVID-19 as they engage with the ASP on Twitter. This RN appears to be a pioneer in presenting a thematic model for the airline industry that compares air passenger's expectations on Twitter before and after the outbreak of COVID-19.

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Air passenger expectations; airlines industry; covid-19; sentiment analysis; thematic analysis

Introduction

As travel is imperative for tourism-related activities, any condition that interrupts travelling will severely impact tourism businesses (Yeh, 2020). A worldwide concern like the COVID-19 pandemic is distinctly an indicative example of this. COVID-19 is a much bigger pandemic in history than the previous pandemics, which have drastically affected mobility (Polyzos et al., 2020). During the earlier health crisis, airlines and tourist destinations had managed to bounce back within a certain time (Gossling et al., 2020). However, the current situation of COVID-19 is not a good indicator for travel and tourism businesses. Now, the prime concerns of passengers have taken a shift towards health and safety (Huang et al., 2020). The service providers are now facing immense challenges. Apart from meeting passengers' pre COVID-19 era expectations, they also have to reinvent them as per the passengers' new safety and cleanliness standards.

From the point of view of policymaking and research, it is imperative to analyse the changing expectations. In this context, travel and tourism-related studies have recommended the necessity to analyse user-generated content (UGC) on social media platforms to understand passengers' expectations on social media platforms before and after the outbreak of COVID-19 (Yu et al., 2020). The content on social media becomes the social capital for the organisations. A minimal number of prior studies examined UGC on social media platforms regarding the change in passengers' expectations after the outbreak of COVID-19 (Monmousseau et al., 2020). Furthermore, there was an absence of Twitter-based research on passengers transforming expectations in the existing literature.

This note tries to bridge the gaps mentioned above and addresses two objectives.

(1) To analyse the air passengers' sentiments towards the airline service providers.
(2) To compare the air passenger expectations on Twitter before and after the outbreak of COVID-19.

This study uses data from Twitter to identify passengers' sentiments and their expectations towards five airline service providers mentioned as ASP1, ASP2, ASP3, ASP4 and ASP5. The criteria for selecting the airlines were based on the highest-ranked airlines that are among the most affordable airlines to travel in Asia. These five airlines are set from the top ten best budget airlines in Asia. Remarkably, Twitter is preferred for this study because of its huge dataset that helps get a clearer perception of the air passengers, which

CONTACT Gurmeet Singh singh_g@usp.ac.fj The University of the South Pacific (USP), Fiji

leads to better addressing our objectives. Also, Twitter is widely used by the ASP for improved customer engagement and is preferred by passengers for getting quick responses from the service providers (Ibrahim et al., 2017). The novelty of this RN comes from its thematic pioneer model that compares air passengers' expectations on Twitter before and after the outbreak of COVID-19. Social Capital Theory has been used here as a theoretical base for delineating social capital and its relatedness on Twitter.

Literature review

Change in passengers' expectations from pre COVID-19 to post COVID-19

The perceived severity of COVID-19 with the increasing number of fatalities reported globally justifies passengers' fear and demonstrates the seriousness of this issue (Gaur et al., 2021; Walia et al., 2021). Earlier researches have stated that individuals are species of habits (de Haas et al., 2020). Several studies confirm that any major event in a person's life and surroundings can change individuals' behaviour and expectations (Müggenburg et al., 2015). In the current situation, the event that is changing the passenger's expectations is COVID-19. This health crisis has severe societal impacts. This virus and the preliminaries used to curtail its transmission are severe (Gallego & Font, 2021). The conditions are such that individuals are compelled to bring change in their expectations from the airlines. A radical change has occurred in people's lives within just a few weeks after the outbreak of COVID-19, and this has led to some research exploring the changing expectations of the passengers. For example, Neuburger and Egger (2021) analysed the change in European passenger's perceptions after the outbreak of COVID-19 and found severe anxieties among them towards travel. Passengers demanded risk reduction measures from the airlines to restore their confidence in the airlines. Similarly, Matiza (2020) provided insights into the post COVID-19 travel criterion and recommended advanced safety and health competencies to meet the passengers' changing safety and cleanliness expectations.

Theoretical framework

As per social capital theory (SCT), the social networks have values that people get out of their social networks (Putnam, 2000). Social capital facilitates knowledge sharing in online communities (Zhang et al., 2019). SCT helps to connect resources through social networking and assists in understanding consumer expectations in social media provinces. The elements of social capital like shared language, social trust, shared vision and reciprocity are essential for developing network ties. SCT is popular and commonly used in prior social media studies. Yan et al. (2019) proposed a two-way relationship between social capital and the knowledge contribution of users in online communities. This RN is also about online community and revolves around uncovering customer expectations from a social media platform; therefore, the authors adopted social capital theory as a theoretical base for the study.

