

What influences people's willingness to receive the COVID-19 vaccine for international travel?

Mingzhuo Wang, Puvaneswaran Kunasekaran & S. Mostafa Rasoolimanesh

To cite this article: Mingzhuo Wang, Puvaneswaran Kunasekaran & S. Mostafa Rasoolimanesh (2021): What influences people's willingness to receive the COVID-19 vaccine for international travel?, *Current Issues in Tourism*, DOI: [10.1080/13683500.2021.1929874](https://doi.org/10.1080/13683500.2021.1929874)

To link to this article: <https://doi.org/10.1080/13683500.2021.1929874>



Published online: 23 May 2021.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

RESEARCH LETTER



What influences people's willingness to receive the COVID-19 vaccine for international travel?

Mingzhuo Wang^{a,b}, Puvaneswaran Kunasekaran^b and S. Mostafa Rasoolimanesh ^b

^aDepartment of Economics and Management, Weifang University of Science and Technology, Weifang, People's Republic of China; ^bCentre for Research and Innovation in Tourism (CRiT), School of Hospitality, Tourism, and Events, Taylor's University, Subang Jaya, Malaysia

ABSTRACT

Although the hope of restarting international travel is now largely pinned on the COVID-19 vaccine, vaccination hesitancy among travellers remains an obstacle to this endeavour. Therefore, it is imperative to understand the mechanisms that affect people's attitudes towards receiving the COVID-19 vaccine for international travel. This study contributes to the restart of international travel by proposing an integrated framework of the protection motivation theory (PMT) and the concepts of travel desire and travel vaccination concerns, which can be applied to examine people's willingness to receive the COVID-19 vaccine for international travel, to design effective intervention strategies to promote vaccination rate.

ARTICLE HISTORY

Received 26 February 2021
Accepted 8 May 2021

KEYWORDS

COVID-19 vaccine; protection motivation theory (PMT); vaccination concerns; travel desire

1. Introduction

Tourism is vulnerable to pandemic containment measures because of restricted mobility and social distancing (Gossling et al., 2021), and pandemic's adverse effects on international tourism are particularly substantial when access and mobility are removed (Hall et al., 2020). Based on the latest UNWTO World Tourism Barometer, global tourism was hit hard by COVID-19, with international arrivals falling by 74% in 2020. Meanwhile, the rollout of the COVID-19 vaccine is expected to help reinstate travellers' confidence, ease travel restrictions, and gradually normalize travel. Although UNWTO Secretary-General Pololikashvili called for the global adoption of vaccination passport for safe cross-border travel on 21 January 2021, vaccination hesitancy among travellers remains an obstacle to the restart of international travel. As the hopes 'are now pinned on a silver bullet: the rapid and widespread distribution of a vaccine' (Cheer et al., 2021), enhancing people's willingness to receive the COVID-19 vaccine is fundamental to the resumption of international travel.

However, although many developed countries are keen to coordinate the adoption of vaccination passports for international travel (e.g. the EU proposed 'Digital Green Certificate' on March 17 to promote movement within the EU), this notion remains profoundly controversial and raises a debate of global justice and inequality. For instance, WHO Emergency Committee did not recommend the early introduction of vaccination passport for international travel as COVID-19 vaccines are still not widely accessible or fairly distributed worldwide. Moreover, disputes remain over whether vaccination should be mandatory for any travellers, which may infringe on the freedom of those who contest the benefits of vaccination or may cause discrimination against those who are ineligible for vaccination because of age, allergy, religion, pregnancy or other reasons. Nevertheless, it is virtually impossible for vaccination campaign to be carried out on an equal basis worldwide.

Despite the ethical issues, we should not neglect the significance of vaccination passport in restarting international travel.

