QRBD

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FROM THE EDITORS

The August issue of *Quarterly Review of Business Disciplines* begins with two articles discussing the impact of the COVID-19 pandemic. The first article is authored by Choi, Zeff and Higby, and it examines the impact of digital group communication on student satisfaction. Using an instrument they developed to measure the group process, the authors found that satisfaction scores were lower for students in online courses, the very courses that many instructors were asked to pivot to with little preparation. The second article presents the results of research on the impact of the COVID-19 pandemic on the U.S. hotel market, particularly the luxury hotel chains. While the pandemic had negative impacts on the lodging sector in general, the authors, Ghannadian and Larsson Vahlberg, note that the luxury hotel chains were more negatively impacted than their economy chain counterparts.

In the third article, Lin and Armstrong offer guidance to organizations that host virtual community platforms. Their research indicates that an individual's perceptions of the other community members may influence that person's information privacy risk in the shared virtual community. Their research offers guidance on how to reduce an individual's privacy risk belief by adjusting the virtual community platform.

Finally, Lewis and McKinzie study an important topic regarding accreditation standards for college business programs. Their research looks at how business faculty work experience impacts student evaluations of teaching (SET). Four faculty variables were compared to SETs. While the results sometimes supported previous research and current practice, other results did not. Most notably, experience in the industry was generally found to not improve an instructor's SETs, raising concern about current accrediting standard requirements.

We invite you to take some time to review this important research, as it offers a new perspective on previously studied topics, as well as an assessment of the COVID-19 pandemic on the lodging sector and student learning in the business classroom.

Charles A. Lubbers, *University of South Dakota,* Issue Editor

Margaret A. Goralski, *Quinnipiac University,* Editor-in Chief

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UNDERSTANDING GROUP PROCESSES: CHALLENGES OF DISTANCE LEARNING IN THE COVID-19 ERA

Wonseok Choi, University of Detroit Mercy

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ABSTRACT

Two competing issues introduce additional tension for faculty teaching courses with group projects during this Covid-19 pandemic: digital or hybrid formats; however, students prefer and perform at higher levels in face-to-face (FTF) situations while intra-group trust, which leads to higher student performance, is higher in FTF than online classes. We examine the impact of digital group communication on student satisfaction. One area of concern to students is the issue of perceived injustice. This issue was underscored in student feedback on course evaluations. We developed a questionnaire to measure the intervening role of group processes in the classroom: goal sharedness, accountability, freeloading and intragroup trust. We find that satisfaction with team performance is lower in online courses. In addition, each group process studied significantly affects the relationship between type of group communication and student satisfaction, while the role of intragroup trust has the greatest impact. We also note that students perceive a significantly higher level of freeloading in digital classroom situations. Faculty can improve student satisfaction and performance by advising and training students in each of these four group processes early in each course, especially in digitally delivered classes.

Keywords: Type of Group Communication, Intragroup Processes, Student Satisfaction

INTRODUCTION

Covid-19 has a dramatic impact on many of our teaching methods and processes. For example, many university courses have been and continue to be taught mainly online or in some blended fashion. We have experienced the role that technology had to play (and probably will continue to play) in higher education. Team communication is consistently identified as a critical component of team performance (Salas, Reyes, & McDaniel, 2018). Marlow, Lacerenza, Paoletti, Burke, and Salas (2018), for example, highlight the influence of types of communication used to accomplish tasks. However, despite clear agreement on the importance of team communication, the degree to which communication is required for achieving high levels of performance under different conditions is relatively unexplored (Marlow et al., 2018). And group projects, which were being used more frequently in course assignments before the onset of this pandemic (Lee, Smith, & Sergueeva, 2016), have become a major method of providing students with opportunities to interact with classmates and learn approaches to work with different people and expand their perspectives.

The levels of team performance and members' satisfaction are affected by group processes. For instance, teams with a shared goal are more likely to feel committed to this goal and to improve their innovative performance because their efforts have focus and direction (Hülsheger, Anderson, & Salgado, 2009). Accountability has also been considered a fundamental of organizations as, without it, individuals would be able to do whatever they wanted, whenever they wanted without fear of punishment, resulting in the chaotic breakdown of organizations (Hall, Zinko, Perryman, & Ferris, 2009). Accountability improves task performance (Mero, Guidice, & Werner, 2014) and promotes coordinating behaviors (Unger-Aviram & Erez, 2016).

However, group processes are not always either effective or constructive. While distance learning has been forced by COVID-19, college students are encountering more freeloading issues among their team members (Pellot, 2021). Decreased social presence in distance learning affects student participation and willingness to contribute constructively (Molinillo, Aguilar-Illescas, Anaya-Sánchez, & Vallespín-Arán, 2018). Additional performance challenges include restricted conflict dissolution, possible increased freeloading, and restrained team synergy (Welte, 2021). Intragroup trust is critical in determining levels of performance (Choi, Zeff, & Higby, 2018). After the spring and fall semesters of 2020, our students indicated that freeloading and accountability (justice issues) were of high concern to them (personal communication, December 21, 2020). As we developed a questionnaire to measure these sentiments, we found that goal sharedness might be a partial surrogate for intragroup trust. These, then, became the four areas of focus for the present study, investigating their role in moderating the relationship between type of group communication (FTF and technology-based) and student satisfaction: goal sharedness, accountability, freeloading, intragroup trust.

The importance of student satisfaction was highlighted by our conversations with faculty when discussing new syllabi for online course presentations. We learned how most faculty emphasize the need and desirability of including student satisfaction in their goals for successful classes. In addition, there seem to be at least two types of satisfaction of concern for students, corresponding to critical outcomes desired by faculty: 1) satisfaction with class and project performance levels (the bottom line for almost any course); and, 2) satisfaction with team member interaction, often described as being critical in team performance. Studies (see, e.g., Marlow, Lacerenza, & Salas, 2017) identify the role of communication in influencing performance and satisfaction and the role of group processes as modifying this relationship. Our research model includes these relationships. See Figure 1 below.

Figure 1. Research Model

Our specific research question is: What is the impact of the type of group project communication on student satisfaction as modified by these four group processes?

LITERATURE REVIEW

Group Project Communication and Satisfaction

The literature on team/group communication identifies two basic categories, namely, face-to-face (FTF) communication and technology-based (online) communication. Previous research results indicate that FTF communication leads to both higher group performance and higher satisfaction (see Choi et al., 2018; Choi, Zeff, & Higby, 2019). These results are consistent with Downey, Obermire, and Zehms, (2020) and Lahiri (2010), while Denstadli, Julsrud, and Hjorthol (2012) found a more positive relationship between technology-based communication and performance in certain situations. Marlow et al. (2017) provide a comprehensive review of communication in virtual teams to establish a framework for future research. They note the complexity of the relationship between communication and performance in virtual teams, as moderated by intervening variables, and perhaps the best way to improve on this relationship is to initially use some FTF interaction (e.g., to increase the level of early trust). For example, swift trust, a form of trust occurring in temporary organizational structures of quick starting groups, exists in virtual teams (Jarvenpaa, Knoll, & Leidner, 1998). However, studies found that swift trust was fragile and often wildly inaccurate (Crisp & Jarvenpaa, 2013).

FTF interactions provide more complete communication (Short, Williams, & Christie, 1976), whereas digital communication limits direct personal observations that allow members to perform effective cognitive trust assessment (Robert, Denis, & Hung, 2009). Lack of awareness of who is responsible for specific outcomes (Cui, Lockee, & Meng, 2013) further reduce overall performance, while increasing frustration and dissatisfaction, and lowering participation. FTF communication not only increases performance levels of teams and team members, but it also enhances satisfaction with group outcomes and other group members (Choi et al., 2018; Zhang, 2016). The lack of appropriate social interaction puts challenges on collaborative learning in virtual environments (Akar, Öztürk, Tunçer, & Wiethoff, 2004).

Two theories, media richness and social presence, help explain differences between face-to-face and online communication. Media richness theory (Daft & Lengel, 1986) explains how face-to-face interaction enables not only the spoken language and other verbal cues, but also body language providing a better basis for understanding each other compared to purely technology-based interaction (Lantz, 2001). Both high and low media richness levels are effective when matched with appropriate tasks. For example, media with lower richness are effective when used with more routine tasks and richer media are better matched with nonroutine, complex and ambiguous tasks (Denstadli et al., 2012). Group projects for classroom assignments are examples of non-routine and complex tasks.

Social presence theory (Short et al., 1976) explains how FTF interactions provide more complete communication. Both verbal and non-verbal cues are part of the social exchange process. Digital communication can limit direct personal observations that allow members to perform effective cognitive trust assessment (Robert et al., 2009). Awareness of who is responsible for specific

outcomes (Cui et al., 2013) and issues of accountability (Reio & Crim, 2006) further reduce overall performance, while increasing frustration and dissatisfaction, and lowering participation. For instance, team members that exclusively rely on technology-based interaction will have no opportunity to see firsthand the amount of effort others are expending or participate in informal interactions with team members. When social context cues are missing, increased depersonalization, lower cohesiveness, and less social conformity often result (Lu, Fan, & Zhou, 2016).

According to the input-process-output (IPO) model (McGrath, 1964), outputs are results and by-products of team activity that are valued by one or more constituencies (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). Broadly speaking, these may include performance (e.g., quality and quantity) and members' affective reactions (e.g., satisfaction, commitment and viability). While using group projects in the college classroom creates numerous instructional learning and social communication advantages for both students and teachers, emotion is an important element of these advantages (Barfield, 2003). Thus, it is important to examine and understand students' satisfaction with both the group grade (output) and group members (see Figure 1, above).

Higher education institutions are focusing on understanding the factors that influence student satisfaction as well as attempting to improve it (Yusoff, McLeay, & Woodruffe-Burton, 2015). Moreover, team satisfaction is a motivational component of team effectiveness and an important consideration when identifying successful team functioning (Hackman, 1987). When a new learning environment is applied, student satisfaction should be considered in evaluating the effectiveness of learning (Zhu, 2012). For instance, learners' satisfaction can have repercussions on how learners work together, and whether there is a good working atmosphere among learners (Gunawardena et al., 2001). On the other hand, satisfaction ratings with performance decrease as the level of virtuality increases due to low social presence and low richness of information in technology-based communication (Baltes, Dickson, Sherman, Bauer, & LaGanke, 2002).

Group Processes

Group processes have played a central role in most group effectiveness models (Guzzo & Shea, 1992). Processes are important because they describe how group inputs are transformed into outputs. Our model includes the major intervening variables important in the literature review, and these are discussed below.

Goal sharedness. Goal sharedness is the extent to which group members have shared perceptions of the group's goal (Haas, Sypher, & Sypher, 1992) and exists when team members agree with the objectives and find that they are clear and worthwhile (Mascareño, Rietzschel, & Wisse, 2020). Communication is one way to improve goal clarity; goals are likely to become aligned if they are communicated to team members (Beehr, Glazer, Fischer, Linton, & Hansen, 2009). Communication is a precondition for alignment, because without knowing the overall goals, team members cannot set their own (aligned) goals, and without feedback about their goal progress, they have no reason to make corrections or adjustments in their work (Baum, Locke, & Kirkpatrick, 1998).

Goals play an important role in regulating individuals' everyday behavior (Higgins, 1997) and commitment is a key contributor to the effectiveness of the group (e.g., Aubé & Rousseau, 2005). This enhances group identification and coordinates efforts to achieve collective goals (Zhang & Chiu, 2012). Empirical findings note goal alignment is an important predictor of team performance (Hülsheger et al., 2009; Stam, Lord, Van Knippenberg, & Wisse, 2014).

Accountability. Accountability has been described as "the adhesive that binds social systems together" (Frink & Klimoski, 1998, p. 3). That is, if individuals were not answerable for their behavior, there would be neither shared expectations nor a basis for social order. Thus, without accountability, it would be impossible to maintain any form of social system (Frink & Klimoski, 1998).

Attitudes of individuals (e.g., felt accountability) can be affected by the attitudes, behaviors, and communications of others through a social information processing framework (Salancik & Pfeffer, 1978). The concept of social contagion suggests that thoughts and feelings about an issue "can be communicated from one individual to another and ultimately spread and be maintained across entire networks or groups" (Degoey, 2000, p. 54). Once these attitudes have been dispersed, they can have important effects on individual attitudes, and ultimately individual behavior. This is related to the earlier social information processing perspective (Salancik & Pffefer, 1978).

Accountability has valuable outcomes, such as performance, precision, and focus. Individuals who are held accountable for their performance are more likely to be high performers, develop greater accuracy, and be more attentive to the needs of others than individuals who are not held accountable (Thoms, Dose, & Scott, 2002).

Freeloading. Advances in information technology have created new challenges for team processes. One area of concern to students is the issue of perceived injustice and this issue was underscored in student feedback on course evaluations for the Fall 2020 semester.

> . . . other members of my group received A[']s, who did not contribute the whole semester and I had to pick up the slack on their end which is very frustrating because they received good grades on all the group work, they did not help on yet received a better grade in the class overall somehow (personal communication, December 21, 2020).

Freeloading by certain group members has been highlighted as one of the challenges with group work (Bramley, 2020). Due to heavy reliance on modern communication channels in which virtual team members do not physically have to "face" each other, freeloading, as well as low commitment, are common phenomena in virtual teams (Furst, Reeves, Rosen, & Blackburn, 2004). Group size and dispersion are antecedents of freeloading in technology-supported teams (Blaskovich, 2008). A positive relationship between virtual collaboration and freeloading exists empirically (Peñarroja, Orengo, & Zornoza, 2017).

Pitfalls and obstacles occur in online collaboration, including social loafing in virtual groups (Weinel, Bannert, Zumbach, Hoppe, & Malzahn, 2011). The level of social presence influences the perception of collaboration within the team. Lower levels of social presence can diminish

communication quality and as a result influence the perception of collaboration (Roberts, Lowry, & Sweeney, 2006). Group members in virtual teams are physically not able to witness the effort that other members put into their work. Virtual team members are forced to rely on communication channels that are less rich than face-to-face conversations (Zhang, 2016). As these channels lack richness, conflict is intensified through a misunderstanding caused by the communication methods used by virtual teams (Furst et al., 2004).

If freeloaders are not held accountable for their individual contributions, frustration and negative feelings toward that individual and toward group projects, in general, are created. Group members also feel that they have no control over the situation (Hall & Buzwell, 2013). A strong and statistically significant inverse relationship between freeloading and students' satisfaction and performance exists (Aggarwal & O'Brien, 2008).

Intragroup trust. Building trust within a team is recognized as a key ingredient for team success (e.g., De Jong & Elfring, 2010). Breuer, Hüffmeier, and Hertel (2016) suggest that trust facilitates specific risk-taking behaviors such as reducing defensive control, open discussion of conflicts and mistakes, mutual feedback, and sharing of confidential information, which in turn lead to more efficient coordination of team members' resources (time, effort, knowledge, etc.) and as a result, higher team success.

