The role of psychological safety in online tourism and hospitality learning

Kijung Choi[A]

A   *Lecturer in Resort and Hotel Management, William Angliss Institute, Melbourne, Australia*

Marcela Fang[B]

B   *Senior Lecturer, Faculty of Higher Education, William Angliss Institute, Melbourne, Australia*

Correspondence

kijung.choi@angliss.edu.au [A]

Abstract

This study proposes and tests a conceptual framework to examine how tourism and hospitality students' psychological safety and personal resourcefulness in online learning reach their tourism and hospitality threshold learning outcomes. This research develops a conceptual framework integrating the conservation of resources and social information processing theories and the findings of a qualitative study through a sequential mixed-methods approach. Subsequently, the model is tested with online survey data using a structural equation modelling technique. The results suggest that, for psychological safety, students' computer self-efficacy and peer collaboration significantly affect overall students' perceived graduate outcomes, whereas lecturer support has no significant impact. Further analysis of the results, along with theoretical and practical implications, are likewise discussed.

Introduction

Over the past two and half years, tourism and hospitality higher education providers have been continually challenged to adapt to the rapidly changing environmental conditions triggered by the COVID-19 pandemic. The initially rushed online teaching and learning approaches have aggravated students' learning endurance and their motivation to engage in their online learning to enter the tourism and hospitality industry upon graduation. As students move from fully face-to-face learning to online learning during highly volatile, uncertain, and stressful times, students' personal resourcefulness – the ability to flexibly face challenges and feel psychologically safe to speak up without fear in the socially constructed learning context, is important to understand. An individual's personal resourcefulness refers to the ability to deal with challenging situations (Hobfoll, 2002) and the Conservation of Resources theory (COR) (Hobfoll, 1989) suggests that individuals are naturally driven to protect, acquire and use their resources (e.g., emotions, mindsets, energies) to manage life's demands to preserve their well-being. However, it cannot be automatically assumed that students can effectively manage their resources in light of different learning conditions while also managing other life activities continually influenced by the evolving Covid-19 uncertainties. Particularly, the switch to online learning has been found to lead to a higher cognitive load, affecting students' stress levels and their capacity to adapt to new ways of learning (Oyedotun, 2020). According to COR, when individuals encounter stressful situations, they naturally strive to preserve and attain new resources (e.g., preserve personal energies, use their existing skills, reach out for social support and/or material goods) (Hobfoll, 2002). The COR theory suggests a framework in which important resources specific to the online learning context could be identified to support the development of psychological safety and also the threshold development of the tourism and hospitality graduate outcomes as students take online courses.

In addition, online learning requires the use of technology to enable teaching and learning engagement, which requires methodological changes to enable effective communication and interaction in the online course among and between students and lecturers (Howlett et al., 2009). Zainuddin and Halili (2016) stressed that a learning strategy is needed to support learning in the technology-enabled learning context, and students' motivation, interaction, and engagement must be incorporated into that process. Therefore, students' learning needs should be supported through the use of suitable digital tools to enable students to effectively interact with the learning content and their peers and lecturers. However, the sudden transition to an online learning environment could have elevated students' psychological states and negated their learning efficacy. Waites et al. (2020) stressed that change and uncertainty are typically known to ignite feelings of worries, concern, and anxiety, thus, psychological safety needs to be cultivated in the learning environments to support students' agency to engage with others in their learning (Schein & Bennis, 1965; Wanless, 2016). Various researchers in the field of organizational development have posited that learning performance can be supported by the feeling of being psychologically safe (Edmondson et al., 2016; Edmondson & Lei, 2014; Kahn, 1990). Although these findings confirmed a route of the relationship from psychological safety to learning performance in the organizational context, the path has not been investigated in the context of online learning, and tourism and hospitality students perceived graduate outcomes. Especially it is not known yet whether the newly crafted online learning experiences progressed or stagnated the tourism and hospitality students' ability to reach the tourism and hospitality domain thresholds of problem-solving, collaboration, service and experience design, interdisciplinary inquiry, and professional responsibility (Whitelaw et al., 2015) and giving students the confidence to secure employment and achieve success in the industry in the post-pandemic era. To better understand what and how online learning conditions play a role in influencing students' resourcefulness that promotes learning orientation and graduate outcomes, it is necessary to explore the antecedents of students' psychological safety in the online learning higher education context.

Educational literature highlights the importance of social interactions, such as student-to-student and teacher-to-student interactions, wherein online learning interactions support learning engagement (Anderson, 2011; Picciano, 2017). Lecturers have an important role in influencing the online learning conditions and interactions that could positively or negatively impact students' emotional, social and cognitive processes, therefore prime students for learning (Cleveland-Innes & Campbell, 2012). As educational researchers continue to shed light on the impact of various levels of student-to-student and teacher-to-student interactions and learning outcomes, integration of the social with psychologically-cognitive conditions is warranted and to be explored in online education. Thus, this study aims to (1) identify students' online learning resources influencing students' psychological safety, and (2) examine the relationship between psychological safety in online learning and students' perceived attainment in tourism and hospitality graduate outcomes. This study expands the online learning literature by delineating the linking between the social and psychologically-cognitive underlying processes through which educators can nurture students' learning agency and learning performance orientation, enabling them to reach the program learning thresholds of graduate outcomes.

Literature review

Tourism and hospitality graduate outcomes

Tourism and hospitality higher education institutions globally are increasingly developing tourism and hospitality standards as the means of quality assurance that graduates of bachelor's and master's programs meet the needs of the tourism and hospitality industries (Dale & L'Espoir Decosta, 2017). The publication of *Tourism, Hospitality and Events Learning and Teaching Academic Standards* by Whitelaw et al., 2015, derived from a project of an Office for Learning and Teaching in Australia, now guides Australian academics. The project identified five tourism, hospitality, and events (THE) domains, which graduates are expected to demonstrate upon graduation, including *problem-*

solving, collaboration, service and experience design, interdisciplinary inquiry, and professional responsibility. This project suggested incorporating these domains into units/subjects in undergraduate and postgraduate tourism and hospitality programs (Gross et al., 2017). While the relevant knowledge and skills specific to each domain are to be fostered through suitable teaching and learning content and practices, tourism and hospitality graduates are also expected to demonstrate various personal qualities, such as traits, attitude, and self-concept that will contribute to their careers and advancements within the broader tourism industry (Harvey, 2000).