Although many studies have used PMT to examine vaccination intention, very few of them were based on the context of international travel, while Larson et al. (2014) argued that vaccination issues are context-specific and should be investigated accordingly. Since international travel represents a unique context where the chance of being exposed to COVID-19 is different from that of daily life, travellers may have distinct attitudes towards vaccination from ordinary people (Adongo et al., 2021). To the best of our knowledge, no prior study has examined factors influencing people's willingness to receive the COVID-19 vaccine for international travel. Filling this gap, this letter proposes an integrated framework based on the protection motivation theory (PMT) and the concepts of travel desire and travel vaccination concerns to examine people's willingness to receive the COVID-19 vaccine for international travel, thereby contributing to the restart of international travel by exploring effective intervention strategies to promote vaccination rate. More importantly, as international travel is a significant factor in the spread of disease, higher vaccination rate of international travellers can also contribute to the herd immunity of both travel destinations and their home communities.

2. Conceptual framework development

PMT was originally proposed by Rogers (1975) to explain the impact of fear appeals on attitude and behaviour change particularly related to health issues, and was subsequently applied to other threat-related issues. According to PMT, two cognitive processes – threat appraisals (perceived severity and perceived vulnerability) and coping appraisals (response efficacy, self-efficacy, and response costs), are combined to activate individuals' motivation to protect themselves from potential threats (Prentice-Dunn & Rogers, 1986). Note that coping appraisals conceptually overlap with some travel vaccination concerns, which will be discussed in the following section. Hence, we postulate that people, who perceive themselves as vulnerable to COVID-19 infection during international travel and perceive the consequence of infection as severe, are more likely to receive the COVID-19 vaccine for international travel.

P1: Perceived severity of contracting COVID-19 during travel has a positive effect on willingness to receive vaccine for international travel.

P2: Perceived vulnerability to COVID-19 during travel has a positive effect on willingness to receive vaccine for international travel.

Travel desire refers to individuals' lust for a certain type of trip given no financial or other constraints and is distinct from travel motivation (Larsen et al., 2011). The Golden Week in China and Thanksgiving holiday in the United States show that people's desire for travel remains strong (Cheer et al., 2021). We, therefore, incorporate the construct of travel desire in the framework and posit that people with a strong travel desire are more inclined to receive the COVID-19 vaccine for international travel.

P3: Travel desire has a positive effect on willingness to receive vaccine for international travel.

Response costs in PMT refer to any barriers (e.g. inconvenience, money, time, unpleasantness, side effects) that inhibit individuals from adopting protective behaviours (Prentice-Dunn & Rogers, 1986). As an overarching concept, it is particularly valuable for understanding the impact of different barriers on individuals' willingness to adopt the recommended protective behaviour, which, in turn, facilitates the design of effective intervention strategies. Unfortunately, most studies using PMT only treat response costs as a general construct and pay little attention to detailed barriers. Moreover, while it is essential to contextualize construct measures when using health behaviour models (Champion & Skinner, 2008), few studies have adequately modified measurement

instruments to suit different contextual needs. Particularly, response costs may vary significantly depending on different research context.

Therefore, it is of great theoretical and practical significance to extend the original PMT model by elaborating the concept of response costs from multiple aspects in the context of vaccination, which is operationalized by incorporating the concept of travel vaccination concerns into the framework. Travel vaccination concerns refer to apprehensions that individuals hold about travel vaccination, which may potentially prevent them from being vaccinated (Adongo et al., 2021). Adongo et al. (2021) proposed a six-dimensional scale (see Table 1) to conceptualize travel vaccination concerns, including efficacy, safety, cost, time, access, and autonomy concerns. Among these concerns, efficacy concern overlaps with response efficacy in PMT, which refers to the perceived effectiveness of the COVID-19 vaccine; access concern and autonomy concern overlap with self-efficacy, which refers to individuals' confidence in their ability to receive the COVID-19 vaccine; safety concern, cost concern, and time concern overlap with response costs, which refer to barriers that inhibit individuals from receiving the COVID-19 vaccine. Many previous studies (e.g. Crockett & Keystone, 2005; Lammert et al., 2016) have confirmed that travellers' vaccination concerns reduce their willingness to receive vaccines. We, therefore, postulate that these travel vaccination concerns will reduce people's willingness to receive the COVID-19 vaccine for international travel.