Working in a virtual team is more difficult because technology-based communication takes more cognitive effort to transfer knowledge than face-to-face communication, hence the difficulty level for virtual teams rises (Kock, 2004). Compared with face-to-face collaboration, virtual collaboration reduces "social context cues." With lower level of social control, participants exhibit a lower incidence of behaviors associated with individual trust (Cheng, Fu, Sun, Han, Shen, & Zarifis, 2016). Geographical closeness, background similarities, and interactions in person are often not present in virtual teams even though developing a collective trust is a crucial part of any team. Furst and colleagues (2004) suggest that trust develops more slowly in virtual situations than it does in natural work settings. They also indicate that restricted conflict dissolution, increased freeriding, restrained team synergy and lower performance create additional challenges that virtual teams have to overcome. A sense of trust or being part of a team will lead to more constructive processes such as not interpreting critique as a personal attack (Kreijns, Kirschner, & Jochems, 2003) and accumulated evidence has consistently confirmed a positive relationship between team trust and performance (Guinot & Chiva, 2019).

Once again, our research question derived from our research model and developed from the literature review is: what is the impact of the type of group project communication on student satisfaction as modified by these four group processes?

METHOD

Data Collection Procedure

All respondents have had direct and intensive experience with both FTF classes with group projects, and technology-based course work with team members. Students were asked to complete two separate surveys from the SurveyMonkey platform. The two surveys were separated by a one-week gap so respondents could consider their experiences with each delivery system independently

and separately. Students were initially randomly presented with either of the two surveys and then presented with the other survey a week later. Charness, Gneezy, and Kuhn (2012) indicate that data collected following this within-subject methodology, including a time-gap, provides stronger and more reliable results than between-subject approaches.

Sample

We invited 204 undergraduate and graduate students at an urban Midwestern United States university to participate in these surveys. The authors contacted several instructors to get permission to invite their students. Four instructors agreed and their students from 8 different business courses were invited. Of the participants, 71.4% completed 3 or more years of college and every respondent had no fewer than 25% of their courses in each of online and face-to-face delivery. Our response rate is 58.3% with 119 respondents completing the questionnaires corresponding to each of the two independent conditions. Of these respondents, 88.2% are between the ages of 18 and 26, while 44.2% are females.

Questionnaire Development

This study was motivated by initial responses from student end of course surveys and resultant discussions with college faculty regarding freeloading and the importance of student satisfaction for both course outcomes and class development. When these discussions were put into a framework of past research experience with team development, a new student survey was created. The questions are clustered around each of the six variables of concern for this study: four intervening variables (sharedness, accountability, freeloading and trust) and two dimensions of the dependent variable (satisfaction with the team performance and satisfaction with team members). All variables were directly measured by more than one question and the descriptive statistics are included in the results section below (see Table 1).

Data Analysis Approach

We apply ANOVA analyses to see if the students' responses to group processes are different between FTF and technology-based communication (i.e., one-way Repeated Measure ANOVA). A five-point Likert scale was used to provide a cardinal rather than an ordinal scale for data analysis and provide the basis for comparisons and results, including the following categories: (1) Strongly disagree; (2) Disagree; (3) Neither agree nor disagree; (4) Agree; (5) Strongly agree. Since four approaches of one-way Repeated Measure ANOVA (Pillai's Trace, Wilks' Lambda, Hotelling's Trace and Roy's Largest Root) reflect the same degree of significance, we report only the Wilks' Lambda in our results section below, since this is the most widely accepted measure (Todorov & Filzmoser, 2010). To capture the relative impact of each of the four intragroup processes on the dependent variables (Satisfaction with team members and Satisfaction with team performance) we also completed regression analyses, both individually and in combination, and present the results of these five different models in the results section below (see Tables 7 and 8).

Measures

Graphs comparing each of the four intervening variables and both dependent variables in each of two conditions (the two states of the independent variable) are included to show the consistency of results even when statistical significance is not present. See Figures 2-7, below. Cronbach's alphas of the variables were used to develop reliability and are all above .84 (see Table 1). This level suggests that it is well above the widely accepted level of .7 (see, e.g., Tavakol & Dennick, 2011). Multiple items are used to measure each concept and the average score of each concept is used for analysis. The scale items were developed by the authors drawing from similar items reported in the literature (Goal Sharedness – Zhang & Chiu, 2012; Freeloading – Bacon, Stewart, & Silver, 1999; Mulvey & Klein, 1998; Accountability – Bacon et al., 1999; Intragroup Trust – Costa & Anderson, 2011; Satisfaction with Team Performance – Lancellotti & Boyd, 2008; Satisfaction with Team Members – Zeitun, Abdulqader, & Alshare, 2013). These items are presented in the results section.

RESULTS

Descriptive statistics and the significance level of each of the four intervening variables and the two dependent variables are presented in Table 1, below. Satisfaction with Team Members (Figure 7, below) is the only one of the six variables that does not have a significant effect, while all six variables have the slope consistent with what we expected, based on the literature review and initial discussions with students and faculty.

Table 1. Descriptive Statistics and Multivariate Tests (Wilks' Lambda)

	Face-to-Face		Online			Wilks'		
	Mean	SD	Mean	SD	N	Lambda	*F*	*p*
Goal Sharedness	3.95	0.67	3.77	0.75	119	0.94	7.38	.008**
Freeloading	2.46	0.72	2.64	0.84	119	0.94	7.17	< .001***
Accountability	3.99	0.67	3.79	0.86	118	0.93	8.59	.004**
Intragroup Trust	3.88	0.70	3.70	0.83	118	0.95	5.84	.017*
Satisfaction w. Team Performance	4.19	0.60	4.07	0.63	118	0.96	4.78	.031*
Satisfaction w. Team Members	3.60	0.83	3.50	0.94	118	0.99	1.29	.258

* $p < .05$, ** $p < .01$, *** $p < .001$

Intervening Variables (Group Processes)

Goal sharedness. The type of group communication (FTF vs. Online) has a significant effect on goal sharedness. Table 1 above indicates a Wilks' Lambda = 0.94, F (1,118) = 7.38, p = .008. The basic result, as reflected in Figure 2 below, suggests respondents indicate a significantly higher level of goal sharedness when in FTF group situations than when working on class projects in a virtual team setting. This intragroup process was measured by asking the five questions found in Table 2 below. We included two subdivisions, "Awareness" and "Commitment," to correspond to "Media Richness Theory" and "Social Presence Theory" as found in the literature review.

Figure 2. Goal Sharedness

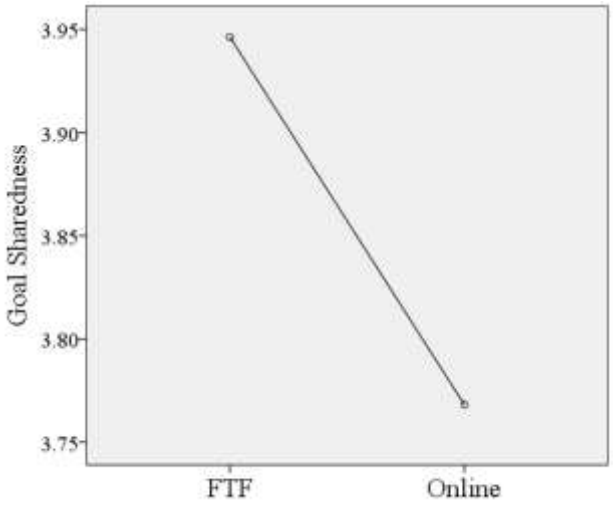


Table 2. Goal Sharedness

Question			FTF		Online		*p*
			M	*SD*	*M*	*SD*	
Goal Sharedness	Awareness	Team members had a clear understanding of role and responsibility for each member.	4.03	0.80	3.88	0.95	.122
		Team members identified clear goals and objectives.	4.01	0.75	3.86	0.84	.069
	Commitment	Our team members worked well together.	4.06	0.65	3.87	0.83	.019*
		Our team members were very cooperative.	4.03	0.75	3.91	0.79	.120
		Team members were willing to put forth a great deal of effort beyond what they'd normally do to achieve goals.	3.60	1.04	3.33	1.15	.009**

Two areas of concern with which technology-based communications have dealt when compared with FTF interactions include a reduced level of media richness and lowered social presence. Our results indicate that online group interaction may have overcome difficulties with lower media richness since there are no statistical differences between FTF and online "Awareness." We find, however, that the concept of social presence may not yet be fully integrated into technology-based communications as there are significant differences found in two questions: "Our team members worked well together" and "Team members were willing to put forth a great deal of effort beyond what they'd normally do to achieve goals." One suggestion, building on the recommendations of the Sabre Project (Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002) is to try to replicate a FTF meeting early in the semester by requiring, perhaps, a visual conference with synchronous presentation to gain an opportunity to see and "be with" other team members. This may be one way to increase social presence to gain the performance impact found in FTF meetings.

Freeloading. As Table 1 above indicates, the type of group communication has the greatest significance on freeloading than any of the group processes studied. We found a Wilks' Lambda = 0.94, F (1,118) = 7.17, $p < .001$. Respondents perceive a significantly higher level of freeloading in online group situations than in FTF group project communications (Figure 3 below). The slope seen in this graph is opposite to the slope found in Figure 2 (Goal Sharedness), as the literature review suggested. This group process variable was measured by asking the six questions found in Table 3 below as interpreted by our literature review.

Figure 3. Freeloading

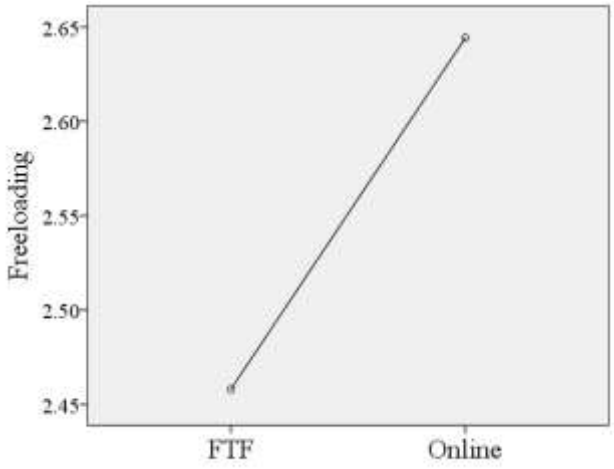


Table 3. Freeloading

Question		FTF		Online		*p*
		M	*SD*	*M*	*SD*	
Freeloading	Team members tried as hard as they could. (r)	4.06	0.69	3.84	0.93	.022*
	Given their abilities, team members did the best they could. (r)	3.33	1.11	3.18	1.19	.173
	No one slacked off, getting others to do most of the work. (r)	3.65	0.92	3.40	1.04	.009**
	Members of my team were "free-loaders."	2.87	1.19	2.92	1.15	.649
	Team members contributed less than I anticipated.	2.82	1.07	2.92	1.11	.339
	Team members completed their work on time. (r)	3.90	0.82	3.55	1.04	< .001***

Three of the questions are viewed significantly differently between FTF and online communication interactions (#1, #3 and #6). While respondents do not identify team members as "free-loaders" (see item #4), they perceive significant differences when in online communication than in FTF interactions. Of particular note is the last item. There is the most significant difference between FTF and online communication in the perceptions of team members completing their work on time. Informal discussions with students make this an interesting item. They are unwilling to use the word "freeloading" when describing their views of team members (see item #4) although they are willing to clearly state the results of freeloading identified in item #6. While the term itself may be too toxic, the outcome is clearly perceived as undesirable.

Accountability. The type of group communication used by a group has a significant effect on accountability, as seen in Table 1 above, with a Wilks' Lambda = 0.93, F (1, 117) = 8.59, p = .004. This is also seen in Figure 4 below, and suggests participants perceive a higher level of accountability in team members when they meet in FTF sessions than they do when working together in online situations. We measured accountability with the three questions found in Table 4 below. Perceptions of accountability are much stronger in FTF meetings than in virtual group situations. As students suggested, in focus group interactions and informal discussions, accountability is much higher when they can actually see and personally interact with their partners on class projects.

Figure 4. Accountability

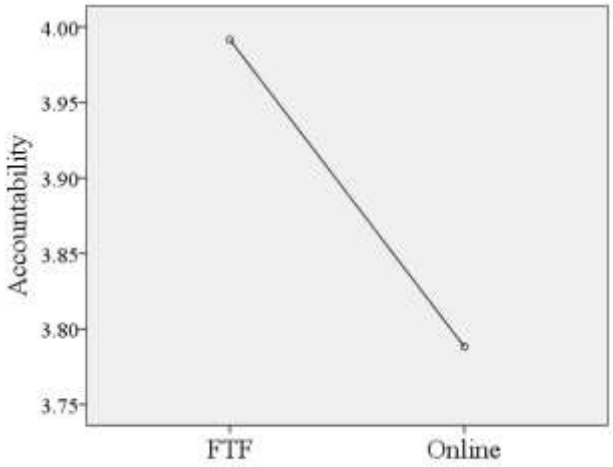


Table 4. Accountability

Question		FTF		Online		*p*
		M	*SD*	*M*	*SD*	
Accountability	All team members felt accountability for group success.	4.07	0.68	3.81	0.97	.005**
	Team members felt accountable for producing a certain quality of work.	3.93	0.84	3.77	0.94	.048*
	Team members felt accountable for producing a certain amount of work.	3.97	0.78	3.79	0.97	.026*

Intragroup trust. Intragroup trust is the fourth of the intragroup processes we investigated in this survey. Like the other three processes, this is impacted significantly by the type of group communication used. (See Table 1 above with a Wilks' Lambda = 0.95, F (1, 117) = 5.84, p = .017.) This impact is also seen in Figure 5 below. Our survey instrument contains the four questions in Table 5 below relating to intragroup trust. Only the first question finds a significant difference between FTF groups and teams meeting virtually, although questions two and three are marginally significant at $p < .10$. It is possible that a larger sample size might show more significant results than we found in this study.

Figure 5. Intragroup Trust

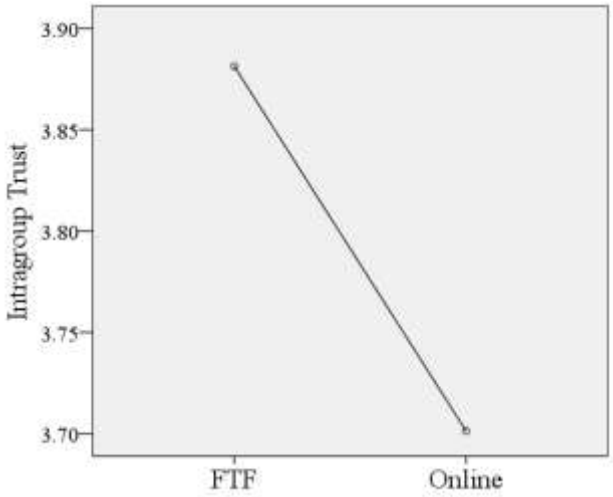


Table 5. Intragroup Trust

Question		FTF		Online		*p*
		M	*SD*	*M*	*SD*	
Intragroup Trust	Team members looked for each other's interests honestly.	3.92	0.82	3.71	1.01	.018*
	We had complete confidence in each other's ability to perform tasks.	3.74	0.95	3.53	1.08	.063†
	Team members could rely on each other.	4.00	0.76	3.84	0.90	.053†
	Team members kept their word.	3.86	0.88	3.73	0.90	.138

Dependent Variables (Two Types of Satisfaction)

Our research design has four intervening variables (the four group processes included in this study) and two types of dependent variables, namely, satisfaction with team performance and satisfaction with team members (see Figure 1). We have presented our findings on the impact each type of group communication has on these four intragroup processes. We now present the results of our intervening variables on the two types of satisfaction.