To help students gain work-related confidence while studying, it is important to understand students' perspectives on whether tourism and hospitality units/subjects (e.g., face-to-face, online and blended) contribute to the development of knowledge and skills leading to the evidence of the specified five domains. This is because students' self-awareness of their skills and capabilities can influence their mindsets and career decisions, such as where to work within the industry and whether and when to apply for promotion. This can be explained through Bandura's self-efficacy concept, defined as the "beliefs one has in own capabilities to organize and execute the sources of action to produce given attainments", where self-efficacy acts as a motivation for students' behavior like accepting a job and type of job an individual takes (Bandura, 1997, p. 3; Betz et al., 2005). In education, self-efficacy was found as the underpinning mechanism between academic achievement and career preparation behavior (Choi & Kim, 2013). Kahraman and Alrawadieh (2021) found that students' perceived education quality significantly influenced their intention to join the tourism and hospitality industry. The authors suggested that the more the students perceive their education of higher quality, the more likely they will develop a positive attitude to enter the industry upon graduation.

However, the COVID-19 pandemic disrupted the higher education teaching and learning approaches by transitioning to online learning, and many higher education institutions have progressed their online teaching and learning approaches since then. Recent research has demonstrated that social media use as an alternative online learning approach fosters undergraduate students' engagement and knowledge acquisition during the COVID-19 pandemic (Dutta, 2020). Furthermore, researchers suggested supporting students' e-learning readiness skills to enhance their hybrid/online learning ability in the post-COVID-19 era (Fang & Choi, 2022; Tang et al., 2021). As higher education institutions intend to continue offering courses online in the post-pandemic era, the need is even more evident to inform current and future online course (re)designs. However, little is known about how the changes from face-to-face teaching and learning to fully online contributed to students' growth in the tourism and hospitality knowledge and skills underpinned by the five domains. The changed teaching and learning approaches most likely influenced students' perceptions of whether their knowledge and skills within the five domains have evolved through online learning. To help shape the quality of future online tourism and hospitality higher education, it is essential to understand what key factors can support students' mindset and autonomy to

engage in active development and threshold achievement of the graduate outcomes underpinned by the five THE domains.

The Tourism, Hospitality and Events Learning and Teaching Academic Standards project (Whitelaw et al., 2015) suggested a competency-based approach that focuses on the student's ability to demonstrate the knowledge and skills linked to each of the five threshold outcomes. While learning outcomes are traditionally assessed through subject/unit assessments, studies are yet to ascertain the respective criteria for each domain equivalent to the higher education grading system at undergraduate and postgraduate levels. Therefore, through the competency-based approach, the five domains of knowledge and skills can be viewed as threshold competencies that the students should be able to apply in the tourism and hospitality workplace context upon graduation. As pointed out by Jabeen et al. (2021), this type of employability could be viewed subjectively, particularly when individuals' perspectives are needed to understand potential weaknesses. For example, self-perception and belief in own ability have been found to influence confidence to find employment (Rothwell & Arnold, 2007) or to move between jobs and workplaces (De Cuyper & De Witte, 2011). Frawley et al. (2019) stressed that higher education institutions should place more focus on employability, as it is among the students' top considerations when deciding where to study. Thus, this study seeks to assess the students' perceptions of whether the novel online learning approaches derived from the COVID-19 pandemic contributed to their perceptions of evolved employability through the lens of the five THE domains – viewed as the progress made toward the threshold levels of tourism and hospitality graduate outcomes.

Psychological safety

Existing research finds that psychological safety is an important element that enables learning and change, especially in environments where human interactions play a central role, such as healthcare and education (Edmondson et al., 2016); and in a world that is rapidly volatile and uncertain (Bowman, 2019). Psychological safety is described as the degree to which an individual perceives "the consequences of taking interpersonal risks in a particular context", like speaking up (Edmondson & Lei, 2014, p. 24). According to Kahn (1990), the perceived level of psychological safety influences how an individual engages in a given activity – thus, in the context of this study, how students engage in their online classes defined by various types and strengths of relationships between them and other students and the subject lecturers. While psychological safety has been studied mostly in organizational contexts, a handful of researchers have started to explore the construct in health education (e.g., Edmondson et al., 2016; Roh et al., 2021; Tsuei et al., 2019). However, it is not yet known whether the courses of the COVID-19 era in the online learning context supported students' psychological safety and the progress toward reaching the graduate outcome thresholds.

Newman et al.'s (2017) systemic literature review of psychological safety in organizations uncovered variables

like supportive organizational practices, leadership behaviors, relationship networks, and individual and team characteristics that influence organizational outcomes. In the field of online education, 'support, behavioral and relational variables' could potentially affect student learning performance through their perceived psychological safety and, in turn, influence the achievement of the graduate outcomes. Tsuei et al. (2019) found that a sample of medical students perceived psychological safety in a face-to-face support course as feeling not being judged, having supportive relationships with peers and mentors, and being in a state free from worries. Edmondson et al. (2016) found that psychological safety varies significantly between educational organizations (management-educator context; non-classroom context) and across groups within the health care sector. Thus, the study of online learning conditions impacting students' perceptions of psychological safety in tourism and hospitality higher education could uncover students' levels of engagement in online learning and the development of the knowledge and skills expected by tourism and hospitality employers. Therefore, we propose that:

H1: Students' perceived psychological safety is positively associated with growth in graduate outcomes.

Social Information Processing (SIP) theory

While it is not clear yet how social support, as a resource, can enable one's resourcefulness when looking through the COR lens, this study further looks through the Social Information Processing theory (SIP; Salancik & Pfeffer, 1978) to understand the underpinning mechanism, specifically within the online learning context. According to Zalesny and Ford (1990), SIP theory builds on a person's social environment and information processing capabilities. The theory posits that individuals decide upon their behavior based on the clues observed from the immediate social environment (e.g., online class). Fulk et al. (1987) highlighted that social clues are also observed as individuals engage in the communication exchange in the social environment. Individual internalization then leads to an awareness of needs and perceptions (Bhave et al., 2010). Thus, in the online learning context, students continually receive social clues from their online class – their peers and lecturers – which may lead to the decisions of whether one would invest in their personal resources to interact and engage with their peers and seek support from lecturers for learning gains or not, as they may find some of these resources potentially energy-draining.