Methodology

Sentiment analysis and thematic analysis

To achieve the research objectives, the authors conducted two analyses. First, sentiment analysis (SA) was carried on 149278 tweets using machine learning (ML). Natural language processing (NLP) technique was used for data pre-processing and preparing it for analysis. For text mining and SA, we adopted python language. Specifically, the library 'Getoldtweets' of python was applied for text mining. NLP with ML algorithms was used to determine the words that were present in the sentences. All the tweets were analysed to identify their polarity. The term polarity refers to the orientation of the stated sentiment, i.e. it specifies the opinion expressed as a positive, negative or neutral sentiment. Polarity is highly relevant for businesses to comprehend customers' sentiments for their brands and take improved and conversant decisions. Next, in the data pre-processing step, the irrelevant clutter was removed from the dataset so that it may not impact the results while checking the polarity.

Finally, the first analysis comprising SA was performed on the data set that depicted the air passengers' positive, negative and neutral sentiments towards the ASP. SA helped determine the passenger's sentiments while they engage with the ASP on Twitter. However, it was not clear as to what were the reasons shaping these sentiments. This is so because SA alone cannot provide complete insights about passengers changing expectations. Therefore, we performed thematic analysis using Nvivo-12 on the entire dataset to qualitatively explore the passengers' expectations. We particularly applied thematic analysis because it is mainly preferred for netnographic studies (Heinonen & Medberg, 2018). Netnography is an extension of ethnographic research and aids in online research. It helps analyse social interactions on online platforms, depicts people's online behaviour, and provides valuable insights (Tavakoli &

Wijesinghe, 2019). For conducting thematic analysis, the data set was read many times to have clarity of how passengers engage with the airlines. NVivo-12 was used for carrying the query command for data exploration. Preliminary codes were assigned to the data set for describing the content. In this phase, the codes were evolving and changing. As the coding proceeded, few codes were split, and a few were merged. The analysis exhibited few closely related themes, so we reviewed the identified patterns and finally selected the most persistent ones. The emerging themes eventually helped present a thematic model that compared the air passengers' expectations on Twitter before and after the outbreak of COVID-19. The below-mentioned figure 1 represents the research methodology approach adopted for this RN.

Results

Overall, 201028 tweets were extracted for four months (Pre COVID-19 data - December 2019 and January 2020 and post COVID-19 data February and March 2021). For pre COVID-19, the months selected for tweets extraction are December and January, as these months witness maximum air traffic throughout the world because of the holiday season and New Year celebrations. For post COVID-19, data were extracted for February and March because most countries removed travel bans and resumed air travel after lockdown. SA was performed on only 149278 tweets because the other tweets were of the service providers and were predominantly neutral. The below-mentioned Table 1 presents the number of tweets from each airline.

The overall tweets giving a positive sentiment were 40%. The portion of negative sentiments were 21%, and the neutral sentiments accounted for 39%. Therefore, the broad picture depicts positive sentiments of the passengers towards the ASP. The positive sentiment in the tweets towards the ASP expresses the passengers' happiness, vivacity, and zeal. Whereas negative sentiments refer to the criticism and sadness attached in the tweets for the ASP, and neutral sentiments indicate that no emotions are expressed by the passengers and are therefore categorised as neutral. The ASP5 had the highest number of tweets, and this represents a higher level of engagement. ASP5 also has a low number of negative tweets as compared to other airlines apart from ASP3. ASP4 has a meagre difference between its positive and neutral sentiments as it has 39.59% of positive sentiments and 38.71% of neutral sentiments. ASP3 has the lowest number of tweets which is only 23968. However, a lower number of tweets does not necessarily represent a lower level of satisfaction because ASP3 has the highest positive sentiments, i.e. 44.64% and the lowest negative sentiments, i.e. 17.76%. This depicts that passengers are happy with the services provided by ASP3. Compared with other airlines, ASP1 has a minor percentage of positive sentiments, 36.22%, revealing the passengers' dissatisfaction with the ASP1. The ASP2 has mainly half number of tweets compared to ASP5, but it depicts nearly the same positive sentiments as ASP5.