As seen in the regression analyses presented in Tables 6 and 7 below, goal sharedness has a highly significant impact on both satisfaction with team performance and satisfaction with team members using each of the two types of communication (see the column labelled "Model 1" in each Table). These results, particularly the R^2 row, also suggest that goal sharedness (as is true for each of the four group processes) has a greater impact on satisfaction with team members than on satisfaction with team performance. In addition, the column of Model 5 indicates that of these four group processes, goal sharedness is the second most impactful variable on each of the two dependent variables, trailing only intragroup trust in importance.

Table 6. Satisfaction with Team Performance – FTF and Online

	Face-to-face					Online				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Goal Sharedness	.478***				.168	.377***				.198
Freeloading		-.410***			-.084		-.260***			.146
Accountability			.477***		.140			.327***		.118
Intragroup Trust				.450***	.188†				.352***	.247*
R^2	.280	.247	.289	.313	.364	.214	.139	.211	.228	.270

† $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Satisfaction with Team Members – FTF and Online

	Face-to-face					Online				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
Goal Sharedness	.847***				.263*	.869***				.258*
Freeloading		-.688***			.006		-.741***			-.039
Accountability			.844***		.112			.713***		.053
Intragroup Trust				.886***	.645***				.885***	.641***
R^2	.486	.394	.498	.653	.683	.517	.492	.461	.650	.677

† $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$

The impact of freeloading on satisfaction with both team performance and team members is also significant, although negative, as seen in the Model 2 column of Tables 6 and 7. As Model 5

suggests in both Tables, however, freeloading as an intervening variable has a relatively low impact on the dependent variables.

The third intragroup process studied is accountability, which is shown to have a significant impact on both satisfaction with team performance and team members, though it is not as significant as either goal sharedness or intragroup trust (see "Model 3" column for significance and "Model 5" for relative impact). In addition, accountability has less influence on both types of satisfaction than the intragroup processes of goal sharedness and intragroup trust.

Intragroup trust, of all four group processes studied, has the highest level of impact on both satisfaction with team performance and satisfaction with team members. Model 4 indicates that intragroup trust has a highly significant impact at the .001 level, while Model 5 suggests it has the highest level of impact of all four group processes for both types of satisfaction studied. This supports previous research that first alerted us to the importance of intragroup trust. While we don't understand all group processes that influence satisfaction with performance or members, we have found in several situations that trust is a critical process to be considered in the study and development of group success.

We now look at the impact that the type of group communication has on the two types of satisfaction. Table 1 indicates the significant impact that type of group communication has on satisfaction with team performance (Wilks' Lambda = 0.96, F (1, 117) = 4.78, p = .031). Table 8 presents the three questions in our survey that directly deal with satisfaction with team performance. We note that the second question of this table suggests students in FTF teams perceive their satisfaction with team performance to be higher than they do in virtual situations, although respondents in both communication conditions statistically have the same perceptions of their satisfaction with the grade and the quality of the finished project. Figure 6 below reflects this significant influence on team performance.

Figure 6. Satisfaction with Team Performance

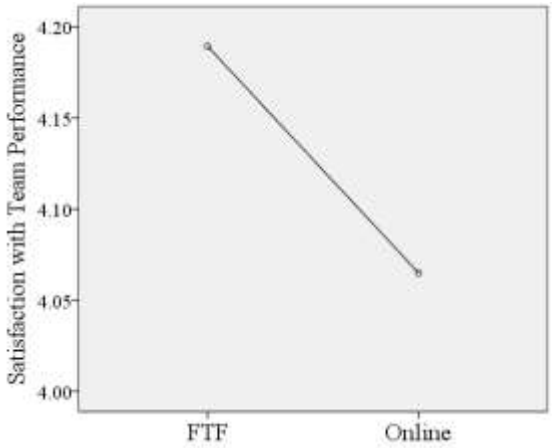


Table 8. Satisfaction with Team Performance

Question		FTF		Online		*p*
		M	*SD*	*M*	*SD*	
Satisfaction with Team Performance	I am satisfied with the quality of the finished project.	4.08	0.75	3.96	0.82	.132
	We produced a good paper and/or presentation.	4.24	0.62	4.07	0.72	.012*
	We received a good grade on this project.	4.25	0.65	4.17	0.62	.181

Table 9 below presents the four questions in our survey relating communication to satisfaction with team members. None of these questions were found to be significant, and this is reflected in the flatter slope seen in Figure 7. This is the only relationship in our study not found to be significant.

Figure 7. Satisfaction with Team Members

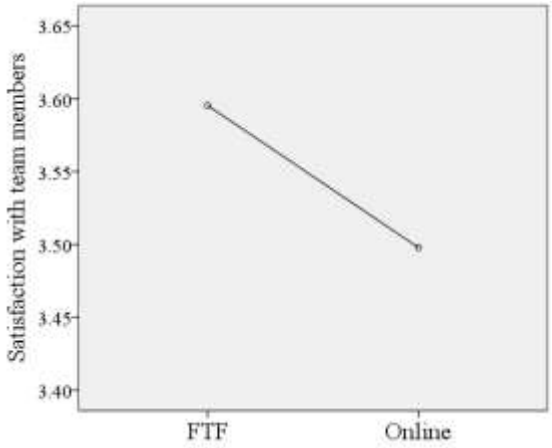


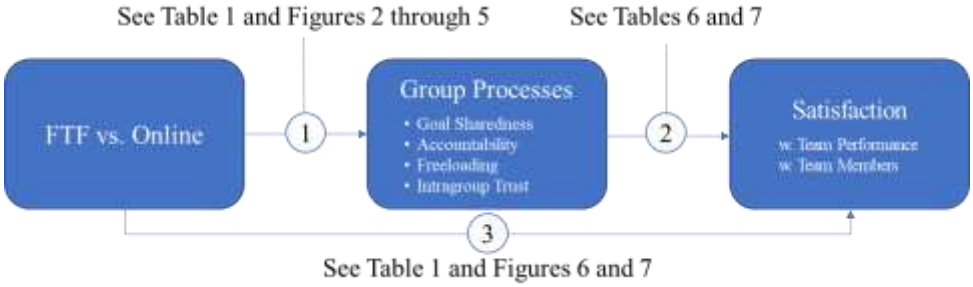
Table 9. Satisfaction with Team Members

Question		FTF		Online		*p*
		M	*SD*	*M*	*SD*	
Satisfaction with Team Members	I enjoyed working with my team members.	3.92	0.82	3.73	1.00	.061†
	Our team members had low stress.	3.47	0.94	3.44	1.03	.794
	I would like to work with the same team in the future.	3.63	1.09	3.47	1.19	.186
	I consider this team among the best.	3.36	1.11	3.34	1.16	.816

SUMMARY AND CONCLUSION

We present Figure 8 below to help us summarize the results of this study and relate them all back to our research model presented above (See Figure 1). We present two examples to apply study results: freeloading on satisfaction with team members; intragroup trust (our major finding) on satisfaction with team members.

Figure 8. Application of Results to Research Model



Freeloading was brought to our attention by student comments and became the motivator for undertaking this study. An interesting observation with this data suggests that the differences between the two types of communication are most significant with freeloading of any of the group processes studied (link ①). At the same time, freeloading has a relatively minimal impact on each type of satisfaction (link ②).

Looking at Tables 6 and 7, R^2 values reflect a relatively high level of explanation of variances found in the satisfaction levels in this study. In particular, the impact of intragroup trust is very high, higher than any of the group processes studied. Looking at Model 5 of these two Tables, the relative role of intragroup trust is the highest of these four variables. Our research suggests that this is a crucial variable to consider when identifying factors that improve student satisfaction.

Overall results indicate the type of group communication has a significantly different impact on each of the four group processes. Moreover, each of the four group processes studied has a significant effect on both satisfaction with team performance and team members. While the type of group communication significantly affects satisfaction with team performance, it is not significantly related to satisfaction with team members. Our data suggests this is the only relationship between variables that does not reach the level of statistical significance, as seen in link ③. While the slope in Figure 7 is what we anticipated, we expected it to be significant. Perhaps a larger sample size would bring out this relationship more clearly. Perhaps we do not have clear questions that would better reflect this relationship for respondents. For example, the second question about the stress level of team members requires participants to make judgements about which they are not likely to be qualified.

These results suggest that student satisfaction with team performance and team members are heavily influenced and affected by the four group processes included in this study. Business school faculty might want to consider including information of the role of these and other group processes, and how to "train" students in group behavior to increase student satisfaction with their group projects, teammates and courses. For example, Kirkman and colleagues (2002) indicate how performance at Sabre, Inc., was dramatically improved when they established trust based on performance consistency rather than the typical tie to social bonds. This is a major way to overcome basic concerns regarding virtual team challenges and getting performance closer to levels gained in FTF group interactions. Future research needs to explore additional group processes and their impact on satisfaction.

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THE IMPACT OF THE COVID-19 PANDEMIC ON THE U.S. LUXURY HOTEL MARKET

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ABSTRACT

This article attempts to distinguish the difference in luxury hotel-chains' stocks with the economy hotel-chains' stocks in the weeks after the SARS COVID-19 pandemic announcement on March 11, 2020. The five largest U.S., publicly traded hotel-chains: Choice, Hilton, Hyatt, Marriott, and Wyndham Hotels were examined. With an event-study, expected returns were calculated for the five firms and compared to the return of the S&P 500.The three luxury firms, Hilton, Hyatt, and Marriott, Average Cumulative Abnormal Returns (ACAR's) were tested against two economy hotel-chains, Choice and Wyndham, in a Wilcoxon rank-sum test. The study showed that the luxury hotel-chains proved to have negative ACAR's ten and 15-weeks after the announcement of the COVID-19 pandemic, indicating that the luxury hotel-chains were negatively impacted by the COVID-19 pandemic announcement. On the other hand, the economy hotel-chains did not see a significant ACAR after the announcement. The Wilcoxon-test concluded a difference between luxury hotel-chains' ACAR's and economy hotel-chains' ACAR's in the beginning stages of the pandemic. Thus, investments made in economy hotel-chains would have provided the investor with little to no losses when comparing it to luxury-focused hotels.

Keywords: U.S-Lodging Industry, Event-Study, COVID-19, Hotel Stock-prices

INTRODUCTION

The magnitude of the COVID-19 SARS-virus became a reality for many world-leaders on March 11, 2020, when the World Health Organization (WHO) declared the COVID-19 virus as a global pandemic (World health Organization, 2020). On that same day, the U.S. closed its borders to Europe. Soon thereafter, the U.S. border was more or less closed to every non-US citizen (Mangan, 2020). At this time, President Trump declared on March 16 a national emergency, which was followed by quarantine measures (called stay-at-home order) and recommendations of working from home, no unnecessary travel, and avoidance of any type of social gatherings (Aljazeera, 2020). A month later, the Center for Disease Control (CDC) posted a two-week plan for the U.S. states to slowly open up (Centers for Disease Control and Prevention, 2020). The average U.S. states started to open up their economies in mid-May, where lodging and restaurants were given different opening measures across the country (Cable News Network, 2020). The two months of stay-at-home orders took a toll on the U.S. economy due to decreased spending and increased uncertainty.

During the second quarter of 2020, the U.S. experienced an annual decline of 32.9% in GDP (Horsley, 2020). Additionally, due to the stay-at-home orders that were in place in most states across the U.S., the unemployment ratio for the second quarter of 2020 was 13.6% compared to 3.6% in the previous quarter (Szmigiera, 2021). Thus, the U.S. government aided citizens with relief-money and other economic stimulus in order to get the economy back running after the

devastating months of March and April (Horsley, 2020). Nevertheless, only 8% of low income and 9% of middle income used the money for non-essential purchases. The rest of the population used it to pay bills (66%, 49%), pay off debt (14%, 18%), and to save (12%, 24%) (Brown, Horowitz, & Minkin, 2021).

Many U.S. citizens were feeling an economic burden and uncertainty due to the COVID-19 pandemic; thus, increasing the negative impact of the pandemic announcement on the lodging-industry. According to a study conducted by Deloitte, consumers were unwilling to travel and stay at hotels in the U.S. during the first months of the pandemic (March, April, and May). Only 23% of the responders were comfortable traveling on a plane and 29% were comfortable staying at a hotel (Barua, 2021). According to Smith Travel Research (STR), the average U.S. Total Revenue per Available Room (TRevPAR) was $248.75 in 2019 and decreased by -62.9% to $93.02 in 2020. The largest decrease occurred in April and May 2020, which experienced a decrease of -92% respectively, consistent with consumers unwillingness to travel (Smith Travel Research, 2022a). The hotel business-travel revenue report showed large differences in hotel revenue stemming from business-travel by comparing 2019 with 2020. The U.S. total business-travel revenue declined in 2020, by 58% (American Hotel and Lodging Association, 2020b).

In order to examine the impact of the COVID-19 pandemic on the hotel-chains' market-share in the U.S. and globally, Tables one and two were prepared. They provide an overview of the market-share of each hotel-corporation in focus during the years of 2017-2020 (Bloomberg, 2022). Marriott had, throughout the years, held the largest share with Hilton having the second largest, and Hyatt the third largest; however, neither saw a large change in market-share throughout the years. Both Wyndham and Choice had a market-share of less than 6% throughout the years; though, Choice Hotels experienced the largest increase. Wyndham and Choice had relatively low shares, therefore, the percentage increase in market-share can be misleading (Bloomberg, 2022).

Table 1. Market-Share Amongst the Firms Examined

Market share (Firms Examined)	2017	2018	2019	2020	% chg
Hilton	21.51%	22.78%	23.28%	21.67%	0.74%
Hyatt	11.81%	11.39%	12.36%	10.39%	-12.02%
Marriott	54.12%	53.10%	51.65%	53.18%	-1.74%
Choice	2.49%	2.66%	2.75%	3.89%	56.22%
Wyndham	10.07%	10.06%	9.96%	10.87%	7.94%

Source: (Bloomberg, 2022)

Table 2. Global Market-Share

Market share (Global)	2018	2019	2020	% chg
Hilton	13.96%	14.49%	13.71%	-1.8%
Hyatt	6.98%	7.70%	6.58%	5.7%
Marriott	32.53%	32.15%	33.64%	3.4%
Choice	(in other)	(in other)	2.46%	-
Wyndham	6.16%	6.20%	6.87%	11.5%

Source: (Bloomberg, 2022)

The negative impacts on the U.S. economy, and especially the lodging industry, is apparent due to the border closure, quarantine measures, and uncertainty amongst citizens. Therefore, this study attempts to measure the economic impacts on the lodging industry and its stock prices stemming from the COVID-19 pandemic. Thus, the research question: Did the WHO announcement of the Covid-19 pandemic, on March 11, 2020, have an impact on the U.S. hotel stock-returns? tries to answer the extent to which U.S. hotel-stocks were impacted. Moreover, in order to narrow the study down, an additional research question was asked: Was there a significant difference in stock-returns of luxury hotel-chains and economy hotels-chains when the COVID-19 pandemic was announced by the WHO? which examines the difference in business strategies and their corresponding impacts of its stock prices.