Jabeen et al. (2021) suggest that the social context influences one's perception of whether a given resource is valuable. Halbesleben et al. (2014) pointed out that having access to a greater range or sum of resources does not guarantee successful outcomes. Hence, it is here where SIP can strengthen COR and help establish what resources are more helpful to people in a given context (Jabeen et al., 2021). Therefore, in this study, we seek to uncover whether peer collaboration and lecturer support affect the formation of psychological safety and lead to evolved graduate outcomes through online education. The following section details the

development of hypotheses specific to each study area.

Peer collaboration

To enhance students' learning achievement, interactions with peers within the learning environment form an essential element (Bird, 2007; Pietarinen et al., 2014; Reschly et al., 2020). Chen and Jang (2010) highlighted that peer support could function as a fuel that learners gain from social interactions. Guided by COR, social interactions can thus be seen as triggers of one's autonomy and collaborative efforts and outcomes, signifying personal resourcefulness. If students perceive themselves as having the right skills for a given learning task and have the agency to control their actions in social situations, such as peer learning, they are likely to exert more self-determination and achieve better outcomes through their enhanced psychological well-being. Collaborative learning tasks and approaches have proved effective in supporting students' cognitive understanding and ability by applying learned concepts to practical situations (Huang, 2020; Patiar et al., 2020). Specifically, in the online learning process, the students' ability to use online learning tools to engage in social interactions contributes to an interconnected sense of being and greater knowledge acquisition through the co-construction of knowledge (Eryilmaz et al., 2013). Further, Altınay (2017) stated that a supportive and collaborative online learning environment could foster personal learning and professional development. Within the online learning process, peer support enriches interactions, which can ignite the feeling of psychological safety, further triggering positive learning behavior, such as expressing thoughts and overall sharing of ideas and knowledge (Zhang et al., 2010).

Thus, we propose that the extent to which students work collectively with their peers impacts students' feeling of psychological safety, which in turn influences their agency to accomplish the learning outcomes:

H2: Peer collaboration has a positive effect on psychological safety.

Lecturer support

Organizational research has shown that more public, identity-forming, or less clear moments can promote psychologically unsafe feelings (Nembhard & Edmondson, 2006), impacting learning performance. Building on this in the online learning context, lecturer support is required in online learning to help present and deliver suitable online learning activities, challenges, and assessments in a psychologically safe manner, to prolong the student learning experience and contribute to better learning outcomes. When students feel psychologically safe, reduced defensiveness and increased open-mindedness may ignite better management of anxiety levels, thus, preparing the mind for optimized learning. Csikszentmihalyi (2014) explained how optimized learning performance is attributed to balancing skills and challenge levels. In line with Csikszentmihalyi's (2014) conceptualization of flow, a concept that refers to a state of optimized performance when individuals believe they have sufficient skills to perform a given task or challenge (e.g.,

learn in the social online class, solve a collaborative problem challenge creatively, etc.), learning can be optimized, and a better performance achieved.

Previous studies found that lecturer support plays an important role in students' learning outcomes (Bowman, 2019; Hess & Ludwig, 2018; Liu et al., 2018). As educators in the higher education online learning environment move more towards socially constructed and interactive teaching and learning, the present study argues that educators need to pay close attention to shaping the right online learning conditions in this process (e.g., peer-to-peer and peer-lecturer interactions). Hence, students feel psychologically safe to ask questions, discuss various topics with their peers, and provide feedback to promote deep learning. Bowman (2019) stated that lecturers, as the enablers, need to make the learning environment safe for students to express their thoughts freely. Bowman (2019) further suggested that in the social learning context, lecturers can help build trusting peer relationships and effective learning experiences through emotional and social intelligence. Thus, this study focused on the extent to which lecturers used online learning tools to provide academic support, such as explaining what is required to do in online learning, communicating with students, providing assistance and tailoring the learning activities:

H3: Lecturer support has a positive effect on psychological safety.

This study links the tourism and hospitality threshold domains (graduate outcomes) with students' subjective evaluations of psychological safety, peer collaboration, and lecturer support.

Methodology

A three-phase mixed triangulation approach was adopted, combining qualitative and quantitative data sources (i.e., interviews, surveys). Triangulation allows scholars to obtain a comprehensive understanding of phenomena using different methods (Creswell & Tashakkori, 2007) and verify consistency in those findings (Gibson, 2017). The complex nature of online learning factors that may potentially affect students' psychological safety in online learning motivated us to conduct an initial qualitative phase – Study 1, which uses semi-structured interviews to confirm the proposed constructs and identify the potential underlying factors that students perceived leading to feeling psychologically safe in studying online. This exploratory stage generated a conceptual framework to be examined in the following quantitative phase. Study 2 analyzes quantitative survey data through structural equation modeling (SEM) to test the proposed conceptual model. Study 3 involves follow-up semi-structured interviews to enhance the understanding of the quantitative study results. Both the qualitative and quantitative phases of the study applied a convenience sampling approach to recruit undergraduate hospitality and tourism management students who experienced online learning.

Study 1—Interviews and results

To obtain qualitative information, semi-structured individual online interviews were performed with open-ended questions (e.g., "What were the essential resources that helped you feel psychologically safe in the online class?"). A total of seven interviewees (three females and four males; five domestic and two international students) were recruited through a snowball sampling technique. Interviews were conducted in August 2020 with undergraduate tourism and hospitality management students having online learning experience in an Australian university. Participants were asked about their online learning experience and the key resources valued to feel psychologically safe in an online learning class. The interviews lasted between 30 and 45 minutes, and the responses were analyzed through content analysis. Based on the results and the researcher's prior understanding of the subject matter, the factors (i.e., peer collaboration and lecturer support) highlighted in previous research were confirmed. In addition, students' capabilities to use a computer and the relevant programs in their online learning process appeared to be driving the development of students' perceived psychological safety.