Now, after the sentiment analysis, next is the thematic analysis on this same dataset. The themes are depicted based on the tweets extracted before and after the outbreak of COVID-19. Figures 2 and 3 illustrate the crux of the themes by presenting a sample of tweets that helped identify the given themes pre- and post-COVID-19.

Themes identified before the outbreak of COVID-19

Affirmation of services

The most evident pattern visible in the dataset is the affirmation of on-time services. As affirmed by the airlines, on-time arrival and departure of flights are extremely important for passengers. Flight delays and cancellations revealed an unpleasant behaviour of passengers on Twitter. A few evident themes in the dataset are the timely and quality services like aircraft's cleanliness, trouble-free take-off and landing, comfy in-flight seats, and less waiting time at the counters. The passengers explicitly highlighted the dire conditions of the aircraft's cabin and dirty seats in the washrooms in their tweets.

Airport baggage management

Troublesome baggage handling at the airports was notable in the tweets. Passengers mentioned the airline's names and expressed their anger due to the mishandling, missing and damages caused to their bags. Passengers tagged the airlines and claimed not to travel again due to their inefficient baggage management services. Passengers also complained that the bags which were lost entailed their valuables. However, they did not receive any compensation for it from the airlines.

Lower fare of airlines

The low fare of airlines is a significant factor for the passengers to prefer the airline to travel. Low priced tickets constitute a vital factor in spreading positive word of mouth for the airlines. Passengers tagged their friends and mentioned the airlines offering lower fares on

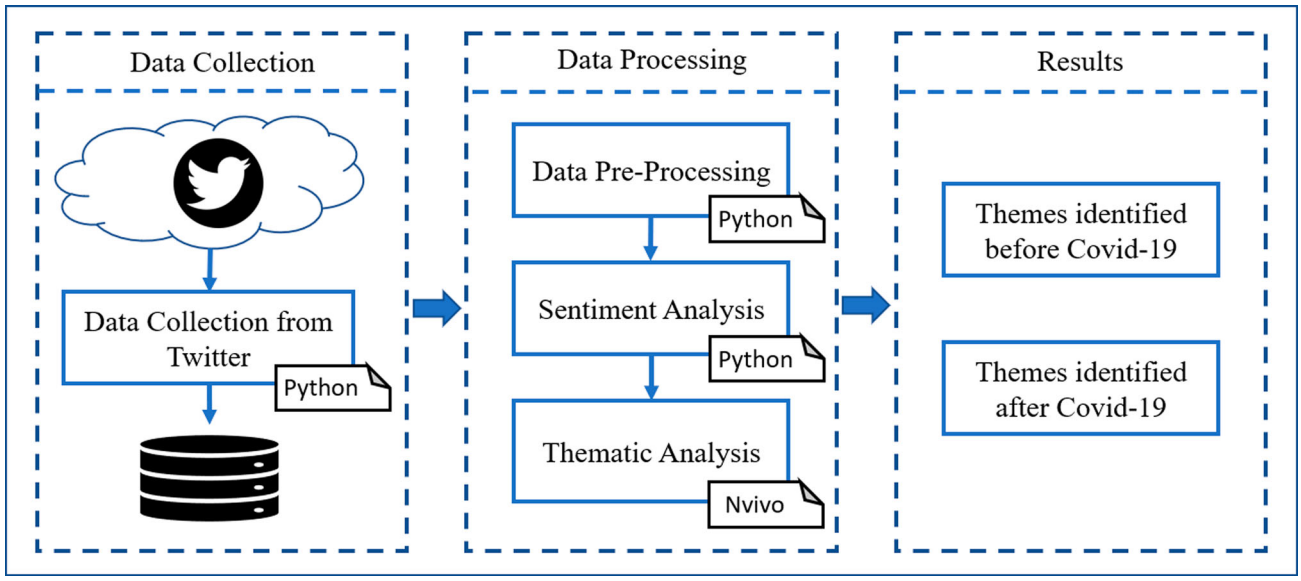

Figure 1. Research methodology approach

specific dates. Passengers depicted their repurchase intentions towards the same airlines providing low fares. Some even tweeted that their only criteria for selecting an airline are the low price of tickets.

Effortless and continuous services

Passengers appreciated the airlines that provided smooth connecting flights and acknowledged the airlines' services that offered food to them in case of missed flights. Similarly, passengers also tweeted about the inconvenience caused to them due to poor services concerning the missing connecting flights. Other complaints mentioned by the passengers were regarding poor Wi-fi services, negligence in announcing the belt numbers and prolonged waiting hours at the airports.