Particularly, the literature shows that vaccine safety is one of the major concerns of travellers and other general population (Adongo et al., 2021). Cummings et al. (2021) argued that PMT does not adequately explain some risk circumstances, where the recommended protective behaviour itself may lead to perceived or real secondary risks (e.g. the COVID-19 vaccine uptake may cause side effects). They, therefore, proposed the secondary risk theory to incorporate a secondary threat appraisal (perceived severity and vulnerability of the secondary risk caused by the recommended protective behaviour) into the original PMT model. According to Cummings et al. (2021), when people perceive the secondary risk as severe or perceive themselves as vulnerable to the secondary risk, they tend to avoid adopting the recommended protective behaviour. The secondary risk theory is especially constructive to reflect people's concern about COVID-19 vaccine's safety. Hence, we apply the secondary risk theory to further elaborate and extend the construct of safety concern by introducing two constructs: perceived severity of the vaccine's side effects and perceived vulnerability to the vaccine's side effects. According to the secondary risk theory, we posit that people, who perceive themselves as vulnerable to the vaccine's side effects and perceive the side effects as severe, are less likely to receive the COVID-19 vaccine for international travel.

P4: Efficacy concern has a negative effect on willingness to receive vaccine for international travel.

P5: Access concern has a negative effect on willingness to receive vaccine for international travel.

P6: Autonomy concern has a negative effect on willingness to receive vaccine for international travel.

P7: Perceived severity of vaccine's side effects has a negative effect on willingness to receive vaccine for international travel.

P8: Perceived vulnerability to vaccine's side effects has a negative effect on willingness to receive vaccine for international travel.

Table 1. Definitions of travel vaccination concerns.

Dimension	Definition
Safety concerns	Feeling that travel vaccination results or will result in harm or injurious outcomes.
Efficacy concerns	Concerned that vaccines do not or will not perform as desired or expected.
Cost concerns	Concerned with the financial burden associated with accessing travel vaccination.
Time concerns	Vaccination would result in waste of time or loss of time convenience.
Access concerns	The difficulty or inability to access needed travel vaccines.
Autonomy concerns	Feeling that vaccination and its related policies are limiting one's liberty, autonomy and/or freedom.

Source: Adapted from Adongo et al. (2021).

P9: Cost concern has a negative effect on willingness to receive vaccine for international travel.

P10: Time concern has a negative effect on willingness to receive vaccine for international travel.

In summary, we propose the integrated conceptual framework (Figure 1) including ten propositions by incorporating the concepts of travel desire and travel vaccination concerns into the original PMT model to examine people’s willingness to receive the COVID-19 vaccine for international travel.

3. Conclusion

Although PMT has been extensively used for four decades and acclaimed for its parsimony and simplicity, these merits also entail limitations. Four constructs in PMT, perceived severity, perceived vulnerability, response efficacy, and self-efficacy, are facilitating factors of protective behaviour, while only one parsimonious construct, response costs, represents the inhibiting factor. However, in some cases, these response costs are also critical to identifying specific barriers that prevent people from performing the protective behaviour. The imbalanced emphasis of PMT between facilitating and inhibiting factors may limit its utility in explaining certain protective behaviour, thereby weakening its practical significance in promoting the recommended protective behaviour.

Many researchers have added new constructs to PMT, or combined PMT with other behavioural theories based on different contextual needs to enhance model’s explanatory or predictive power (Cummings et al., 2021), which is constructive to further understand health-related behaviours (Champion & Skinner, 2008). However, researchers should comprehend the conceptual meanings of constructs in different models before attempting to combine constructs across models, as