Defining Luxury and Economy Hotel-Chains

The Monthly Hotel Research Company: STR (2022b), defines the difference chain scales, of hotels around the world, based on the Average Daily Rate (ADR). Thus, the ADR is the quotient of the revenue per room divided by rooms sold, and merely includes revenue-generating hotel-rooms. Therefore, the ADR for luxury hotels should be higher due to additional amenities and services that economy-hotels often lack (Wijtenburg, 2020). A hotel brand with higher ADR is considered higher up on the scale, and lower ADR will be considered as an economy hotel or higher. Nevertheless, STR defines each hotel-chain brands' individually. Thus, in order to summarize each hotel-chains' operational portfolio, the brands were added together based on STR's scales, as depicted in Table three (Smith Travel Research, 2022b).

Table 3. The Hotel Chain's Brand Portfolio in % Based on ADR

	Luxury Hotels	Upper Upscale	Upscale/Upper Midscale	Midscale	Economy
Hilton	15.80%	26.30%	52.63%	5.26%	-
Hyatt	60.00%	20.00%	20.00%	0.00%	-
Marriott	24.10%	34.50%	41.38%	0.00%	-
Choice	-	-	55.56%	22.22%	22.22%
Wyndham	4.20%	12.50%	33.33%	29.17%	20.83%

Source: (Smith Travel Research, 2022c).

Table 4. Luxury-focused vs. Economy-focused Hotels in %

	Upper Classification in %	Lower Classification in %
Hilton	68.42%	31.58%
Hyatt	96.00%	4.00%
Marriott	86.19%	13.79%
Choice	16.67%	83.33%
Wyndham	29.20%	70.83%

Source: (Smith Travel Research, 2022c).

As seen in Table four, Hilton, Hyatt, and Marriott are heavily weighted towards Luxury, Upper-Upscale, and Upscale hotel-brands. On the other hand, Choice and Wyndham are heavily weighted towards the Upper-Midscale, Midscale, and Economy branded hotels, as defined by ADR (Smith Travel Research, 2022c). Thus, the research is based on STR's chain-scales, and its mathematical definition of luxury focused hotel-chains versus economy focused hotel-chains.

PREVIOUS STUDIES ON PANDEMICS

The overall impact of the COVID-19 pandemic is still unknown; however, so far, we know that there has been a significant decrease in leisure and business travel since the WHO declared it a worldwide pandemic on March 11, 2020 (World Health Organization, 2020). Previous epidemics, such as the SVAR virus in 2003, drastically caused a decrease in leisure travel in parts of Asia. Chen, Jang, and Kim (2007) conducted an event study of Taiwanese hotel stocks during the SARS outbreak in Taiwan in 2003. The study concluded that there was a significant negative Cumulative Abnormal Return (CAR) starting on the day that the SARS virus was announced as a threat to the public. Furthermore, the hotel-industry saw the steepest negative return on the Taiwanese stock-market during the outbreak. Moreover, Gössling, Hall, and Scott (2020) analyzed the differences between previous crises and how the lodging industry experienced those in comparison to the COVID-19 pandemic. Other existential crises, such as 9/11 and the 2008 and 2009 recession, were not seen as negatively impactful on the hotel industry. Nevertheless, epidemics and pandemics are the most negatively impactful events on the hospitality industry and its stock returns. In addition, another study also showed that the COVID-19 pandemic has affected the stock market to a larger extent than any previous pandemics. With the usage of text-based methods in combination with stock-market movements from 1900 and market volatility from 1985 until today, they concluded that the reaction to the COVID-19 pandemic in 2020 was the largest market reaction in history. This massive market reaction was concluded to be mainly due to government interventions (Baker, Bloom, Davis, Kost, Sammon, & Viratyosin's, 2020).

Due to the COVID-19 pandemic being of similar nature to the Spanish Flu in 1918, governments around the world used similar measures to stop the spread of the COVID-19 virus. These actions included quarantine measures and travel restrictions, which were proven to have worked during the Spanish flu (Gössling et al., 2020) However, the measures put in place by the U.S. government did come with a price; thus, additional research on the impact of governmental measures on the hospitality industry was conducted. An event-study was based on U.S. hospitality stocks and the reaction of its stockholders to different governmental measures in forms of economic, health, and closures. The study found that the closure of the U.S. border as well as restrictions on state-to-state travel had the largest negative impact on hotel stocks. Additionally, fluctuation in U.S. hotel stocks were not only due to governmental interventions. The uncertainty in the nature of the coronavirus also played a big role in the ups and downs of the hotel industry stock-returns (Aharon, Cohen, Jacobi, Tzur, and Qadan, 2021). Thus, the lodging industry has been required to change their operations due to the COVID-19 pandemic, and its implied quarantine measurements, decrease in travel, and increase in hygiene requirements. According to Chi and Gursoy (2020), more research is required in the subject of post-COVID-19 tourism trends and individuals' willingness to go back to the pre-COVID-19 travel levels. This research was conducted in July of 2020 and thus indicated a low willingness for individuals to go back to their old travel habits.

The initial start of the COVID-19 pandemic led to one of history's biggest market crashes due to a large amount of uncertainty concerning the width of the pandemic, in combination with the U.S. government implementing measures to stop the spread of the virus. Dang, Mazur, and Vega (2021) analyzed different sectors in the U.S. stock-market in comparison to the S&P 500 benchmark on the days called Black Monday (9 March 2020), Black Thursday (12 March 2020), and Black Monday II (16 March 2020). During all of the days examined, there was a so-called "panic-selling". Consequently, investment decisions were based on emotions, and stock-valuations were no longer considered. The stocks that experienced the steepest drops were the hospitality sectors' shares, which also had extremely high volatility during the event-days and post-event weeks. Moreover, Clark, Mauck, and Pruitt (2021), conducted an event-study on global hospitality firms using three event-windows from the end of February to the end of March 2020. There were 154 global hospitality firms in the study at which they were compared to the S&P 500. The event-window with the largest Cumulative Abnormal Return proved to be March 13 to March 17, 2020. Additionally, research on the impact of the COVID-19 pandemic on hospitality stock returns in China was conducted by examining the effects of news. With a SVAR analysis, they analyzed the correlation between negative returns from January 13 to May 11, 2020. Therefore, concluding that negative stock-returns were mainly based on negative COVID-19 news and facts, such as increases in new confirmed cases. In contrast, positive unexpected news and facts had a small impact on the stock-prices of the hotels in China (Lee, Lee & Wu, 2021).

Industry Analysis

The U.S. hotel-industry experienced record-low Revenue per Available Room (RevPAR) and saw large decreases in Occupancy Rates (OCC) and ADR during 2020, as seen in Table five (Smith Travel Research, 2021d). This decrease was more severe than previous economic downturns, with RevPAR decreasing by 51.7%, 80%, and 71% respectively, in March, April and May of 2020. To put these numbers into context, RevPAR decreased by 20.5% YoY during the Great Recession (DuBois & Sanford, 2021). Thus, the aftermath of the worst months during the COVID-19 Pandemic is still lingering in the hotel-industry. The industry is not back to the pre-pandemic levels as seen in Table five, due to the lack of business travelers (CoStar, 2021; Smith Travel Research, 2020e). The hotel industry receives approximately half of their revenue from business travelers (Airoldi, 2022). Nevertheless, business traveling is expected to continue being down in 2022 by 23% from pre-pandemic levels (American Hotel and Lodging Association, 2022b).

Table 5. U.S., Hotel-Industry Key Metrics

Key Metrics	2021	% chg	2020	% chg	2019	% chg
ADR	$125.0	+21.1%	$103.2	-21.3%	$131.2	+1%
OCC	57.6%	+30.0%	44%	-33.0%	66.1%	0%
RevPAR	$72.0	+58.3%	$45.5	-47.5%	$86.8	+0.9%

Source: (Lock, 2022a; Smith Travel Research, 2021d; Smith Travel Research, 2020e)

According to DuBois and Sanford (2021), short-terms rentals and its associated companies, such as Airbnb and VRBO, also experienced a negative impact. However, the impact was worse for hotel-chains due to the sharp decline in business travelers. Short-term rentals quickly regained its pre-pandemic RevPAR values and reached $165.35 in June of 2020, much due to a steady ADR

throughout the pandemic. On the other hand, hotels did not see the same recovery, and during the same month, experienced a RevPAR of $40.81, 64.8% lower than previous year (DuBois & Sanford, 2021). Because of this slow recovery of RevPAR by hotel-chains, the study merely focuses on hotels and the differences in hotel-chain scale segments.

In addition, there was a difference between the RevPAR of the considered luxury hotel-chains and the economy hotel-chains as depicted in Table six. The luxury hotel-chains experienced a sharper decline in RevPAR in 2020 compared to the economy hotel-chains. However, the table also shows how the RevPAR for the luxury-chains were significantly higher in 2019 than in 2021. In contrast, the economy-chains saw lower RevPAR in all three years examined; thus, the COVID-19 pandemic impact was less significant on their Revenue per Room.

Table 6. RevPAR Luxury hotel-chains vs. Economy hotel-chains

RevPAR	2021	% chg	2020	% chg	2019
Hilton	$73.6	+60.0%	$46.0	-58.0%	$109.6
Hyatt	$77.8	+69.1%	$46.0	-66.2%	$136.0
Marriott	$74.7	+57.1%	$47.5	-64.6%	$134.6
Choice	$48.2	+47.4%	$32.7	-30.6%	$47.2
Wyndham	$35.9	+46.5%	$24.5	-40.1%	$40.9

Source: (Lock, 2022b; Lock, 2022c; Lock, 2022d; Hyatt Hotels Corp.- SEC Filings, n.d.; Choice Hotels International – SEC Filings, n.d.)

DATA AND METHODS

Event-studies are widely used in finance to measure the impacts a specific event had on a stock-price and the value of a company. The first recorded event-study was conducted by James Dolley in 1933, at which the effects of stock splits were analyzed using an event window from 1921-1931 (Kothari & Warner, 2006). Since then, event-studies have been growing in usage as well as in complexity. “The usefulness of such a study comes from the fact that, given rationality in the marketplace, the effects of an event will be reflected immediately in security prices” (Campbell, Lo, MacKinlay, & Whitelaw, p.13, 1998).

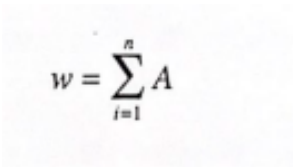
In this report, an event-study was conducted on the five hotel-chains’ stock-prices during 31-weeks ranging from 11/25/2019 to 6/22/2020, emphasizing the weeks’ post-event window. The benchmark used in the study was S&P 500, at which the corresponding data values were collected during the same time-period. With the collected data, Abnormal Returns (AR) were calculated, which measures the difference between the actual return and the expected returns (Campbell et al., 1998; Kothari & Warner, 2006). Formulas and detailed methodology can be found in the appendix.

Mann-Whitney Wilcoxon Test

To test the differences in stock-prices of the economy and the luxury hotel chains a Mann-Whitney Wilcoxon-test was used. The Wilcoxon-test is calculated by ranking the means of the AR from smallest to largest and summing them together to be tested against a random variable of the sample. Sample A was the luxury hotel-chains’ average stock-returns during the period examined, and sample B was the economy hotel returns. The returns for Samples A and B were ranked from

smallest to largest separately; however, only one sample can be used in a Wilcoxon-test. Sample A was used in this study, i.e., the luxury hotel chains. The usage of sample B would have given the same or close to the same result according to Mann-Whitney Wilcoxon (1947). Moreover, in order for the Wilcoxon-test to work properly, the sample size must be larger than 10. Thus, the test statistic was given by the z-score at which the Null Hypothesis can be tested. With a 95% confidence interval the null hypothesis is accepted if -1.96 $\leq$ Z $\leq$ 1.96 (Mann & Whitney, 1947).

Figure 1



$$W = \sum_{i=1}^{n} A$$

Figure 2

$$\mu_A = \frac{n_A(n_A + n_B + 1)}{2} \quad \text{and} \quad \sigma_A = \sqrt{\frac{n_A n_B(n_A + n_B + 1)}{12}}.$$

More precisely,

$$\text{pr}(W_A \geq w_A) \approx \text{pr}(Z \geq z), \quad \text{where } z = \frac{w_A - \mu_A}{\sigma_A}$$

Source: (Mann Whitney, 1947).

RESULTS AND ANALYSIS

Average Abnormal Returns Across the Firms

The ACAR's were calculated across the five firms during three post-event periods. The ACAR's were compared to the benchmark of the S&P 500 returns during the same time period. Table seven indicates that the ACAR for the five weeks after the event-day was not significant. Demonstrating that the ACAR of -10.65% was not greater or lesser than the return of S&P 500 during the same time period with a 95% confidence interval. The ten weeks post-event date also showed a non-significant ACAR at which the five hotel stocks experienced returns of negative 4.78%. As concluded, the ACAR's for both the five-weeks and ten-weeks, posterior the WHO's COVID-19 announcement, was not significant. This finding could be due to the large amount of news on the possible future impacts of COVID-19 at which caused panic amongst investors in most industries (Mahata, Nurujjaman, Prakash, Prasad-Bal & Rai, 2021).

Presented in Table seven, a significant and large ACAR of -15.08% was recorded in the 15-week post-event window mainly due to investors being nervous about the future of the lodging industry

Table 7. The ACAR's of All Hotels Examined.

Time period	Average CAR	Sum Var	Var/N^2	Square root	t-test	Significance 95% CI
(0,5) 3/9/2020- 4/13/2020	-10.65%	0.094	0.004	0.061	-1.733	No
(0,10) 3/9/2020-5/18/2020	-4.78%	0.058	0.002	0.048	-0.990	No
(0,15) 3/9/2020-6/22/2020	-15.08%	0.031	0.001	0.035	-4.275	Yes

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

(Florida Restaurant and Lodging Association, 2020). The immense difference between the three periods can be explained by the stabilization of the S&P 500, where the "panic sell-offs" on most holdings started to decline after the news about the pandemic had sunken in (Capelle-Blancard & Desroziers, 2020). However, the negative effects of the COVID-19 virus on the lodging industry were expected to be both large and lengthy. As Aharon et al's (2021) study concluded, the U.S. border-closure and travel restrictions were the most devastating governmental measures for the U.S. hotel industry. Thus, leading to both direct and indirect negative impacts, which is a potential reason for the immense decline of returns in the 15-weeks after the event-day. Moreover, as concluded by the SVAR-study made in China, negative COVID-19 related news had large negative impacts on the stock-returns of hotel firms' in China. Hence, similar negative impacts from COVID-19 related news in the U.S. could have impacted the U.S Hotels' stock returns in the 15-weeks post-event date (Chen et al., 2007).

Tables eight, nine, and ten depicts the total loss or positive return during the period examined based on the CAR. For the first five weeks after the event-day, Marriott and Wyndham experienced the largest negative CAR. However, due to Marriott's large number of shares, their company experienced a loss of $46,000 million, and Wyndham only $13,000 million. Nevertheless, in the ten-week post event-date, Wyndham saw positive CAR's, thus regaining most of the losses

Table 8. The Cumulative Abnormal Return Positive/Negative (0,5).