Managing service failures

As evident in the dataset, passengers don't take up the service failure easily. Instead, they tag the airlines and do negative publicity by condemning them regarding flight cancellations and delays. However, many passengers also happily tweeted regarding the quick actions taken by the airlines in case of any failure. Passengers also acknowledged the airlines for their timely corrective measures and shared a positive opinion about them for providing compensation in offering discounted services in the future.

Courteous and uncourteous behaviour of employees

Passengers mentioned their experiences with both courteous and uncourteous staff. Few angrily tweeted about their unpleasant encounter with the rude employees who were impatient to listen to their queries and provide adequate responses. On the other hand, there were plenty of tweets wherein even the names of the employees were mentioned for handling the queries timely and effectively.

Involvement in food and drinks service provisioning

The phrases like 'the complimentary drinks with the low priced tickets are cherry on the cake' were often visible in the dataset. Many passengers acknowledged the airlines for their in-flight menu services. Passengers also mentioned the food quality offered on the flights. Some airlines were appreciated for their food quality,

Table 1. Sentiment analysis for airlines

			Neutral		Positive		Negative	
Airline Service Provider	**Total No. of Tweets**	**Valid Tweets**	Count	Percentage (%)	Count	Percentage (%)	Count	Percentage (%)
ASP1	26060	17259	6757	39.15	6252	36.22	4250	24.62
ASP2	36763	24829	9416	37.92	9978	40.19	5435	21.89
ASP3	23968	14749	5545	37.60	6584	44.64	2620	17.76
ASP4	30496	27834	10774	38.71	11019	39.59	6041	21.70
ASP5	83741	64607	26354	40.79	25541	39.53	12712	19.68
Total	**201028**	**149278**	**58846**	**39.00**	**59374**	**40.00**	**31058**	**21.00**

Figure 2. Collage of sample of tweets pre COVID-19

whereas some were highly criticised for their poor food quality.

Receptivity and compassion regarding passengers requirements

The passengers on Twitter appreciated the swiftness of employees in addressing their concerns. Some passengers happily shared their experiences in terms of quick check-in and also for effective web check-in. However, some passengers heavily criticised and tagged those airlines which did not have a smooth web check-in procedure. As seen in the dataset, passengers were also unhappy because, despite their seat selection during the booking of the tickets, the staff ignored it.

In-flight enjoyment facilities

The onboard journey becomes exciting for the passengers with adequate entertaining provisions like magazines and TV. Many passengers tweeted that their kids did not trouble them throughout the flight as they were busy watching TV. Passengers even suggested the airlines to add more TV shows to their list, improving their in-flight entertainment.

Airfare hike during festivals

The passengers heavily criticised the trend of airlines of raising prices during festivals. They accused the airlines of overly increasing the ticket prices during this time which puts a massive burden on commoners budgets who wish to spend time with their families and celebrate different festivities.

Airlines comparison by passengers

Passengers tend to highlight the offers and deals of different airlines and share them on Twitter. They compare the offers and services provided by various airlines and even persuade others to switch to other airlines that offer more value for money services. Passengers highlighted incidents wherein they prebooked their preferred seat in the selected aircraft; however, the plane changed, so their chosen seats also changed. Similarly, passengers also compared this

incident with the airlines that provided the preferred seats despite the aircraft's changes.

Airlines flexible online services

Some passengers view tickets cancellations and changes as a very cumbersome process designed by few airlines. They specified the names of the airlines and depicted their dissatisfaction with being excessively charged for changing the tickets. However, many passengers also tweeted about the effective online services wherein they received quick responses for their queries and experienced a very smooth process of online bookings.

Themes identified after the outbreak of COVID-19

Aircrafts sanitising and disinfection

The fear of the COVID-19 crisis has instilled a lot of doubts in passengers minds regarding their safety. Therefore, one prominent pattern visible in the tweets was their concern regarding the sanitising and disinfection of aircraft carried by the service providers after every trip. Moreover, passengers also showed their anger towards the staff members who lacked heedfulness towards passengers boarding the flights without properly wearing their masks.

Dogging of passengers issues between travel agents and airline companies

The outbreak of COVID-19 resulted in travel restrictions and lockdowns, leading to the cancellations of tickets. However, the passengers were distressed and enraged due to the inconsiderate attitude of the airlines and travel agencies. The airlines shifted the issues regarding cancellations on the shoulders of the travel agents, and the travel agents said the responsibility of cancellations is to be taken care of by the airlines. Passengers immensely tweeted about how helpless they were due to the dogging of their problems between these two parties with no solution.