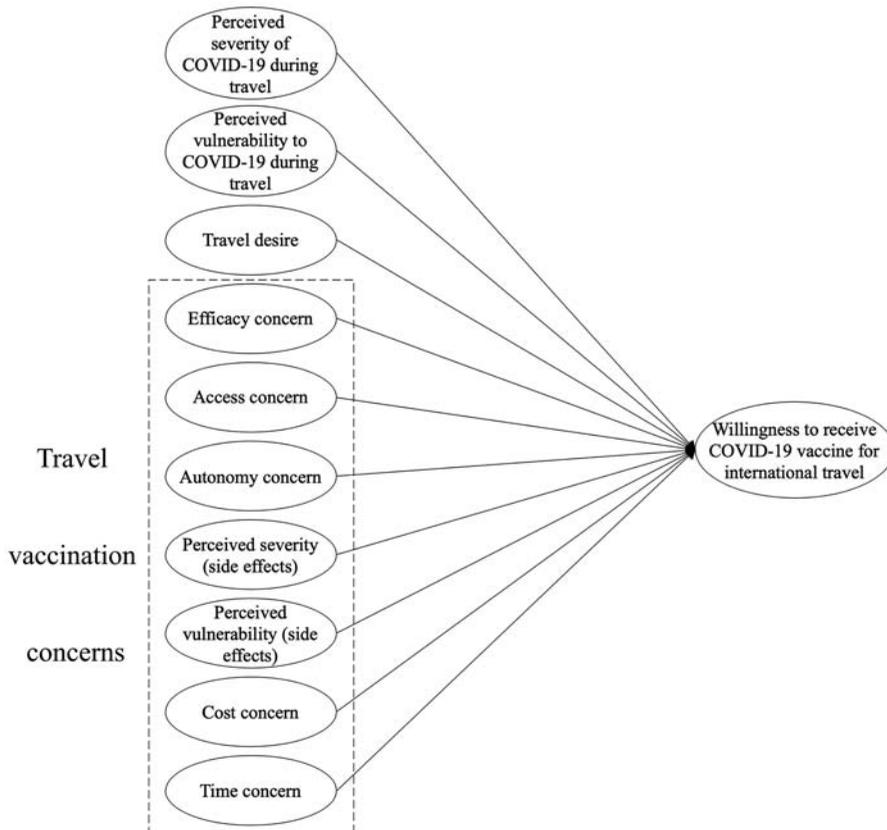


Figure 1. Proposed conceptual framework.

some of them are largely complimentary with conceptual overlap between constructs (Weinstein, 1993). We, therefore, deliberately consider the overlap between PMT constructs and travel vaccination concerns to avoid any redundancy or confoundedness of the proposed framework.

By incorporating the concept of travel vaccination concerns into the proposed framework, on the one hand, it has a theoretical significance because it expounds the construct of response costs, which overcomes PMT's deficiency of imbalanced emphasis between facilitating and inhibiting factors, on the other hand, it has a practical significance because it helps researchers to fully understand both the facilitating and inhibiting factors, to design more effective intervention strategies to promote the recommended protective behaviour. Moreover, the proposed framework contributes to the literature by applying the secondary risk theory to further elaborate the safety concern of vaccine (perceived severity and vulnerability), which is particularly constructive as COVID-19 vaccine's safety is one of people's primary concerns. Finally, the framework incorporates the concept of travel desire to suit the specific context of vaccination for international travel.

It should be noted that this framework was proposed based on the existing theories, and only the most general relevant factors were included. However, sometimes the existing theories (models) may become inadequate, and additional variables are necessary for new scenarios or different research contexts. Besides, in health behaviour models such as the health belief model (HBM), demographic (e.g. age, gender, ethnicity, education, etc.), sociopsychological (e.g. personality, social class, and social pressure, etc.), and structural variables (e.g. knowledge about a disease, etc.), may affect health-related behaviours indirectly by influencing perceptions (Rosenstock, 1974).

Nevertheless, considering the generalizability, we avoided proposing a more complex framework because of diverse research contexts. In some cases, researchers may need to modify this framework to suit specific research context. For example, people in East Asian countries are usually more cautious about disease and health. Therefore, they are generally aware of the risk of COVID-19, regardless of age and education. While in many Western countries, people's awareness of the risk seems to vary with age, health status, and education. In such a case, these demographic variables may become relevant. If the research results support the hypotheses, policymakers can target specific groups in their health campaigns accordingly. Similarly, it is also expected that governments around the world need to focus on different factors to formulate appropriate intervention policies. For instance, based on the existing clinical data, the traditional inactivated COVID-19 vaccine is somewhat safer than mRNA and vector vaccine, but has a relatively lower efficacy. Therefore, in countries where the inactivated vaccine is prevalent, policymakers should pay more attention to promoting the vaccine's efficacy rather than safety. We recommend that future scholars consider these context-based factors when designing their research.