Hotel	**CAR**	**Variance**	**# Shares** (in millions)	**Negative/Positive Return in $** (in millions)
Hilton	-10.54%	0.008	52,920,000	- 5,579
Hyatt	-8.76%	0.022	101,289	- 8,873
Marriott	-14.19%	0.024	324,400,000	- 46,018
Choice	-5.80%	0.016	55,536	- 3,221
Wyndham	-14.0%	0.024	93,100	- 13,009

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

Table 9. The Cumulative Abnormal Return Positive/Negative (0,10).

Hotel	**CAR**	**Variance**	**# Shares** (in millions)	**Negative/Positive Return in $** (in millions)
Hilton	-10.81%	0.006	52,920	- 5,723
Hyatt	-17.34%	0.013	101,289	- 17,559
Marriott	-8.67%	0.014	324,400	- 28,120
Choice	-1.90%	0.009	55,536	- 1,057
Wyndham	14.81%	0.017	93,100	- 13,784

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

Table 10. The Cumulative Abnormal Return Positive/Negative (0,15).

Hotel	CAR	Variance	# Shares (in millions)	Negative/Positive Return in $ (in millions)
Hilton	-23.25%	0.003	52,920	- 12,303
Hyatt	-27.34%	0.008	101,289	- 27,689
Marriott	-19.44%	0.010	324,400	- 63,074
Choice	-6.40%	0.003	55,536	- 3,553
Wyndham	1.01%	0.006	93,100	944

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

realized in the five-week period. Once again, in the 10-week period, Marriott experienced the largest loss in dollars. Though, Hyatt experienced the largest negative CAR. In the 15-week period, the CAR's of the three luxury focused hotel-chains saw large negative CAR's, all being in the 20's. Thus, Hilton, Hyatt, and Marriott experienced losses of $12,000, $28,000, and $63,000 million, respectively, in the 15-week period, as summarized in Table 10. On the other hand, the economy focused hotel-chains did not see as much of an aggressive decline. As a matter of fact, Wyndham saw positive CAR's and a positive return of $944 million, and Choice experienced a loss of $3,500 million.

ACAR's of Luxury Hotels

The average cumulative abnormal returns were calculated for the luxury firms (Hilton, Hyatt, and Marriott) and the economy firms (Choice and Wyndham) separately, to identify any anomalies between the two different strategies (economy versus luxury). Table 11 presents the ACAR's of

Table 11. The ACAR's of Luxury Hotels.

Time period	Average CAR	Sum Var	Var/N^2	Square root	T-test	Significance 95% CI
(0,5) 3/9/2020- 4/13/2020	-11.16%	0.054	0.0060	0.078	-1.44	No
(0,10) 3/9/2020-5/18/2020	-12.27%	0.033	0.0037	0.061	-2.02	Yes
(0,15) 3/9/2020-6/22/2020	-23.34%	0.022	0.0025	0.050	-4.69	Yes

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

the luxury hotels. The five-week post-event window was not significant, with a 95% confidence interval with ACAR's of -11.6%. Nevertheless, in the beginning of the pandemic, the U.S. had their borders closed, limiting leisure-travel to a minimum. Although travel within the U.S. was allowed, it was not recommended. Therefore, many luxury hotels were either obliged to shut down or to operate at a decreased capacity due to the immense costs it takes to run a luxury hotel. Moreover, the luxury hotels that stayed open were required to temporarily close down their amenities or to regulate the capacity. These facts could have been massively impacting the willingness to stay at a luxury hotel as well as the willingness to invest in a luxury-focused hotel-chain (Krishnan, Mann, Seitzman, & Wittkamp, 2020). Moreover, the ten- and 15-week post-event window both showed significantly different returns than that of the S&P 500, indicating that the luxury hotel-chains did see a notable negative impact due to the COVID-19 pandemic.

As depicted in Figures three, four, and five, the luxury focused hotel-chains experienced big peaks and troths of their individual CAR's. Nevertheless, the patterns of the three firms were of similar nature where the week of 3/30/2020 experienced a sharp decline in all three firms followed by a steep increase in the week of 4/6/2020.

Figure 3. CAR Marriott

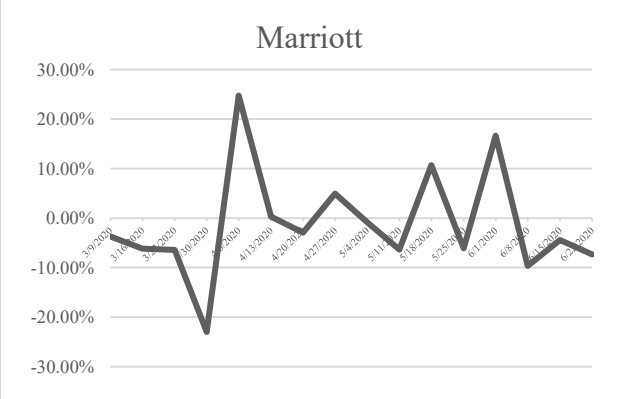


Figure 4. CAR Hilton

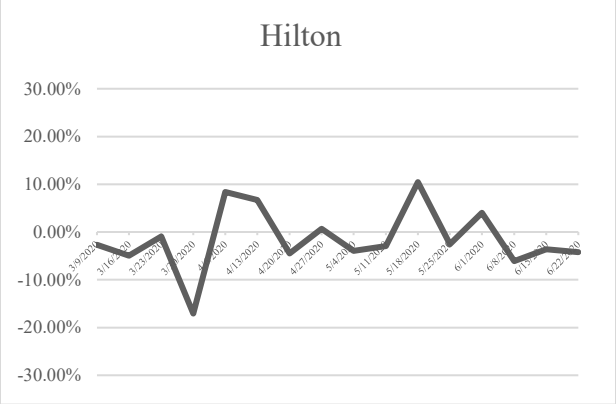
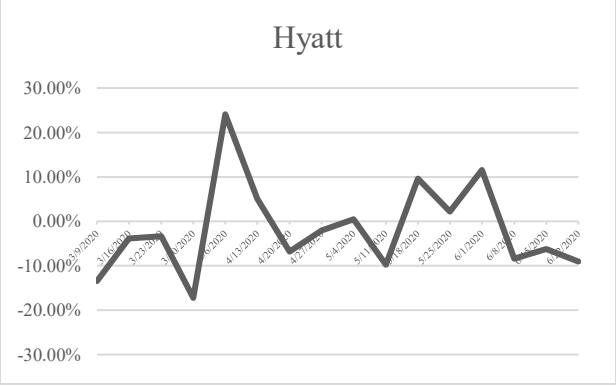


Figure 5. CAR Hyatt



Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

ACAR's of Economy Hotels

The ACAR's of the economy hotels were examined to see the effects of the COVID-19 pandemic on the economy hotel-chains, Choice and Wyndham, combined. Gössling et al. (2020) concluded, the COVID-19 pandemic caused the largest lodging industry market reaction in history, trumping both 9/11 and the 2008-2009 recession. However, the findings conclude that the economy hotel-chains experienced less of a negative impact compared to the luxury hotel-chains. The five, ten-, and 15-week period examined were not significant at a 95% confidence interval, indicating that the economy hotel-chains did not see any abnormal returns when comparing it to the S&P 500. As represented in Table 12, the ACAR's of the five weeks post-event day was -9.89%, which was not greater or lesser than the S&P 500. The ten-week period experienced an ACAR of a positive 6.45%, and the 15-week period saw a small decline of -2.69%. The reason behind this small impact on U.S. economy hotel-chains could be many and therefore has to be further examined. Nevertheless, 52% of the American population are considered middle class, 29% are considered lower class, and with only 19% upper class (Kochhar, 2020). These statistical actualities in combination with tougher economic times could be a factor of the good performance of economy hotel-chains when comparing it to the luxury hotel-chains.

Table 12. The ACAR's of Economy Hotels.

Time period	Average CAR	Sum Var	Var/N^2	square root	t-test	Significance 95% CI
(0,5) 3/9/2020- 4/13/2020	-9.89%	0.040	0.010	0.100	-0.988	No
(0,10) 3/9/2020-5/18/2020	6.45%	0.025	0.006	0.079	0.814	No
(0,15) 3/9/2020-6/22/2020	-2.69%	0.009	0.002	0.047	-0.574	No

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

The CAR of the two-economy hotel-chains' in isolation of each other showed similar patterns as seen in Figures six and seven. Moreover, with the similarity in patterns there is an indication that

Figure 6. CAR Wyndham.

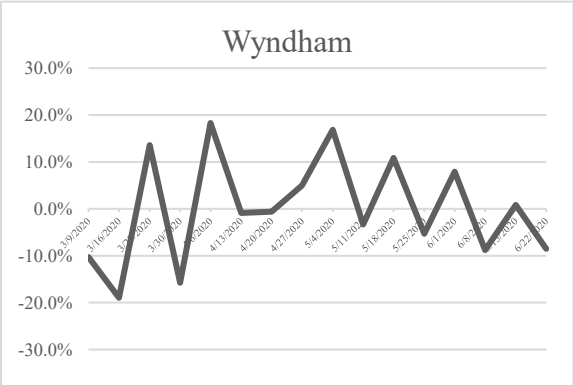
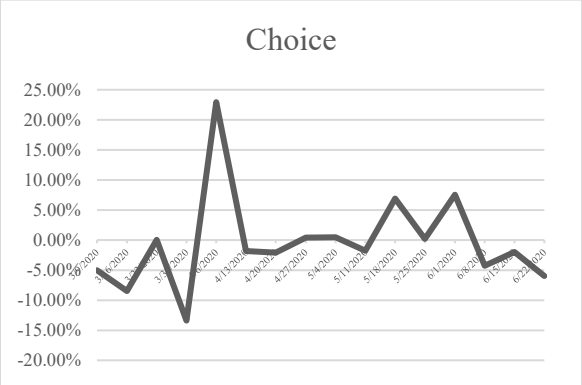


Figure 7. CAR Choice.



Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

the economy-focused business strategy performs different than the luxury. Moreover, Wyndham experienced positive CAR's to a greater extent than Choice; however, Choice Hotels experienced smaller movements in the CAR's during the time period examined.

Wilcoxon-Test

To test that the luxury strategy was different from the economy strategy in terms of ACAR's during the weeks after the event-date, a Wilcoxon-test was conducted. The differences in the means were tested for the 10-week and 15-week period. The 5-week period is not applicable to this test due to the precondition of having a sample size greater than ten.

As depicted in Table 13, there was a significant difference between the luxury hotel-chains' ACAR's and the economy hotel-chains' ACAR's during the ten-weeks post event-date. Moreover, as shown above, the ACAR's for the economy hotel-chains were positive in the ten-week period, whereas the luxury chains experienced negative ACAR's. A similar picture can be seen in Table 14, at which the luxury hotel-chains and the economy hotel-chains were significantly different in the 15-week post-event period. The economy hotel-chains experienced an ACAR of -2.69%, whereas the luxury hotel-chains experienced an ACAR of negative 23.34%.

The reason behind the significant difference in the luxury and economy hotel-chains can be many. However, the sharp decline (-32.9%) in GDP during the first quarter of 2020, much due to the soaring consumer spending, could be a factor (Horsley, 2020). Additionally, the U.S. were experiencing a high unemployment rate, which could be a reason for the decline in luxury hotel stays as well as luxury hotel stock-returns (Szmigiera, 2021). Moreover, there was a sharp decline in business travelers' post-event window (March 11, 2020). The total U.S. business travel revenue was expected to decline -66.2% YoY in 2021 which is a decline of 59 billion dollars (American Hotel and Lodging Association, 2020a).

Table 13. Wilcoxon-Test, 10-weeks

Mean	Standard Deviation	Z-stat	Significance
127	3.25	-2.62	Yes

Table 14. Wilcoxon-Test, 15-weeks

Mean	Standard Deviation	Z-stat	Significance
264	4.69	-2.77	Yes

Source: (Choice Hotels International Inc, 2021; Hilton Worldwide Holdings Inc, 2021; Hyatt Hotel Corporation, 2021; Marriott International, 2021; Wyndham Hotels and Resort Inc, 2021; Yahoo! SPDR S&P 500 ETF, 2022).

The decline of business travelers could be a reason for the negative ACAR for the luxury-focused hotel firms. However, this theory would have to be further examined. In addition, the economy hotels did see a slight increase in market-share post-event window. Indicating that the economy hotel-chains saw little to no impact on their market-share due to the COVID-19

pandemic. Moreover, the three luxury focused hotel chains, Hilton, Hyatt, and Marriott, did see a slight decline in their market-share over the period of 2017-2020. However, these changes were minimal and cannot be seen as a cause for the significantly negative ACAR's of the three luxury hotel-chains (Bloomberg, 2022).

CONCLUSIONS

The COVID-19 pandemic impacted the lodging industry negatively. As expected, it caused both a decrease in customers as well as investors. Although the widespread virus affected all parties in the lodging industry, some hotel-chains performed better. This report examined the differences in business strategies, at which a luxury strategy and an economy strategy were compared. The ACAR's were firstly calculated on the five hotel chains during the five-, ten-, and 15-week interval. The ACAR of the 15-week interval saw significant abnormal returns, indicating that the five largest hotels in the U.S. experienced returns, on average, lower than the S&P 500 during the same timeframe. However, the economy hotel-chains were examined separately and did not experience a significantly ACAR in the five, ten and 15-week periods examined. Nevertheless, the luxury hotel-chains saw a significant ACAR in the ten- and 15-week post event-date. The reason for the difference could be many; however, the decrease in consumer spending in combination with high unemployment could have caused a shift away from staying in luxury hotels to instead a more budget friendly hotel. This hypothetical shift could also be the reason for a move in investors' sentiment, indicating a shift away from investing in hotels such as Hilton, Hyatt, and Marriott and instead invest in economy-focused chains such as Choice and Wyndham Hotels. Moreover, the luxury hotels were hit hard due to the substantial costs of running luxury hotels and the large amounts of staff needed. Thus, luxury hotels were running at limited capacity with limited amenities. In concluding remarks, The Wilcoxon-test showed with a 95% confidence interval that the hotels with an economy business strategy experienced significantly less ACAR's in the beginning of the pandemic in comparison to a luxury-focused strategy. The overall takeaway from this study is: in times of bad economic conditions, in times of uncertainty, and in times of highly contagious viruses, economy hotel-chains' stock-prices seem to see less of a negative impact than luxury-focused ones. This conclusion is backed up by the Wilcoxon-test which showed that there was a significant difference between the economy-focused hotel-chains and the luxury-focused hotel-chains in the beginning stages of the pandemic. This may be important to portfolio managers trying to mitigate risk associated with pandemics.

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APPENDIX

Detailed Description on Methodology

The data was collected from each of the Hotel's stock prices during the time period of 11/25/2019 to 6/22/2020, in addition adjusted closing prices from the S&P 500 was used. With the collected data, Abnormal Returns (AR) were calculated, which measures the difference between the actual return and the expected returns as illustrated by this formula (Campbell et al., 1998; Kothari & Warner, 2006):

Figure 8

$$AR_{i\tau} = R_{i\tau} - E(R_{i\tau}|X_\tau)$$

Source: (Mann & Whitney, 1947).