Crowd rush into the shuttle buses

The crowded shuttle buses at the airports without any physical distancing were the cause of distress among many passengers. They criticised the authorities for their negligence towards addressing the COVID-19 protocols for travel. The passengers regarded the jamming of shuttle buses as a purposeful, super-fast COVID-19 spreader. Passengers mentioned that rules of social distancing have gone for a toss due to the rush in the buses.

Cancellation fee waiver

The dataset revealed the unhappiness of the passengers towards the airlines, which did not waive off the cancellation charges. The refund policies of the airlines were also heavily condemned by the passengers. Enormous tweets stated that the airlines were inconsiderate towards the situation of COVID-19. Passengers claimed that airlines charged them unreasonably for rescheduling their flights. The inflexibility in the ticket changes and false claims of the airlines regarding their refund policies were criticised. On the contrary, many passengers also acknowledged some airlines for a swift refund.

Airports and COVID-19 screening

The airports adhere to the government guidelines by monitoring the passenger's temperature to ensure they are not infected. However, despite the screening process, the passengers complained regarding the staff's carelessness in checking the temperatures. They demanded vigilant checking of the passengers using the thermal scanners at every nook and corner of the airports. They tagged the airport authorities and insisted on the installation of thermal scanners even at the aerobridges.

Long queues leading to crowdedness and infection

Another visible theme was the concern of the passengers regarding the long waiting time in the queues. The passengers stated that standing and waiting in the lines can increase their probability of standing near the suspected COVID-19 positive cases. They demanded that there should be different ways to monitor and screen the passengers, taking less time.

Mandatory quarantine

Along with the consistent safety standards and hygiene practices, another pattern visible in the tweets were the confusion and discussion among air passengers regarding the mandatory quarantine measures. Passengers were sceptical about the guidelines of being quarantined after travel. Passengers stated that they are discouraged from travelling due to the compulsory quarantine guideline and want to cancel their tickets.

Widespread COVID-19 testing and removal of quarantine prerequisite

A pattern was visible wherein the air passengers were giving suggestions regarding the massive COVID-19 testing. They stated that the test results conducted at the airports would confirm whether the passenger is infected or not, and the air traveller who is COVID-19 negative can be exempted from being quarantined. This

Figure 3. Collage of sample of tweets post COVID-19

will release the pressure of being quarantined after travel and will not discourage the passengers from flying.

The themes mentioned above clearly highlights and depicts the passenger's expectations from the ASP before and after the outbreak of COVID-19. These themes are summarized in the form of a thematic model in the below-mentioned Figure 4.

Conclusion, implications and limitations

Conclusion

In this RN, we have presented the air passengers sentiments and expectations towards the ASP. The outbreak of COVID-19 brought massive distrust, anxiety, travel restrictions, and fear in passengers' minds, affecting travel behaviour. A thematic model has been presented in this RN for the airline industry that compares air passengers expectations on Twitter before and after the outbreak of COVID-19. The extreme health crisis of COVID-19 has made this thematic model more relevant for the airline's industry. It is essential to understand the changing expectations of passengers during the current situation and to take decisions and formulate strategies on an empirical basis. The research findings will help the ASP understand the passenger expectations and take quick measures to build back passengers' confidence.

Implications

The RN offers theoretical and practical implications. First, the RN brings insights into air passenger sentiments in an online environment by applying NLP and big data methods emerging in management research. Additionally, the passengers' willingness to depict their expectations on Twitter increases the credibility of data and provides genuine insights into passenger's perceptions towards the ASP. From a managerial perspective, ASP can proactively screen themes that produce positive sentiments and construct messages for publicising those themes accordingly. The massive extent of negative reviews acts as a troublesome indicator for the airlines, and these providers should attempt to balance the sentiments. It recommends the requirement for