Despite the ethical issues, as UNWTO Secretary-General Pololikashvili said, 'the rollout of vaccines is a step in the right direction, but the restart of tourism cannot wait.' We hope that this general framework could serve as a basis for more future studies with specific context-based factors, which can provide timely and beneficial implications for policymakers in different countries to design tailored intervention policies to promote people's willingness to receive the COVID-19 vaccine for international travel.

Disclosure statement

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

ORCID

S. Mostafa Rasoolimanesh  <http://orcid.org/0000-0001-7138-0280>

References

- Adongo, C. A., Amenumey, E. K., Kumi-Kyereme, A., & Dube, E. (2021). Beyond fragmentary: A proposed measure for travel vaccination concerns. *Tourism Management*, 83, 104180. <https://doi.org/10.1016/j.tourman.2020.104180>
- Champion, V. L., & Skinner, C. S. (2008). The health belief model. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 45–65). John Wiley & Sons.
- Cheer, J. M., Hall, C. M., & Saarinen, J. (2021, January 15). Vaccines may soon allow international travel to take off again. But will it ever return to normal? *World Economic Forum*. <https://www.weforum.org/agenda/2021/01/covid-19-vaccines-may-soon-allow-take-off-again-will-future-international-travel-return-to-normal/>
- Crockett, M., & Keystone, J. (2005). "I hate needles" and other factors impacting on travel vaccine uptake. *Journal of Travel Medicine*, 12(supplement 1), s41–s46. <https://doi.org/10.2310/7060.2005.12056>
- Cummings, C. L., Rosenthal, S., & Kong, W. Y. (2021). Secondary risk theory: Validation of a novel model of protection motivation. *Risk Analysis*, 41(1), 204–220. <https://doi.org/10.1111/risa.13573>
- Gossling, S., Scott, D., & Hall, C. M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1–20. <https://doi.org/10.1080/09669582.2020.1758708>
- Hall, C. M., Scott, D., & Gossling, S. (2020). Pandemics, transformations and tourism: Be careful what you wish for. *Tourism Geographies*, 22(3), 577–598. <https://doi.org/10.1080/14616688.2020.1759131>
- Lammert, S. M., Rao, S. R., Jentes, E. S., Fairley, J. K., Erskine, S., Walker, A. T., Hagmann, S. H., Sotir, M. J., Ryan, E. T., & LaRocque, R. C. (2016). Refusal of recommended travel-related vaccines among U. S. International Travellers in Global TravEpiNet. *Journal of Travel Medicine*, 24(1), 1–7. <https://doi.org/10.1093/jtm/taw075>
- Larsen, S., Brun, W., øgaard, T., & Selstad, L. (2011). Effects of sudden and dramatic events on travel desire and risk judgments. *Scandinavian Journal of Hospitality and Tourism*, 11(3), 268–285. <https://doi.org/10.1080/15022250.2011.593360>
- Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M. D., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine*, 32(19), 2150–2159. <https://doi.org/https://doi.org/10.1016/j.vaccine.2014.01.081>
- Prentice-Dunn, S., & Rogers, R. W. (1986). Protection motivation theory and preventive health: Beyond the health belief model. *Health Education Research*, 1(3), 153–161. <https://doi.org/10.1093/her/1.3.153>
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change1. *The Journal of Psychology*, 91(1), 93–114. <https://doi.org/10.1080/00223980.1975.9915803>
- Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health Education Monographs*, 2(4), 328–335. <https://doi.org/10.1177/109019817400200403>
- Weinstein, N. D. (1993). Testing four competing theories of health-protective behavior. *Health Psychology*, 12(4), 324–333. <https://doi.org/10.1037/0278-6133.12.4.324>