To calculate the expected returns, the Capital Asset Pricing Model (CAPM) for the five different firms were calculated through a time-series regression at which the slope of the function is the Beta, i.e., the sensitivity to the hotel's stock prices in comparison to the S&P 500 (Lintner, 1965; Sharpe, 1964):

Figure 9

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

$$E(\varepsilon_{it} = 0) \qquad \text{var}(\varepsilon_{it}) = \sigma^2_{\varepsilon_i}$$

Source: (Mann & Whitney, 1947).

The CAPM model concludes a linear relationship between the firm's stock-return and the market returns. The market model is based on the data from the period before the event, thus recording the return during "normal" times, at which Beta is the key driver in this model (Campbell et al., 1998, p.18).

Campbell (1998) highlighted the method of aggregating the abnormal return over time which is called Cumulative Abnormal Return (CAR) at which period T-t and T+t (B to time E) are analyzed.

Figure 10

$AR = \hat{\varepsilon}_{it}$ and for the (CARs), $CAR = \sum_{t=B}^{E} \hat{\varepsilon}_{it}$

Source: (Mann & Whitney, 1947).

Average Cumulative Abnormal Return Across the Hotel Chains

The five hotel-chains were firstly studied together and later divided into luxury-focused and economy-focused hotel-chains, in order to examine the difference in strategies and their stock-returns during the start of the COVID-19 pandemic. The ACAR's were calculated for the five-, ten-, and 15-week period, as well as the corresponding variance, the t-statistics were tested in order to reject the Null Hypothesis.

Figure 11

$$ACAR = \frac{\sum_{i=1}^{n}\left(\sum_{t=\beta}^{E}\hat{\varepsilon}_{it}\right)}{n}$$

Figure 12

$$VAR(ACAR) = \frac{1}{n^2}\left[\sum_{i=1}^{n}\left(\sum_{t=\beta}^{E}\hat{\sigma}_{it}^2\right)\right]$$

Source: (Mann & Whitney, 1947).

Thus, the t-test was calculated by the ACAR of the period examined, divided by the square-root of the added variances of the time period (Campbell et al., 1998).

Figure 13

$$\frac{ACAR}{\sqrt{VAR(ACAR)}}$$

Source: (Mann & Whitney, 1947).

The t-statistic was used to test the significance of the ACAR's during the event-window that were being examined. The t-statistic should be greater than 1.96 or less than -1.96 in order to reject the Null hypothesis with a 95% confidence interval (Campbell et al., 1998).

H0: *The WHO announcement of the COVID-19 pandemic had no impact on the U.S., hotel stocks examined.*

Ha: *The WHO announcement of the COVID-19 pandemic had a significant impact on the U.S., hotel stocks examined.*

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HOW COMMUNITY VIRTUALITY INFLUENCES PRIVACY RISK BELIEFS IN VIRTUAL COMMUNITIES

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ABSTRACT

This research explores several aspects of an individual-oriented virtual community (e.g., social networking site) that may influence an individual's evaluation of privacy risks, which may in turn influence individual private disclosure. Based on the notion of discontinuity, this study develops the concept and measurement of perceived community virtuality. Evidence from a study of 271 individual-oriented virtual community members indicates that individuals would assess information privacy risk beliefs based on their perceptions of various aspects of the community's virtuality. In addition, such information privacy risk beliefs positively influence individuals' private disclosure. Among the four dimensions, culture virtuality, geographic virtuality, and relationship virtuality load significantly on the perceived community virtuality construct. This result implies that individuals' perceptions on these three dimensions have effects on their assessment of how virtual their communities are. The finding from this study reveals that, when an individual perceives that his/her virtual community members' cultural background, geographic location, and/or the relationship networks are different from his/her physical life, the individual may consider higher information privacy risks in the virtual community. From a practical standpoint, this study provides guidance to individual-oriented virtual community platform organizations on how to reduce individuals' privacy risk beliefs via refining the platform environment. Organizations that host virtual community platforms may want to develop initiatives to decrease individuals' perceptions of a community's virtuality specifically for the relationship and copresence discontinuities. Limitations and future research are discussed.

Keywords: Virtual Community, Information Privacy, Private Disclosure

INTRODUCTION

A virtual community is a focused gathering of people who interact through the Internet (based on the work of Gu, Konana, Rajagopalan, & Chen, 2007; Ma & Agarwal, 2007; Phang, Kankanhalli, & Sabherwal, 2009). Examples of virtual communities include an online forum on photography, a weblog about music, and an individual's network in a social networking site. Individual-oriented virtual communities a type of virtual community focused around sharing personal and private information (i.e., information about one's thoughts, values, experiences, etc... that the individual can reasonably expect will not be made public) for relationship development (i.e., social networking).

Building on the notion of software-based platforms (Tiwana, Konsynski, & Bush, 2010), this study refers to a virtual community platform as an Internet-based system that provides functionality that allows an individual to build a virtual community. Examples include a social networking site in which an individual can create a friend group, a website where an individual can create a software project for online collaboration, and a bulletin board system in which an individual can create his or her own discussion board.

Based on the work of Chudoba et al. (2005) and Watson-Manheim et al. (2002, 2012), we define *perceived community virtuality* as the degree to which an individual perceives a lack of cohesion or discontinuities in aspects of an individual-oriented virtual community. The definition is based on the concept that individuals expect to interact asynchronously with people in virtual communities who are geographically dispersed and from diverse cultural background, etc. Research has found some factors that influence the formation of information privacy risk beliefs (e.g., Malhotra, Kim, & Agarwal, 2004). Also, privacy (the selective control of access to the self; Altman, 1975) has been identified as one of the main obstacles to information sharing in virtual communities (Dwyer, Hiltz, & Passerini, 2007; Posey, Lowry, Roberts, & Ellis, 2010). However, empirical research has not explored how aspects of virtual communities and information privacy risk beliefs are associated in virtual communities. Therefore, the research question proposed is: *how does community virtuality influence an individual's information privacy risk beliefs in a virtual community?* To answer the research questions, this study explores several aspects of individual-oriented virtual communities that may influence an individual's evaluation of privacy risks, which will in turn influence an individual's private disclosure (Derlega, Metts, Petronio, & Margulis, 1993; Posey et al., 2010).

This research contributes to the privacy and virtual community discipline by developing and incorporating the community virtuality construct. In addition to theoretical contributions, this study has managerial implications especially for organizations that host virtual community platforms (e.g., Twitter, Facebook). Research suggests that individuals develop relationships by sharing private information (Derlega et al., 1993). Therefore, organizations that host virtual community platforms might use the findings from this study to increase the number of users by encouraging users to share private information.

The next section presents a theoretical framework, followed by the research model and the hypotheses. Subsequently, we present the empirical study and findings. The final section discusses the findings, the theoretical contributions, the practical implications, and limitations.

BACKGROUND

Privacy Calculus

The concept of privacy used in research in discussing how an individual regulates access to the self (Margulis, 2003; Smith, Dinev, & Xu, 2011) and how he/she regulates the interaction between the private self and the public (Westin, 1967). Thus *individual privacy in individual-oriented virtual communities* is the freedom of an individual in an individual-oriented virtual community to determine to what extent one's private information is shared with others.

Researchers using the privacy calculus perspective have found that individuals use self-disclosure and misrepresentation to manage privacy (Jiang, Heng, & Choi, 2013) often because of the ease of developing relationships online and enjoyment with the virtual community platform (Krasnova, Veltri, & Günther, 2012). Krasnova et al. (2012) applied the privacy calculus to the context of Social Networking Sites (SNSs) and also treated users' perceptions of trust as being uniformly applied across all areas within SNSs and towards all other users participating on these sites.

Community Virtuality

Based on the work of Chudoba et al. (2005) and Watson-Manheim et al. (2002), this study defines *perceived community virtuality* as the degree to which an individual perceives a lack of cohesion or discontinuities in aspects of a virtual community. The term "virtual" has been applied to a variety of groups (such as teams, organizations, or communities) to differentiate them from a traditional (physical) ones (Watson-Manheim et al., 2002).

Watson-Manheim et al. (2002) argue that the common theme across studies using the term "virtual" is the notion of discontinuity (i.e., a gap or a lack of coherence). Watson-Manheim et al. (2002) analyzed the literature studying virtual contexts and identified seven discontinuities – physical location, temporal location, work group membership (who you work with), organizational affiliation, relationship with an organization (e.g., permanent or temporary relationship), and culture. Further, Chudoba et al. (2005) proposed measuring the concept of virtuality based on the notion of discontinuities to assess how 'virtual' a team is. They conceptualized and measured team virtuality based on six discontinuities – geography, time zone, culture, work practices (i.e., have similar perspectives about how work should be done and can work together smoothly), organization, and technology.

Following Watson-Manheim et al.'s (2002) concept of discontinuities and Chudoba et al.'s (2005) concept of virtuality, this study conceptualizes community virtuality as a second-order construct consisting of five dimensions: geographical discontinuity, temporal discontinuity, relationship discontinuity, cultural discontinuity, and co-presence. The seven discontinuities and their corresponding dimensions of perceived community virtuality are presented in Table 1.

The discontinuities of organizational affiliation and relationship with an organization are not applicable in virtual communities because perceived community virtuality considers individual perceptions about a virtual community (not an organization or the organization that hosts the virtual community platform). The discontinuities of work practice in team virtuality (Chudoba et al., 2005) is not applicable in virtual communities because not necessarily all virtual communities' main purpose/interest is to work together.

Table 1. Mapping Discontinuities to Perceived Community Virtuality

Discontinuities (Watson-Manheim et al., 2002)	**Team Virtuality** (Chudoba et al., 2005)	**Perceived Community Virtuality**
Physical Location	Geography	Geographical Discontinuity
Temporal Location	Time Zone	Temporal Discontinuity
Culture	Culture	Cultural Discontinuity
Work Group Membership	(Not Applicable)	Relationship Discontinuity
Organizational Affiliation	Organization	(Not Applicable)
Relationship with an Organization		
(Not Applicable)	Technology	Co-presence (Ma & Agarwal, 2007)
(Not Applicable)	Work Practice	(Not Applicable)

Geographic discontinuity reflects the degree to which an individual perceives that community members are in different geographic locations (Chudoba et al., 2005). This dimension reflects the idea that community members may be located close to each other geographically or may be dispersed over a variety of geographic areas.

Temporal discontinuity reflects the degree to which an individual perceives that community members are in different time zones (Chudoba et al., 2005). Similar to geographic discontinuity, temporal discontinuity reflects the idea that virtual community members may be in the same time zone or may be in different time zones. It is important to note that virtual community members may be located over a wide area but still be in the same or adjacent time zone(s). For example, virtual community members may be located in Canada and Argentina. Although these two nations are geographically disperse, virtual community members may still be in the same time zone.

Relationship discontinuity reflects the degree to which an individual perceives that the people in the relationship network in the virtual community differ from the people he or she has relationships within his or her physical life. This dimension is developed based on the idea of group membership discontinuity (Watson-Manheim et al., 2002). In a virtual community with low relationship discontinuity, the people in the individual's virtual community resemble the people and relationships in his or her physical life.

Cultural discontinuity is the degree to which an individual perceives that virtual community members represent different cultures (Chudoba et al., 2005). This dimension reflects the idea that virtual community members may be from the same cultural background, or may have diverse cultural backgrounds. There are many aspects of cultural background that make an individual perceive cultural discontinuity. For example, an individual may perceive virtual community members come from a variety of countries, have different native languages, and/or ethnic origins. Cultural discontinuity reflects the perception that virtual community members are not cohesive in terms of their cultural background but does not refer to any specific aspect of culture.

Co-presence reflects the degree to which an individual has a feeling of being with other members of the virtual community (Ma & Agarwal, 2007). Unlike the former four dimensions that reflect the features of virtual community members, co-presence captures the features of the technology, or IT artifacts, in a virtual community. Two technological features can promote co-presence: interactivity and medium vividness (Khalifa & Shen, 2004; Ma & Agarwal, 2007). Interactivity is a technological feature of communication tools such as real-time chat rooms or instant messengers that synchronize interaction and give individuals a sense of actually being together. Medium vividness gives individuals a sense that they are with other virtual community members in a manner similar to the physical world (Ma & Agarwal, 2007). Medium vividness provides information about the communication environment (e.g., allowing members to know who is currently online, where are they, and what they are doing).

MODEL AND RESEARCH HYPOTHESES

The research model is presented in Figure 1. We begin by developing the hypotheses from left to right in the model.

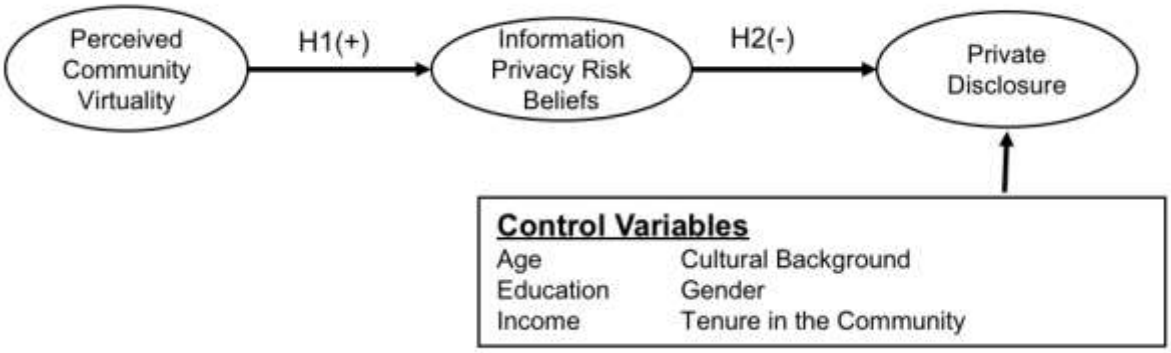

Figure 1. Research Model

Perceived Community Virtuality and Privacy Risks

Recall that *perceived community virtuality* is defined as the degree to which an individual perceives a lack of cohesion or discontinuities in aspects of an individual-oriented virtual community. When an individual perceives high community virtuality, he or she feels that the virtual community members and the communication environment are not cohesive or united. As a result, the individual may feel that it is difficult to manage privacy practices with his or her virtual community members (i.e., confidants). Without a clear understanding or agreement about the privacy management practices the individual does not have a feeling of being attuned with the other members of the virtual community. The individual may interpret the ambiguity as a lack of cohesion and perceive that virtual community members will interpret privacy practices in various ways. In these circumstances, the individual may perceive a higher likelihood of loss due to sharing private information. In an environment of low cohesion and high ambiguity, the individual is less likely to expect that the virtual community members will treat his or her private information appropriately. Therefore, we posit that:

> *H1: In an individual-oriented virtual community, an individual's perceived community virtuality will increase his or her information privacy risk beliefs.*

Privacy Risk Beliefs and Private Disclosure

Private disclosure refers to an individual's voluntary and intentional behavior of revealing private information to others (Derlega et al., 1993; Petronio, 2002; Posey et al., 2010). Research has found that an individual who perceives a high likelihood of loss due to sharing private information (i.e., information privacy risk beliefs) is less likely to share private information (Malhotra et al., 2004; Posey et al., 2010). We confirm this relationship in the virtual community context so that we can compare it with that of the territory privacy risk beliefs – territory coordination relationship.