> When it comes to online learning, it is important to be in a comfortable learning environment – for me, I know how to use Zoom, Padlet... so I felt very comfortable. (Participant 6, Male)

> I know how to hide my video and mute myself, participating in online classes without revealing my personal details such as name and face to "strangers" aka other students whom I have never met in real life – made me no hesitation to join the classes. (Participant 3, Female)

Previous online learning research showed that computer skills affect online learning performance (Peng et al., 2006), suggesting that self-efficacy in technology could be an important personal resource for students learning online. The positive relationship between self-efficacy and technology use in online learning has been confirmed by Sun and Chen (2016) and Corry and Stalla (2018). Self-efficacy has been found to influence student choices of "activities, effort and persistence across a wide range of human functioning" (Artino, 2012, p. 84). The higher the level of student self-efficacy, the better their effort and perseverance when faced with challenging tasks (Bandura, 2001). However, no prior COR research has yet established whether computer self-efficacy is an important resource in the context of higher education online learning. Therefore, we integrated the results of the previous studies and our qualitative findings into a conceptual model of this study, as shown in Figure. 1. This also led to an additional hypothesis – *H4: Computer self-efficacy has a positive effect on psychological safety.*

Study 2—Online survey

Measurement instrument. The measurement items for the constructs were adapted from the literature, but some items' wordings were modified to ensure study context and
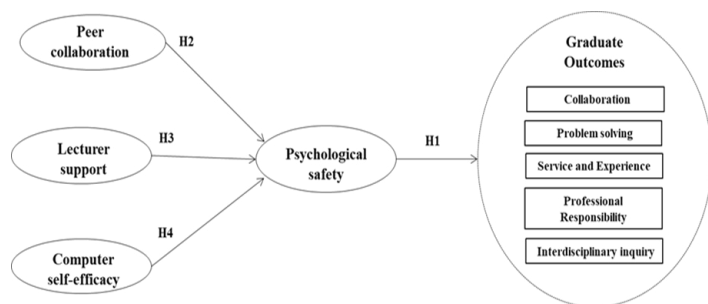
Figure 1. Proposed conceptual model.

word clarity. Measures for peer collaboration (three items) and lecturer support (four items) were adapted from Krause and Coates (2008). Computer self-efficacy was measured using three items from Hung et al. (2010). The scale measuring psychological safety was adapted from Schepers et al. (2008) (four items). Those items were measured using a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Five items capturing perceived tourism and hospitality evolved graduate outcomes were adapted from the Office of Learning and Teaching (2016), also measured on the 5-point Likert scale (from 1 = not at all improved to 5 = very improved). A total of 19 measurement items were pre-, and pilot-tested before the main study and did not identify any major issues. Assessment of internal consistency was achieved via Cronbach's alpha of .921, exceeding the recommended threshold of .70 (Nunnally, 1994). The Kaiser-Meyer-Olkin (KMO) value was .918, above the recommended value of .80 (Hair et al., 2014), indicating good scale reliability and validity.

Data collection and analysis. The developed survey instrument for this study was posted on Google forms as an online questionnaire, including demographic questions, and distributed for five weeks in October and November 2020. An invitation email was sent to undergraduate hospitality and tourism management students who experienced online learning at one Australian university. A total number of 196 data were collected for analysis. The sample size met the recommended 1:10 ratio for the number of responses to the number of items (Hair et al., 2014). A descriptive statistical analysis was conducted to explore the sample distribution and characteristics using SPSS 24. By using a two-step SEM approach in AMOS 24 (Byrne, 2016), the data were analyzed to test the proposed relationships in the research model.

Study 3 – Follow-up interviews

This phase was performed to obtain further insights into the Study 2 results. In particular, follow-up semi-structured interviews assisted the researchers in exploring the inconsistent results from the quantitative study and previous research in an in-depth manner. The same participant recruitment strategy was used as in Study 1. All interviewees were undergraduate tourism and hospitality management students with a prior online learning experience in an Australian university and no prior participation in this research. A total of eight interviews (four females and four males; four domestic and four international students) were asked several open-ended questions based on the

quantitative study results (e.g., "How valuable was support from your lecturer to feel safe to learn in an online class?") for approximately 15 to 20 minutes.

Results

The respondents' demographics are reported in Table 1. The female dominance in the sample (71.43%) reflects the general profile of hospitality and tourism students in Australia. The majority were domestic students (58.7 %), with 41.3% being international students.

Table 1. Profile of respondents.

	Category	Frequency	%
Gender	Male	56	28.57
	Female	140	71.43
Age	18-24	121	61.73
	25-35	45	22.95
	Over 35	30	15.32
Year of study	1st year	116	59.18
	2nd year	45	22.96
	3rd year	25	12.76
	4th year	10	5.10
Domestic vs International	Domestic	115	58.67
	International	81	41.33

Measurement model

A confirmatory factor analysis on the overall sample data (N = 196) was employed to assess the measurement model. The results indicated that the proposed model has an acceptable fit, with $\chi2$ = 285.702, *df* =142, $\chi2/df$ = 2.012, *p* < .00, CFI = .95, TLI = .94, NFI = .91, RMSEA = .072, SRMR = .492. All factors loaded significantly (p < 0.01) between .64 and .93, which were above 2.57, supporting for convergent validity (Netemeyer et al., 2003; Hair et al., 2014). The composite reliabilities and the average variance extracted (AVE) scores of the five dimensions were above .70 and .50, respectively, indicating good evidence of construct reliability (Hair et al., 2014). For discriminant validity, the AVE value for each dimension was greater than the correlations among them (Fornell & Larcker, 1981), as shown in Table 2.

Table 2. Validity analysis results.

Construct	Mean	SD	CR	AVE	MSV	PS	CS	PC	LS	GO
PS	3.48	1.05	.89	.66	.30	**.82**				
CS	3.85	.989	.81	.58	.39	.54	**.76**			
PC	3.45	1.25	.90	.74	.31	.51	.53	**.86**		
LS	3.83	1.03	.92	.74	.40	.37	.52	.56	**.86**	
GO	3.50	1.11	.94	.77	.40	.54	.63	.54	.63	**.88**

Note. SD = standard deviation; CR = composite reliability; MSV= maximum shared variance; CS = computer self-efficacy; PC = peer collaboration; LS = lecturer support; GO = graduate outcomes.

Structural model

The structural model shows a good fit with $\chi2$ = 359.267, *df* =145, $\chi2/df$ = 2.478, *p* < .00, CFI = .93, TLI = .93, NFI = .91, RMSEA = .082, SRMR = .492. The structural path coefficients indicate that three paths were supported, but one path (i.e., lecturer support → psychological safety) was not supported. Table 3 presents the hypotheses test results.