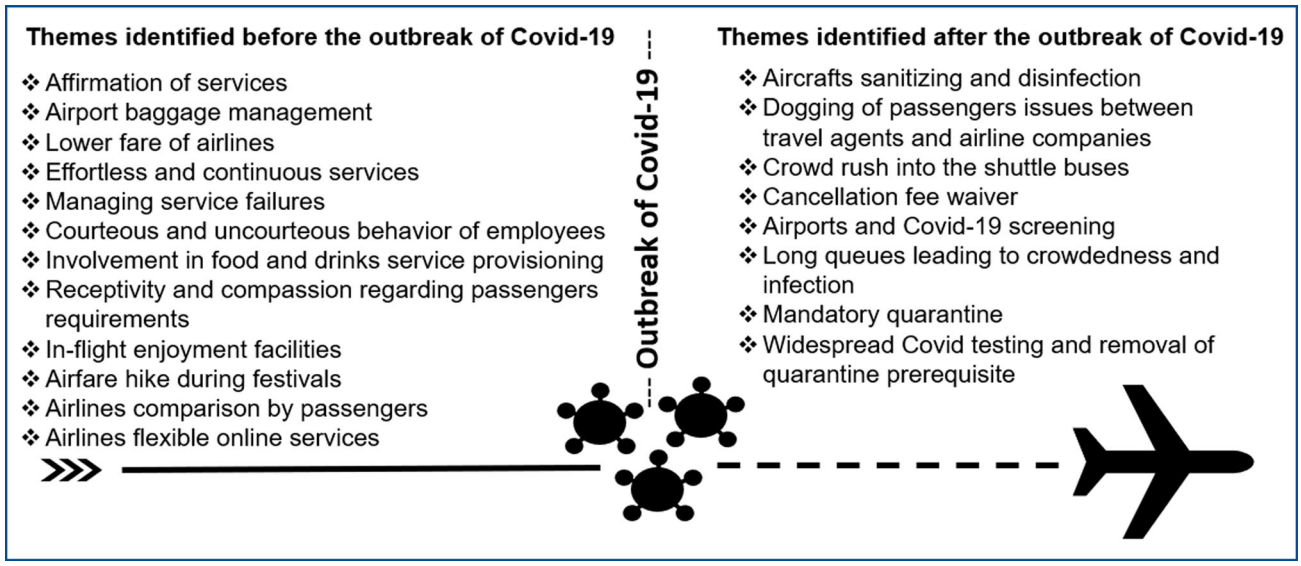

Figure 4. Thematic model for the airline industry

the ASP to uplift their workforce and resources to manage these growing requests. Also, using artificial intelligence and chat box to respond to frequently asked questions and using tools and software can improve the communication process.

Limitations

Despite the novel contribution of this RN, it has few limitations. The first limitation is that we extracted the reviews of only five Asian airlines for the analysis. Future studies may include more airlines from other parts of the world. Another limitation is that it cannot be generalised to other sectors as this RN specifically analysed the tweets of airlines. However, future researches can explore changing customers expectations due to the outbreak of COVID-19 in other sectors. This RN only included Twitter as a database to extract the reviews. However, in the future, researchers could explore the air passenger's reviews on other social networking sites like Facebook or Instagram to establish confirmability with the findings of this RN.

Notes on contributors

Anam Afaq is a Research Scholar and pursuing her Ph.D. in Marketing Management from Amity University Noida. Her area of interest in research includes Big Data Analytics and Digital Marketing. She is a certified Digital Marketer.

Loveleen Gaur (PhD) is a Professor of Management and Information Systems in Amity International Business School, at Amity University, Noida, India. She is serving in various editorial board of journals of repute. Her area of research is Artificial Intelligence and Digital Marketing, Business Intelligence and Data Mining.

Gurmeet Singh (PhD) is currently working as Professor and Head in School of Business & Management at the University of the South Pacific in Fiji. Prior to this, he was Associate Dean Research, Postgraduate Affairs, and Internationalisation for seven years in the Faculty of Business and Economics. Professor Singh has contributed more than 130 articles in leading international journals and international conferences, including more than 60 articles in ABDC and SJR ranked international journals. His current research interests include Marketing, Information Systems, Social Entrepreneurship, Small Businesses, business ethics, food consumption behavior, e-Governance, open innovation and service operations management.

Amandeep Dhir (DSc, PhD) is a Professor of Research Methods at University of Agder, Norway. He is also a visiting professor at Norwegian School of Hotel Management, University of Stavanger, Norway. His research appears in the *Journal of Business Research, Technology Forecasting and Social Change, Internet Research, Business Strategy and Environment, Psychology & Marketing, Business and Industrial Marketing, Computers in Human Behaviour, Computers in Industry, International Journal of Hospitality Management, Journal of Retailing and Consumer Services, Journal of Cleaner Production, Information Technology & People, Food quality and preferences, Appetite, Information Technology & People, Australasian Marketing Journal, Enterprise Information Systems* among others.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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