> *H2: In an individual-oriented virtual community, an individual's perceived information privacy risk beliefs will decrease his or her disclosure of private information.*

RESEARCH METHOD

Our goal is to develop a model for explaining the relationship between perceptions of community virtuality, privacy risk beliefs and private disclosure. Since the emphasis is on explaining the variance and in developing causal relationships, the field study methodology is adopted and statistical analysis is performed using structural equation modeling.

Measure Development

We followed the procedures suggested by Schwab (2005) to develop measures and to make inferences about the measures' construct validity. Table 2 provides the summary of constructs definitions, and measure sources. We adapted the measures from Malhotra et al's (2004) information privacy risk beliefs and Posey et al.'s (2010) private disclosure to the virtual community context, because they have been proved to be valid and reliable measures. We developed the measure for perceived community virtuality based on Chudoba et al.'s (2005) measure of team virtuality, Ma and Agarwal's (2007) measure of copresence, and the notion of group membership discontinuity (Watson-Manheim et al., 2002).

Table 2. Summary of Constructs and Measures

Construct and Definition	No. of Items	Measure
Perceived Community Virtuality: The degree to which an individual perceives a lack of cohesion or discontinuities in aspects of a virtual community.	19	Developed
Information Privacy Risk Beliefs: An individual's perception of the likelihood of loss due to sharing private information with the virtual community members.	4	Adapted from Malhotra et al. (2004)
Private Disclosure: An individual's voluntarily and intentionally revealing private information to virtual community members.	20	Adapted from Posey et al. (2010)

Private disclosure consists of five dimensions: amount, depth, honesty, intent and valence (Wheeless, 1978; Wheeless & Grotz, 1976). The *amount* dimension concerns how frequently and how much an individual reveals about himself/herself. The *depth* dimension concerns how intimate the revealed information is. The *honesty* dimension concerns how accurate the information about oneself is. The *intent* dimension reflects the degree to which an individual has control and is aware of his or her revealing of information. The *valence* dimension concerns how positive in nature the disclosed information is.

The measures present content validity when items and the construct definition are aligned. For this purpose, each item has been reviewed by two IS research. In addition, for face validity, the wording of the items has been reviewed and discussed among three virtual community members until consensus was reached. A seven-point Likert type scale was adopted in all items. Appendix A presents the measurement items for each construct.

Based on previous research (Child, Pearson, & Petronio, 2009; Malhotra et al., 2004) and the principles by Jarvis et al. (2003) and MacKenzie et al. (2005), information privacy risk beliefs is operationalized as first-order reflective constructs. Perceived community virtuality and private disclosure are operationalized as reflective first-order and formative second-order constructs. Control variables included are gender, age, education, cultural background, tenure in the virtual community, and income. These variables are expected to influence private disclosure (Malhotra et al., 2004; Posey et al., 2010; Xu, Lu, Goh, Jiang, & Zhu, 2009).

Data Collection

This study collected data from individuals using Amazon Mechanical Turk. Research has shown that a Mechanical Turk sample is more diverse than convenience samples and student samples (Berinsky, Huber, & Lenz, 2012; Buhrmester, Kwang, & Gosling, 2011). In terms of data quality, Mechanical Turk participants appear to respond in a manner consistent with convenience samples (Berinsky et al., 2012). Also, the data from Mechanical Turk provides reliability and validity that are similar to those from other traditional data sources such as student and consumer samples (Buhrmester et al., 2011; Steelman & Hammer, 2014).

All participants were over 18 and under 65 years of age, as this age range appropriately represents the population of individual-oriented virtual communities (Carmichael, 2011; Chappel, 2011). The participants had also visited individual-oriented virtual communities within the previous 30 days. The participants were provided a definition of a virtual community and asked to pick the virtual community he or she visits the most often, and the second most often as the focal virtual community to think of when responding to the questions. Participants were randomly asked to focus on the first or second most often visited virtual community as a way to avoid the restriction of all participants being situated in the same virtual community (e.g., Facebook). Because this study examines privacy issues in individual-oriented virtual communities, only the responses where social networking sites are the focal virtual communities will be used for data analysis. Appendix A presents the research instrument instructions.

Data was collected using an online self-report survey instrument. To minimize the possibility of common method variance, data was collected in two stages (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), with at least a 14 day span, as empirical evidence suggests that a separation of two to three weeks between the measurement of variables is an effective technique for reducing common method variance (Johnson, Rosen, & Djurdjevic, 2011, study 2). Also, to reduce common method bias, we counterbalanced the order of the measurement of the constructs in the first-stage questionnaire to avoid implying privacy risk beliefs as the outcomes of other constructs.

RESULTS

Sample Characteristics

Overall, 507 participants (211 from student and 296 from Mechanical Turk) took the first-stage survey and 404 participants (142 from students and 262 from Mechanical Turk) took the second stage survey. Considering 779 recruited participants[1] (331 from students and 448 from Mechanical

[1] There was a recruiting and screening stage before the first stage of data collection to ensure an appropriate sample for the study.

Turk), the overall response rate was 51.9%. Of the 404 participants who took both stages 289 (71.5%) participants' focal virtual communities were individual-oriented virtual communities. As a result of data cleaning, 271 were valid for further analysis. The median tenure in the focal individual-oriented virtual community was 1-2 years. There were slightly more male participants (54%) than female participants (46%). Of the responses, 57% were 18-25 year old, 29% were 26-35 year old, and 9% were 36-45 year old. In terms of native language, 59% was American English, and 33% were languages from Asia (e.g., India, China). See Table 3 for the detailed demographics.

Table 3. Demographics

Gender	Male = 54%	Age	18-25 = 57%
	Female = 46%		26-35 = 29%
Education	Some School, No Degree = 5%		36-45 = 9%
	High School Diploma = 20%		46-65 = 5%
	Associate Degree = 18%	Native Language	American English = 59%
	Bachelor Degree = 35%		Asian Languages = 33%
	Graduate Degree = 22%		Spanish = 3%
Tenure in Virtual Community	Less than 1 years = 3%		Other = 8%
	1-2 years = 41%	Annual Individual Income	Less than $10,000 = 55%
	3-4 years = 35%		$10,001 – $35,000 = 28%
	5 years or more = 21%		$35,001 or more = 17%

Measurement Model Assessment

Evidence of reliability is presented when both the Cronbach's alpha and composite reliability are greater than 0.70 (Bagozzi & Yi, 1988; Garver & Mentzer, 1999). Overall, the measures are reliable, as the composite reliabilities of all the constructs/dimensions ranged from 0.83 to 0.94. See Table 4 for the AVE's, Composite Reliability and Cronbach's Alpha.

Table 4. AVEs, Construct Reliabilities, and Cronbach's Alpha

	AVE	Composite Reliability	Cronbach's Alpha
IPRB	0.8174	0.9471	0.9255
PCV_Copresence	0.5615	0.8318	0.7853
PCV_Culture	0.6978	0.8728	0.7829
PCV_Geographic	0.6360	0.9125	0.8841
PCV_Relationship	0.6942	0.9314	0.9113
PD_Amount	0.7102	0.8800	0.7946
PD_Depth	0.7602	0.9266	0.8945
PD_Honsty	0.7136	0.9085	0.8653
PD_Intent	0.7453	0.8976	0.8288
PD_Valence	0.5937	0.8491	0.8004

A factor analysis was performed to examine the factorial validity of the measures (see Appendix A for factor loadings). We used two approaches for evaluating convergent validity. First, according to (Fornell & Larcker, 1981), the standardized loadings are at least 0.70 or the average variance

extracted (AVE) is greater than 0.50. Second, according to (Gefen & Straub, 2005), all items or dimensions load significantly on their latent constructs (see Table 5 for path coefficients).

Table 5. Path Coefficients of Dimensions on Latent Constructs

Construct	Dimension	Type	Path Coefficients		
			B	t-value	p
Perceived Community Virtuality	Copresence	Reflective First-Order, Formative Second-Order	0.0283	0.8407	NS
	Culture		0.2200	15.1542	$p < 0.001$
	Geographic		0.4528	18.7353	$p < 0.001$
	Relationship		0.5468	19.1366	$p < 0.001$
Private Disclosure	Amount	Reflective First-Order, Formative Second-Order	0.2301	3.4349	$p < 0.001$
	Depth		0.4010	3.2841	$p < 0.01$
	Honest		0.4851	6.7894	$p < 0.001$
	Intent		0.2100	2.3479	$p < 0.05$
	Valence		0.2421	2.7451	$p < 0.01$

In addition, we used two approaches for ensuring discriminant validity. First, the square root of each AVE is larger than its correlation with any other latent constructs/dimensions (Chin, 1998a, 1998b; Fornell & Larcker, 1981) (see Table 6). Second, the correlation of a measurement item with its latent construct/dimension is greater than its correlation with other latent constructs/dimensions (Chin, 1998a, 1998b; Gefen & Straub, 2005). As described, perceived community virtuality is a constructs with formative dimensions and reflective indicators. For reflective indicators, significant item weights on their dimensions were not necessary (Diamantopoulos & Winklhofer, 2001; Petter, Straub, & Rai, 2007). Although the path coefficient of copresence discontinuity was not significant (see Table 5), the dimension was retained to ensure content validity (Bollen & Lennox, 1991; Cohen, Cohen, Teresi, Marchi, & Velez, 1990; Edwards & Bagozzi, 2000; Fornell, Rhee, & Yi, 1991; Petter et al., 2007; Roberts & Thatcher, 2009).

Table 6. Construct Correlations and Square Roots of AVEs

	1	2	3	7	9	10	11	12	13	14	15	16	17	18	19	28
1. Age	N/A															
2. Education	0.38	N/A														
3. Gender	-0.06	-0.08	N/A													
7. IPRB	-0.22	-0.07	0.05	0.90												
9. Income	0.25	0.25	-0.07	-0.01	N/A											
10. Language	0.21	0.29	0.04	0.05	0.07	N/A										
11. PCV_Copresence	-0.11	-0.26	-0.02	0.14	0.02	-0.14	0.75									
12. PCV_Culture	0.08	0.24	-0.03	0.11	0.01	0.20	-0.02	0.84								
13. PCV_Geographic	0.11	0.30	-0.12	0.06	-0.02	0.04	-0.12	0.47	0.80							
14. PCV_Relationship	0.04	0.18	-0.17	0.16	0.07	0.02	0.19	0.49	0.47	0.83						
15. PD_Amount	-0.02	0.05	0.01	-0.14	0.04	0.02	-0.12	0.16	0.07	0.01	0.84					
16. PD_Depth	0.04	0.18	-0.20	-0.07	0.00	0.12	-0.13	0.22	0.14	0.25	0.43	0.87				
17. PD_Honesty	0.15	0.10	0.13	-0.19	-0.07	0.05	-0.18	0.10	0.19	-0.02	0.22	0.30	0.84			
18. PD_Intent	0.20	0.13	0.15	-0.15	0.12	0.07	-0.10	-0.05	-0.01	-0.08	-0.04	-0.10	0.39	0.86		
19. PD_Valence	0.15	0.15	0.11	-0.17	-0.04	0.16	-0.24	0.02	0.03	-0.13	0.07	0.06	0.34	0.42	0.77	
29. Tenure	-0.27	-0.37	0.06	0.04	-0.01	-0.18	0.10	-0.14	-0.25	-0.25	0.06	-0.21	-0.06	-0.09	-0.04	0.04

The VIFs for the dimensions in the perceived community virtuality and private disclosure constructs ranged from 1.11 to 1.58 and were well below the 3.3 cut-off criterion (Diamantopoulos & Siguaw, 2006; Petter et al., 2007). Therefore, the formative indicators were not highly correlated.

This study performed a marker variable test to assess the threat of common method variance, as suggested by Lindell and Whitney (2001). Two variables were expected to have no relationship with the constructs of interest: (1) satisfaction with car insurance company; and (2) intention to take a long trip soon. The smallest correlation was 0 (second marker variable with the intent dimension in private disclosure). The result suggested that common method bias is not a serious concern.

Structural Model Assessment

Partial least square was used to evaluate the research model and test the hypotheses. To examine the hypotheses, the significance of the path coefficients was assessed through bootstrapping of 1500 subsamples (Chin, 1998a, 1998b). The results are summarized in Figure 2 and Table 7. The research model explained 21.4% of the variance in private disclosure and 3.0% of the variance in the information privacy risk beliefs. Perceived community virtuality significantly increased individuals' information privacy risk beliefs (β = 0.173, t = 4.233), which significantly decreased individuals' intention to disclose private information (β = -0.198, t = 2.193). None of the control variables has significant effect on private disclosure.

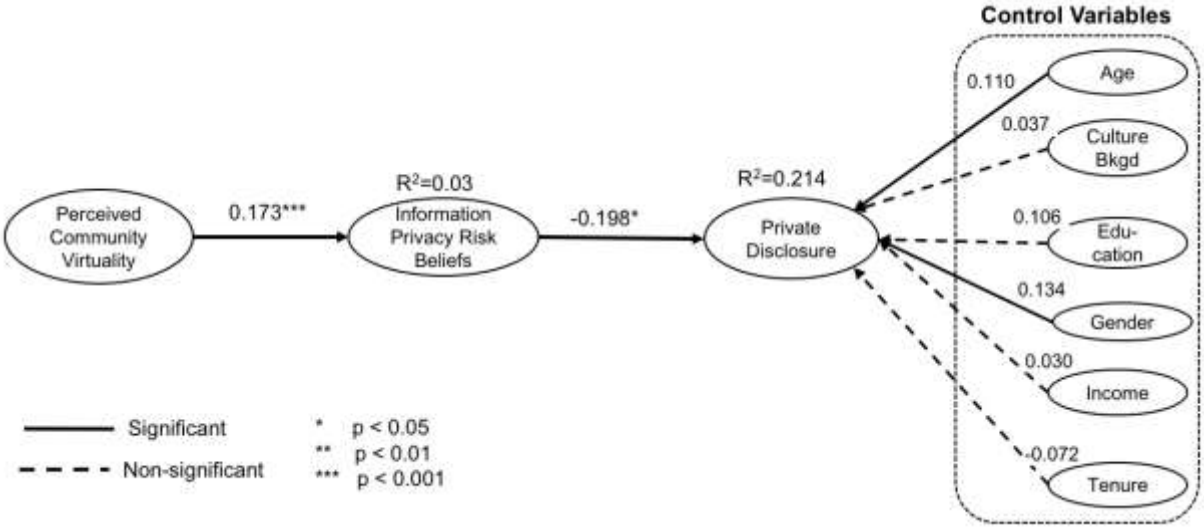

Figure 2. Results of Path Analysis

Table 7. Summary of Hypotheses Testing Results

Hypo-thesis	Relationships between Constructs (Relationship Direction)	Results	Support
H1	Perceived Community Virtuality → Information Privacy Risk Belief (+)	β = 0.173 t = 4.233	Supported (p < 0.001)
H2	Information Privacy Risk Belief → Private Disclosure (-)	β = -0.198 t = 2.193	Supported (p < 0.05)

DISCUSSION

Hypothesis 1 indicates that given the context of individual-oriented virtual communities, individuals would assess information privacy risk beliefs based on their perceptions of various aspects of the community's virtuality. Our findings suggest that, when an individual perceives the community as highly virtual (e.g., community members are not friends in their physical life, are from different locations, represent different cultures, and/or do not feel as if they are together), the individual will perceive a high level of information privacy risk beliefs. Hypothesis 2 predicted that information privacy risk beliefs positively influence private disclosure. This finding shows that the theoretical framework of private disclosure in prior research (e.g., Posey et al. 2010) holds for the individual-oriented virtual community context.