Table 3. Structural model analysis results.

Hypothesis	Path	Path Coefficient	Critical Ratio	Result
H1	PS → GO	.22	2.96*	Supported
H2	PC → PS	.31	3.33***	Supported
H3	LS → PS	.04	.47 (.64)	Not Supported
H4	CS → PS	.38	3.72***	Supported

Note. PS = psychological safety; GO = graduate outcomes; PC = peer collaboration; LS = lecturer support; CS = computer self-efficacy.
*** $p < .001$, * $p < .05$

Follow-up interviews

To further understand Study 2 quantitative results, we conducted follow-up interviews. There is clear evidence of the positive relationship between peer collaboration and psychological safety, as provided in the following comments:

> We talked and shared our situations, they (classmates) understood what I had been through. Because of them, I could show myself in the (online) class. Definitely, their support was a gain (Participant 6, Male).

> People under the same condition, we had the same goals to achieve and supported to each other which made me feel comfortable during online learning (Participant 8, Female).

Related to the non-significant relationship between lecturer support and psychological safety, although students acknowledged the lecturer's support was valuable to feel psychologically safe to learn online, it became apparent that students longed for emotional support and not just instrumental support.

> A warm and sensible reactions from the lecturer set the secure and non-fearful learning space, for sure (Participant 7, Female).

> When I talked to [the lecturer], he encouraged me to continue studying and helped me having confidence in class (Participant 1, Male).

Discussion and conclusions

Based on the COR and SIP theories and online learning literature, this study identified and examined the key personal and social resources influencing students' psychological safety in online learning and further investigated the relationship between students' psychological safety and perceived growth toward the tourism and hospitality graduate outcome thresholds. Findings were derived from a sequential mixed-methods approach – initial qualitative, quantitative, and follow-up qualitative studies. First, Study 1 showed that the factors of 'peer collaboration' and 'lecturer support' identified in the online learning literature are also important and significant from the students' standpoint to feel psychologically safe when learning online. In addition, the interviews uncovered that students' capability to use a computer and related digital tools played an important part in feeling psychologically safe in the online learning context.

This is in agreement with Eryilmaz et al.'s (2013) findings that students' confidence in using online learning tools in the learning process contributes to greater social engagement and knowledge construction. We concur that the COVID-19 pandemic drove the desire for social connectivity and support in the learning environment to relieve the stress associated with the sudden and rapid change within the learning context.

Computer self-efficacy, on the other hand, provided students with a sense of control, enabling them to manage their engagement with the learning content, their peers, and also the instructors. This aligns with Zhang et al.'s (2010) findings that peer support enriches interactions, which can boost psychological safety, and Choi and Kim's (2013) suggestion that self-efficacy is the underpinning mechanism between academic achievement and career preparation behavior. Overall, these results contributed to the development of a theoretical framework in which the three resources – peer collaboration, lecturer support, and computer self-efficacy – were hypothesized to have a positive impact on students' perceived psychological safety.

Study 2 further quantitatively investigated the relationship between psychological safety and students' perceived growth in tourism and hospitality graduate outcomes. The results underscore the importance of having an online learning environment where students feel free to speak up, ask questions, and give and receive feedback without fearing the consequences of taking interpersonal risks. Psychological safety significantly and positively impacted students' perceived learning growth. We believe the higher level of perceived psychological safety contributed to students' deeper, more meaningful engagement with the content and peers, which enhanced their perceived learning outcomes. This result is in accordance with learning behaviors in organizational studies reported by Carmeli (2007) and academic performance in a face-to-face learning context (Soares & Lopes, 2021). However, to our surprise, the study's results also showed that lecturer support did not form a significant indicator of students' perceived psychological safety in online learning.

To further explore the inconsistent findings between Study 1 and 2, Study 3 was conducted to understand the students' perspectives on the lecturer's role in the online learning context. These findings uncovered that students perceived the lecturer's support as an important resource in their learning process, however, such support needs to be attuned to their feelings rather than being fully transactional (e.g., focused on the technical aspects of learning performance). This finding appears consistent with previous work (Edmondson, 2004), suggesting that superiors should practice empathy to be perceived as accessible and approachable in interpersonal interactions in the organizational context. We, therefore, suggest that these behaviors are also important in the teaching and learning process when students take online courses.

Implications

This study extends the COR theory in the educational context by showing the underlying mechanism that transmits the impact of students' personal and social resources in the online learning process. Personal (computer self-efficacy) and social (peer support) resources are important for students' perceived psychological safety in online learning. These resources are the key resources that boost students' psychological safety, enabling them to reach a psychological state that strengthens their learning focus and agency, enabling their (perceived) learning growth. Therefore, under the COR and SIP theories, the delineated linking between the social and psychologically-cognitive underlying processes in students' online learning is a contribution to psychological safety in online education and learning outcomes (threshold learning/ graduate outcomes).

This study adds to the psychological safety literature as it provides an understanding of the key students' perceived resources, making them feel safe in online learning. This is also the first study that draws on COR and SIP theories in delineating personal and social resources for psychological safety in online education – contributing to the stream of literature on learning outcomes and graduate competencies, explaining how psychological safety is linked with students' perceived improvement in graduate outcomes. The effect of psychological safety on students' graduate outcomes suggests an important source of students' resourcefulness, where a greater ability to control and manage emotional and cognitive resources improves students' ability to focus on their career goals. Upon graduation, students' capacity to reach the industry-related threshold learning outcomes is an important indicator for higher education providers to meet the quality education standards (Office of Learning and Teaching, 2016). However, also crucial for meeting the industry expectations as most employers look for graduates with 21st century skills, including collaboration, problem-solving, creativity, professional responsibility, and other capabilities (Office of Learning and Teaching, 2016).

In practical terms, to support students' learning focus and agency in online tourism and hospitality courses, educators should help foster psychological safety when designing and teaching online courses. From a course design perspective, educators can adopt various multimedia applications that may reduce potential interpersonal risks, such as identifying threats that students may perceive at a given moment (e.g., at the commencement of an online course, when interacting with strangers on an online course, when asked to discuss and provide feedback in the social context and other). Miyazoe and Anderson (2011) identified anonymity as a pedagogical means within the forum and blog-based discussions, contributing to greater student confidence and engagement. Educators can also encourage students to grow their psychological safety by including collaborative problem-solving activities and assessments. Ke and Xie (2009) found that collaborative learning as a form of online pedagogy can increase deeper learning, thus, the construction of knowledge. This study's findings confirm that peer interaction has a significant effect on feeling psychologically safe. Educators can also support students' academic self-efficacy through online teaching approaches that promote student learning engagement and performance. Bandura and others suggest that academic motivation can be reinforced through not only the facilitation of knowledge and skills development but also the development of confidence (e.g., Artino, 2012; Bandura, 1997; Multon et al., 1991). This study's qualitative findings suggested that the lecturer's support should be not only transactional (e.g., focused on the teaching and learning instruction) but also empathetic to support students emotionally.

In the teaching area, research starts to show that positive relationships between students and educators may increase students' perception of psychological safety. While relationship-building might be harder to develop in the online learning environment, video conferencing tools have begun to show that visual (cameras on/ off option), audio, and text digital applications used in different ways, times, and contexts can support online presence among peers (Conrad & Donaldson, 2011), students' perceived learning (Richardson et al., 2017), and student interest (Hew et al., 2020).

The findings of this study can also inform the development of course evaluation surveys. Evaluation of online teaching and learning practices is an important mechanism for continually improving education. Building on research evidence about what fosters and limits student learning in the online learning context can contribute to teaching and learning strategies that better support student achievement of program learning outcomes and graduate attributes. By undertaking evaluations that assess students' perceptions of psychological safety, computer self-efficacy, and peer collaboration, educators can design more effective learning practices and assessments that better support the student online learning experience, thereby improving student learning performance.

Limitations and future research

This study offers a significant contribution to the literature on the COR theory, online education, and psychological safety, but there are some limitations related to data collection and analysis, which point to potential areas for future research. First, while this study used a sample of students only in one university, the findings should be generalized with caution. Future research can examine the model with various samples from different online educational settings. Second, the study does not provide an extensive examination of students' personal and social resources influencing their psychological safety in online learning. Future studies can explore other potential resources impacting the interaction with their perceived psychological safety. Specifically, explore how the personal and social resources positively and negatively influence learning performance and what strategies students use to strengthen their learning agility. Third, the learning outcomes of this study were focused on measuring five tourism and hospitality graduate outcomes. Future research can extend the investigation to other types of learning outcomes. Also, to our surprise, the lecturer's support in our conceptual model did not show a significant effect on psychological safety. However, our follow-up interviews uncovered that students seek emotional support

from their lecturers. Future studies could therefore use different measurement scales to account for this important factor.

References

Altınay, Z. (2017). Evaluating peer learning and assessment in online collaborative learning environments. *Behaviour & Information Technology, 36*(3), 312-320. https://doi.org/10.1080/0144929X.2016.1232752

Anderson, T. (2011). *The theory and practice of online learning* (2nd ed.). AU Press.

Artino, A. R. (2012). Academic self-efficacy: From educational theory to instructional practice. *Perspectives on Medical Education, 1*, 76-85. https://doi.org/10.1007/s40037-012-0012-5

Bandura A. (1997). *Self-efficacy: The exercise of control.* W. H. Freeman and Company.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1-26. https://psycnet.apa.org/doi/10.1146/annurev.psych.52.1.1

Betz, N. E., Hammond, M. S., & Multon, K. D. (2005). Reliability and validity of five-level response continua for the career decision self-efficacy scale. *Journal of Career Assessment, 13*(2), 131–149. https://psycnet.apa.org/doi/10.1177/1069072704273123

Bird, L. (2007). The 3 'C'design model for networked collaborative e-learning: A tool for novice designers. *Innovations in Education and Teaching International, 44*(2), 153-167. https://doi.org/10.1080/14703290701251231

Bhave, D. P., Kramer, A. & Glomb, T. M. (2010) Work–family conflict in work groups: Social information processing, support, and demographic dissimilarity. *Journal of Applied Psychology, 95*, 145–158. https://psycnet.apa.org/doi/10.1037/a0017885

Bowman, R. F. (2019). A new story about teaching and learning. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 92*(3), 112-117. https://doi.org/10.1080/00098655.2019.1613339

Byrne, B. M. (2016). *Structural equation modelling with AMOS: Basic concepts, applications, and programming* (3rd ed.). Routledge.

Carmeli, A. (2007). Social capital, psychological safety and learning behaviours from failure in organisations. *Long Range Planning, 40*(1), 30–44. https://psycnet.apa.org/doi/10.1016/j.lrp.2006.12.002

Chen, K.-C., & Jang, S.-J. (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behaviour, 26*(4), 741-752. https://doi.org/10.1016/j.chb.2010.01.011

Choi, K., & Kim, D. Y. (2013). A cross cultural study of antecedents on career preparation behavior: Learning motivation, academic achievement, and career decision self-efficacy. *Journal of Hospitality, Leisure, Sports and Tourism Education, 13*, 19–32. http://dx.doi.org/10.1016/j.jhlste.2013.04.001

Cleveland-Innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning, 13*(4), 269-292. https://doi.org/10.19173/irrodl.v13i4.1234

Conrad, R. M., & Donaldson, J. A. (2011). *Engaging the online learner: Activities and resources for creative instruction.* Jossey-Bass.

Corry, M., & Stella, J. (2012). Developing a framework for research in online K-12 distance education. *Quarterly Review of Online Education, 13*(3), 133-151.

Creswell, J. W., & Tashakkori, A. (2007). Differing perspectives on mixed methods research. *Journal of Mixed Methods Research, 1*(4), 303–308.

Csikszentmihalyi, M. (2014). *Flow and the foundation of positive psychology: The collected works of Mihaly Csikszentmihalyi.* Springer.

Dale, N. F., & L'Espoir Decosta, P. (2017). Editorial – Perspectives to implementing threshold learning outcomes in tourism, hospitality and events education. *Journal of Hospitality and Tourism Management, 30*, 1-3. http://dx.doi.org/10.1016/j.jhtm.2017.02.001

De Cuyper, N. & De Witte, H. (2011) The management paradox: Self-rated employability and organizational commitment and performance. *Personnel Review, 40*, 152–172. https://psycnet.apa.org/doi/10.1108/00483481111106057

Dutta, A. (2020). Impact of digital social media on Indian higher education: Alternative approaches of online learning during COVID-19 pandemic crisis. *International Journal of Scientific and Research Publications, 10*(5), 604-611. http://dx.doi.org/10.29322/IJSRP.10.05.2020.p10169

Edmondson, A. C. (2004). Psychological safety, trust, and learning in organizations: A group-level lens. In R. M. Kramer & K. S. Cook (Eds.), *Trust and distrust in organizations: Dilemmas and approaches.* Russell Sage Foundation.

Edmondson, A. C., Higgins, M., Singer, S., & Weiner, J. (2016). Understanding psychological safety in health care and education organizations: A comparative perspective. *Research in Human Development, 13*(1), 65-83. http://dx.doi.org/10.1080/15427609.2016.1141280

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. *Annual Review of Organizational Psychology and Organizational Behavior, 1*, 23-43. https://doi.org/10.1146/annurev-orgpsych-031413-091305

Eryilmaz, E., van der Pol, J., Ryan, T., Clark, P. M., & Mary, J. (2013). Enhancing student knowledge acquisition from online learning conversations. *International Journal of Computer-Supported Collaborative Learning, 8*(1), 113-144. https://psycnet.apa.org/doi/10.1007/s11412-012-9163-y

Fang, M., & Choi, K. (2022). E-learning achievement of higher education students: Role of students' learning readiness, grit and characteristics. *International Journal of e-Education, e-Business, e-Management and e-Learning, 12*(2), 49-61. https://doi.org/10.17706/ijeeee.2022.12.2.49-61

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.2307/3151312

Frawley, T., Goh, E., & Law, R. (2019). Quality assurance at hotel management tertiary institutions in Australia: An insight into factors behind domestic and international student satisfaction. *Journal of Hospitality and Tourism Education, 31*(1), 1-9. https://doi.org/10.1080/10963758.2018. 1480961

Fulk, J., Steinfield, C. W., Schmitz, J. & Power, J. G. (1987) A social information processing model of media use in organizations. *Communication Research, 14*, 529–552. https://doi.org/10.1177%2F009365087014005005

Gibson, C. B. (2017). Elaboration, generalization, triangulation, and interpretation: On enhancing the value of mixed method research. *Organizational Research Methods, 20*(2), 193-223.

Gross, M., Benckendorff, P., Mair, J., & Whitelaw, P. (2017). Hospitality higher education quality: Establishing standards in Australia. *Journal of Hospitality and Tourism Management, 30*, 4-14. https://doi.org/10.1016/j.jhtm.2017.01.007

Harvey, L. (2000). New realities: The relationship between higher education and employment. *Tertiary Education and Management, 6*(1), 3-17. https://doi. org/10.1023/A:1009685205201

Hair, J., Black, W., Babin, B., & Anderson, R. (2014). *Multivariate data analysis* (7th ed.). Pearson.

Halbesleben, J. R. B., Neveu, J.-P., Paustian-Underdahl, S. C., & Westman, M. (2014). Getting to the "COR": Understanding the role of resources in conservation of resources theory. *Journal of Management, 40*, 1334–1364. https://doi. org/10.1177/0149206314527130

Hess, E., & K. Ludwig (2018). The smart machine age will require a new story about leadership. *Leader to Leader, 87*, 54-59. https://doi.org/10.1002/ltl.20344

Hew, K. F., Jia, C., Gonda, D. E., & Bai, S. (2020). Transitioning to the "new normal" of learning in unpredictable times: Pedagogical practices and learning performance in fully online flipped classrooms. *International Journal of Educational Technology in Higher Education, 17*(57). https://doi.org/10.1186/s41239-020-00234-x

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*, 307–324. https://doi.org/10.1037%2F1089-2680.6.4.307

Hobfoll, S. E. (1989). Conservation of resources. A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524. https://psycnet.apa.org/doi/10.1037/0003-066X.44.3.513

Howlett, D., Vincent, T., Gainsborough, N., Fairclough, J., Taylor, N., Cohen, J., & Vincent, R. (2009). Integration of a case-based online module into an undergraduate curriculum: What is involved and is it effective? *E-Learning and Digital Media, 6*(4), 372-384. https://doi.org/10.2304/elea.2009.6.4.372

Huang, C. E. (2020). Discovering the creative process of students: Multi-way interactions among knowledge acquisition, sharing and learning environment. *Journal of Hospitality, Leisure, Sport & Tourism Education, 26*, 100237. https://doi.org/10.1016/j.jhlste.2019.100237

Hung, M. L., Chou, C., Chen, C. H., & Own, Z. Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education, 55*(3), 1080-1090. https://doi.org/10.1016/j.compedu.2010.05.004

Jabeen, Q., Nadeem, M. S., Raziq, M. M., & Sajjad, A. (2021). Linking individuals' resources with (perceived) sustainable employability: Perspectives from conservation of resources and social information processing theory. *British Academy of Management, 24*(2), 233-254. https://doi.org/10.1111/ijmr.12276

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal, 33*(4), 692-724. https://doi.org/10.5465/256287

Kahraman, O. C., & Alrawadieh, D. D. (2021). The impact of perceived education quality on tourism and hospitality students' career choice: The mediating effects of academic self-efficacy. *Journal of Hospitality, Leisure, Sport & Tourism Education, 29*, 100333. https://doi.org/10.1016/j.jhlste.2021.100333

Ke, F., & Xie, K. (2009). Toward deep learning for adult students in online courses. *Internet and Higher Education, 12*(3), 136-145. https://doi.org/10.1016/j.iheduc.2009.08.001

Krause, K. L., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education, 33*(5), 493-505. https://doi.org/10.1080/02602930701698892

Liu, R. D., Zhen, R., Ding, Y., Liu, Y., Wang, J., Jiang, R., & Xu, L. (2018). Teacher support and math engagement: Role of academic self-efficacy and positive emotions. *Educational Psychology, 38*(1), 3-16. https://doi.org/10.1080/01443410. 2017.1359238

Miyazoe, T., & Anderson, T. (2011). Anonymity in blended learning: Who would you like to be? *Education Technology*

& Society, 14(2), 175-187. http://www.jstor.org/stable/jeductechsoci.14.2.175

Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. Journal of Counselling Psychology, 38, 30-38. https://psycnet.apa.org/doi/10.1037/0022-0167.38.1.30

Nembhard, I. M., & Edmondson, A. C. (2006). Making it safe: The effects of leader inclusiveness and professional status on psychological safety and improvement efforts in health care teams. Journal of Organizational Behaviour, 27(7), 941-966. https://doi.org/10.1002/job.413

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). Scaling procedures: Issues and applications. Sage.

Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: A systematic review of the literature. Human Resource Management Review, 27(3), 521-535. https://psycnet.apa.org/doi/10.1016/j.hrmr.2017.01.001

Nunnally, J. C. (1994). Psychometric theory (3rd ed.). McGraw-Hill.

Patiar, A., Kensbock, S., Beckendorff, P., Robinson, R., Richardson, S., Wang, Y., & Lee, A. (2020). Hospitality students' acquisition of knowledge and skills through a virtual field trip experience. Journal of Hospitality & Tourism Education, 33(1), 14-28. https://doi.org/10.1080/10963758.2020.1726768

Peng, H., Tsai, C. C., & Wu, Y. T. (2006). University students' self-efficacy and their attitudes toward the Internet: The role of students' perceptions of the Internet. Educational Studies, 32(1), 73-86. https://doi.org/10.1080/03055690500416025

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. Online Learning, 21(3), 166-190. http://dx.doi.org/10.24059/olj.v21i3.1225

Pietarinen, J., Soini, T., & Pyhältö, K. (2014). Students' emotional and cognitive engagement as the determinants of well-being and achievement in school. International Journal of Educational Research, 67, 40-51. https://doi.org/10.1016/j.ijer.2014.05.001

Reschly, A. L., Pohl, A. J., & Christenson, S. L. (Eds.). (2020). Student engagement: Effective academic, behavioral, cognitive, and affective interventions at school. Springer Nature.

Richardson, J. C., Maeda, Y., Lv, J., & Caskurlu, S. (2017). Social presence in relation to student's satisfaction and learning in the online environment: A meta-analysis. Computers in Human Behaviour, 71, 402-417. https://doi.org/10.1016/j.chb.2017.02.001

Roh, Y. S., Jang, K. I., & Issenberg, S. B. (2021). Nursing students' perceptions of simulation design features and learning outcomes: The mediating effect of psychological safety. Collegian, 28(2), 184-189. https://doi.org/10.1016/j.colegn.2020.06.007

Soares, A. E., & Lopes, M. P. (2020). Are your students safe to learn? The role of lecturer's authentic leadership in the creation of psychologically safe environments and their impact on academic performance. Active Learning in Higher Education, 21(1), 65-78. https://doi.org/10.1177%2F1469787417742023

Sun, A., & Chen, X. (2016). Online education and its effective practice: A research review. Journal of Information Technology Education: Research, 15, 157-190. https://doi.org/10.28945/3502

Office of Learning and Teaching. (2016). Setting the standard: Establishing threshold learning outcomes for tourism, hospitality and events higher education in Australia. Office of Learning and Teaching. https://ltr.edu.au/resources/ID13-3101_Whitelaw_report_2016.pdf

Oyedotun, T. D. (2020). Sudden change of pedagogy in education driven by COVID-19: Perspectives and evaluation from a developing country. Research in Globalization, 2. https://doi.org/10.1016/j.resglo.2020.100029

Salancik, G. R. & Pfeffer, J. (1978) A social information processing approach to job attitudes and task design. Administrative Science Quarterly, 23, 224-253. https://doi.org/10.2307/2392563

Schein, E. H., & Bennis, W. G. (1965). Personal and organizational change through group methods: The laboratory approach. Wiley.

Schepers, J., de Jong, A., Wetzels, M., & de Ruyter, K. (2008). Psychological safety and social support in groupware adoption: A multi-level assessment in education. Computers & Education, 51(2), 757-775. https://psycnet.apa.org/doi/10.1016/j.compedu.2007.08.001

Tang, Y. M., Chen, P. C., Law, K. M., Wu, C. H., Lau, Y. Y., Guan, J., Dan, H., & Ho, G. T. (2021). Comparative analysis of Student's live online learning readiness during the coronavirus (COVID-19) pandemic in the higher education sector. Computers & Education, 168, 104211. https://doi.org/10.1016/j.compedu.2021.104211

Tsuei, S. H.-T., Lee, D., Ho, C., Regehr, G., & Nimmon, L. (2019). Exploring the construct of psychological safety in medical education. Academic Medicine, 94(11S), S28-S35.

Waites, B., Breslin, G., Bell, N., Thomson, L., Fraser, J., Mackay, G., Tehrani, N., Kinman, G., Grant, C., Kwiatowski, R., Chater, A., & Baraniak, A. (2020). Covid-related anxiety and distress in the workplace: A guide for employers and employees: Covid and anxiety in the workplace. British Psychological Society.

Wanless, S. B. (2016). The role of psychological safety in human development. Research in Human Development, 13, 6-14. https://psycnet.apa.org/doi/10.1080/15427609.2016.1141283

Whitelaw, P. A., Benckendorff, P., Gross, M. J., Mair, J., & Jose, P. (2015). Tourism, hospitality & events learning and

teaching academic standards. Sydney, NSW, Australia: *Office for Learning and Teaching, Department of Education and Training*.

Zainuddin, Z., & Halili, S. H. (2016). Flipped classroom research and trends from different fields of study. *International Review of Research in Open and Distributed Learning, 17*(3), 313–340. https://doi.org/10.19173/irrodl.v17i3.2274

Zalesny, M. D. & Ford, J. K. (1990) Extending the social information processing perspective: New links to attitudes, behaviors, and perceptions. *Organizational Behavior and Human Decision Processes, 47*, 205–246. https://psycnet.apa.org/doi/10.1016/0749-5978(90)90037-A

Zhang, Y., Fang, Y., Wei, K-K., & Chen, H. (2010). Exploring the role of psychological safety in promoting the intention to continue sharing knowledge in virtual communities. International *Journal of Information Management, 30*(5), 425-436. https://doi.org/10.1016/j.ijinfomgt.2010.02.003