IMPLICATIONS

Based on the notion of discontinuities, this study developed the perceived community virtuality construct. Among the four dimensions, culture virtuality, geographic virtuality, and relationship virtuality load significantly on the perceived community virtuality construct. This result implies that individuals' perceptions on these three dimensions have effects on their assessment of how virtual their communities are. However, the co-presence dimension does not load significantly on the perceived community virtuality construct. One of the reasons may be the fact that our sample participants are mainly from social networking sites. The result from our research provide suggestions to future research for collecting data from a variety of virtuality types ranging from high co-presence (e.g., MetaWorld or Second Life) to low co-presence (e.g., online forums).

Second, the finding from this study reveals that different aspects of perceived community virtuality may increase an individual's information privacy risk beliefs. In other words, when an individual perceives that his/her virtual community members' cultural background, geographic location, and/or the relationship networks are different from his/her physical life, the individual may consider higher information privacy risks in the virtual community. Relatively fewer research regarding the antecedents of information privacy risk beliefs discussed the effect of community environment on individual privacy risk beliefs. The result of this study offers an interesting research perspective to the extant research.

In addition to theoretical contributions, there are also implications for practice. The results suggest virtual community platform organizations how to mitigate individuals' information privacy risk beliefs. This study found for our sample that the higher the perceived community virtuality the

stronger the information privacy risk beliefs, which further decrease private disclosure. Therefore, for organizations that host virtual community platforms to encourage community interactions among community users, these organizations should develop initiatives to decrease individuals' perceptions of a community's virtuality and mitigate individuals' information privacy risk beliefs. In addition, the research results suggest how to decrease individuals' perceptions of a community's virtuality. The result shows that an individual's perception of community virtuality is comprised of his/her assessment of four discontinuities, including co-presence, culture, geography, and relationship discontinuities. These four discontinuities provide organizations that host virtual communities guidance regarding how to develop initiatives that decrease individuals' perceptions of a community's virtuality.

For example, to mitigate the co-presence discontinuity, organizations could design tools for individuals to encourage instant chatting, sound sharing, and video meetings. Not only these tools should facilitate synchronous communications, the design of these tools should allow individuals to see, to hear, or to feel what their communication counterparts experience in real time. These tools may also mitigate individuals' perception of geography discontinuity. To mitigate the culture discontinuity, organizations consider providing instant language translation tool and embedding the tool in instant chatting. Building an inclusive community culture may also help mitigate culture discontinuity. To mitigate the relationship discontinuity, organizations could encourage individuals to invite their friends in their physical life to become individual-oriented virtual community members or provide opportunities to have Face Time chat sessions to increase familiarity and build relationships.

Limitations and Future Research

First, the findings cannot be extended beyond the boundary of the sample (individual-oriented virtual communities). Perceived community virtuality captures an individual's perception of discontinuities in individual-oriented virtual communities (i.e., social networking sites). However, other types of virtual communities are not evaluated and examined in this study. Future research could examine how community virtuality may be applied to other virtual communities (e.g., SourceForge or metaworld).

Another characteristic of the sample to consider is the native language of the participants. The participants' native languages are mainly languages in (American) English (59%) and Asia (33%). Therefore, the applicability of the findings to groups other than these two may be limited.

Steps were taken to control for common method variance in the research design and in the data analysis to ensure that common method bias was not a concern in the data. However, a longitudinal research design could further validate the casual relationships.

CONCLUSION

This study investigated how individual-oriented virtual community members perceive their community environment and cope with threats to their privacy. The research model proposed that perceived community virtuality that may influence an individual's evaluation of privacy risks, which in turn influence individual private disclosure. From a practical standpoint, this study

provides guidance to virtual community platform organizations on potential ways to encourage users to share private information as a mechanism to increase their community population.

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APPENDIX A

MEASURES

Items and factor loadings are listed in the Table A1, A2, and A3. SPSS was used for the Factor analysis (a principal components analysis with Varimax rotation) was used (Gefen & Straub, 2005; Rai, Patnayakuni, & Seth, 2006). For second-order constructs, the items were grouped under their respective second-order construct for factor analysis (as demonstrated in Rai et al. 2006). An item was retained if its loading was above 0.6 on the latent construct/dimension and below 0.4 on the other constructs/dimensions (Hair, Anderson, Tatham, & Black, 1998).

Table A1. Perceived Community Virtuality (Developed)

Items and Factor Loadings

Construct: Dimension	**Question**	**Item #**	**Geo-graphic**	**Cultural**	**Relation-ship**	**Co-presence**
Perceived Community Virtuality (PCV): Geographic Discontinuity	The majority of virtual community members are in different geographic locations.	PCV 1	.667	.311	.096	.103
	Virtual community members are in a variety of geographic locations.	PCV 2				
	I am geographically far away from the majority of the virtual community members.	PCV 3	.834	.025	.137	-.035
	The majority of virtual community members are in different time zones.	PCV 4	.767	.345	.230	.038
	Virtual community members are in a variety of time zones.	PCV 5				
	I am in a different time zone than the majority of virtual community members.	PCV 6	.862	.076	.210	-.018
	The majority of virtual community members need to go to bed late or get up early in order to have real-time communication with other virtual community members.	PCV 7	.691	.064	.232	-.325
	I need to go to bed late or get up early in order to have real-time communication with the majority of virtual community members.	PCV 8	.682	.064	.271	-.294
Perceived Community	Virtual community members are from a variety of cultural backgrounds.	PCV 9	.105	.794	.143	.031

Virtuality (PCV): Cultural Discontinuity	My cultural background makes me feel like I am an outsider in the virtual community.	PCV 10	Drop			
	The majority of virtual community members have different native languages or dialects from my own.	PCV 11	.302	.654	.351	-.156
	Virtual community members have a variety of native languages or dialects.	PCV 12	.175	.832	.256	-.049
	If you are reading this, please do not answer and continue to the next question (i.e., "the majority of...").	PCV 13	N/A			
Perceived Community Virtuality (PCV): Relationship Discontinuity	The majority of virtual community members have never met each other face to face.	PCV 14	.228	.220	.733	.117
	I have never met the virtual community members face to face.	PCV 15	.261	.067	.813	.062
	Virtual community members do not know who each other really is.	PCV 16	.215	.124	.817	.139
	Virtual community members do not know who I really am.	PCV 17	.179	.137	.844	.144
	The majority of virtual community members' friends in the virtual community are with different individuals than in their physical life.	PCV 18	.054	.239	.749	.021
	Members in the virtual community differ from the people I know in my physical life.	PCV 19	.179	.126	.784	.012
Perceived Community Virtuality (PCV): Copresence Discontinuity	I use instant-messaging tools to talk with virtual community members frequently. (r)	PCV 20	Drop			
	I use chat rooms to talk with virtual community members frequently. (r)	PCV 21	Drop			
	I am usually aware of who is logged in to the virtual community. (r)	PCV 22	-.023	-.017	.043	.790
	I pay attention to others' online or offline status in the virtual community. (r)	PCV 23	-.022	.025	-.026	.862
	I find that virtual community members respond to my private messages quickly. (r)	PCV 24	-.118	.000	.168	.749
	I find that virtual community members respond to my posts quickly. (r)	PCV 25	-.068	-.073	.156	.634

Table A2. Private Disclosure (Developed)

Items and Factor Loadings

Construct: Dimension	Question	Item#	AMT	DPT	HON	INT	VAL
Private Disclosure (PD): Amount	I do not often talk about myself in the virtual community. (r)	PD1	.900	-.041	.141	.015	.071
	I usually talk about myself for fairly long periods at a time in the virtual community.	PD2	.680	.349	.071	-.075	-.038
	Whenever I talk about myself, I make the conversation short. (r)	PD3	Drop				
	I often talk about myself in the virtual community.	PD4	.836	.348	.046	.003	-.013
	I often discuss my feelings about myself in the virtual community.	PD5	Drop				
Private Disclosure (PD): Depth	I intimately disclose who I really am, openly and fully in my conversation in the virtual community.	PD6	.208	.844	.119	.034	.071
	I often disclose intimate, personal things about myself without hesitation in the virtual community.	PD7	.151	.876	.139	-.024	-.002
	I feel that I sometimes do not control my disclosure of personal or intimate things I tell about myself in the virtual community.	PD8	.042	.799	.070	-.120	-.054
	Once I get started, I intimately and fully reveal myself in the virtual community.	PD9	.184	.839	.152	-.088	-.057
Private Disclosure (PD): Honesty	I always feel completely sincere when I reveal my own feelings and experiences in the virtual community.	PD10	Drop				
	My disclosures in the virtual community are completely accurate reflections of who I really am.	PD11	.071	.223	.801	.147	.128
	I am not always honest in my disclosures in the virtual community. (r)	PD12	.053	-.009	.781	.092	.086
	My statements in the virtual community about my own	PD13	.131	.195	.809	.145	.106

	feelings, emotions, and experiences are always accurate self-perceptions.						
	I am always honest in my disclosures in the virtual community.	PD14	.048	.104	.838	.227	.090
	If you are reading this, please do not answer and continue to the next question (i.e., "When I...").	PD15	N/A				
Private Disclosure (PD): Intent	When I express my personal feelings in the virtual community, I am always aware of what I am doing and saying.	PD16	-.004	-.132	.250	.738	.199
	When I reveal my feelings about myself in the virtual community, I consciously intend to do so.	PD17	.006	-.018	.189	.835	.160
	When I am disclosing in the virtual community, I am consciously aware of what I am revealing.	PD18	-.054	-.063	.134	.868	.214
Private Disclosure (PD): Valence	I usually disclose positive things about myself in the virtual community.	PD19	.061	.133	.180	.173	.766
	I normally reveal “bad” feelings I have about myself in the virtual community. (r)	PD20	Drop				
	I normally express my “good” feelings about myself in the virtual community.	PD21	.000	.123	.292	.076	.744
	On the whole, my disclosures about myself in the virtual community are more negative than positive. (r)	PD22	-.032	-.375	-.013	.152	.700
	On the whole, my disclosures about myself in the virtual community are more positive than negative.	PD23	.000	-.066	-.012	.235	.848

Table A3. Items for Information Privacy Risk Beliefs

Construct	Questions	Item#
Information Privacy Risk Beliefs (Malhotra et al. 2004)	In general, it is risky to give my private information to virtual community members.	IPRB1
	There is a high potential for loss associated with giving my private information to virtual community members.	IPRB2
	There is too much uncertainty associated with giving my private information to virtual community members.	IPRB3
	Sharing my private information in the virtual community involves many unexpected problems.	IPRB4

Control Variables:

Age: 18-25; 26-35; 36-45; 46-55; 56-65; other.

Cultural Background: native language? Arabic; Chinese; English; French; Hindi; Korean; Portuguese; Spanish; other, please specify _____.

Education: highest level of education attained? Some school, no degree; High school diploma; Associates degree; Bachelor's degree; Graduate degree.

Gender: male; female; other.

Income: Annual income in US$? Less than $10,000; $10,001 - $35,000; $35,001 - $60,000; $60,001-$85,000; $85,001 − $110,000; $110,001 or more.

Tenure in the Virtual Community: Years participated in virtual community? Less than 1 year; 1-2 years; 2-3 years; 3-4 years; 4-5 years; 5-6 years; 6-7 years; 7 or more).

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BEEN THERE, DONE THAT: HOW FACULTY WORK EXPERIENCE IMPACTS STUDENT EVALUATIONS OF TEACHING

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ABSTRACT

Within an ever-changing marketplace, along with the continued evolution of accreditation standards, those chosen to lead the college business classrooms are being expected to be a combination of industry experts and teachers…all in an effort to yield the best educational outcome possible. While traditional qualifications such as research and teaching accomplishments are still being sought, this increase in industry qualifications raises the question of whether those hired based on industry experience are as effective in the classroom as their more traditionally trained counterparts. Using 355 sets of students' evaluations of business classes from three public southwestern universities with AACSB accreditation, matched with career information about the respective instructors, this study sought to verify if having industry experience positively impacts classroom effectiveness as well as if years of teaching experience, level of one's degree, and whether one is currently in an administrative role with their university impacts the student ratings of the instructor. Results supported some hypotheses and previous research while not supporting others. As industry experience was predominately found to not improve one's effectiveness, the results raise questions for hiring officials and university leadership.

Keywords: Management Education and Careers, Classroom Management, Academic Career Development, Student Evaluations of Teaching

We learn from experience that men never learn from experience.
~~George Bernard Shaw

INTRODUCTION

The field of business education has long been a complex and ever-evolving area of the college campus: for what is it precisely that we are preparing our students? An even bigger mystery has been who is exactly the best qualified to be teaching business students in the classroom. Through the analysis of student evaluations of teaching, the current study works to confirm if having industry experience positively impacts one's ability to successfully teach in the business college classroom. This study also looks to confirm the impact of teaching in regards to years of teaching, level of degree, and having an administrative role on the campus.

BACKGROUND

For the business college, distinct changes have occurred in the type of individual being sought to teach since the American Assembly of Collegiate Schools of Business (today known as The Association to Advance Collegiate Schools of Business or AACSB), invited its original sixteen institutions for membership in 1916 (Culligan, 2002). At the time, it was questioned if the "man

of business" even needed to attend college (Clark, 2005). At the same time, the newly formed American Association of University Professors (AAUP), in an effort to distance higher education from being a "business venture" extolled the need to attract those with the "highest ability, of sound learning, and of strong and independent character. This is the more essential because the pecuniary emoluments of the profession are not, and doubtless never will be, equal to those open to the more successful members of other professions" (AAUP, 1915, p. 21).

While it was in the 1960s that a terminal degree, most commonly Ph.D., was needed to attain the position of an assistant professor, it was not until 1993 were definitive definitions of academic and professional qualifications were articulated (Gitlow, 1993). As expected, academics were required to hold a doctorate in the field in which they were teaching and for those teaching without a doctorate, it was "substantial specialized coursework" was needed for employment, not industry experience (p. AACSB, 1995). Fast-forwarding to 2007, AACSB itself published a document entitled *Becoming a Business Professor* in which, while extolling the freedom of position and lucrative monetary rewards, pointedly stated for those interested in academia, "There also is no specific requirement to have business work experience. However, students who do not have a business background or degree will likely have to take foundation masters courses in business." (p.2). Today though, one need only quickly glance through position postings for assistant professors in essentially any field of business to quickly see that many colleges seek significant industry experience. In fact, a formal survey of job postings revealed that 38% of job postings sought a candidate who in addition to the "traditional" qualifications, had industry level experience (Finch et al., 2016). With the impending dearth of new business professors which has been consistently predicted by AACSB as far back as 1958 (Owens, 2008), the addition of five to ten years of industry experience would seemingly raise the average age of a freshly minted Ph.D. and work against the need to bring quality academics into the classroom.

Theory Versus Practice

The debate between theory and practice has taken place all the way back to the origins of the business school. In the United States, since the founding of The Wharton School of Finance and Commerce in 1881, business schools worked to teach and conduct research (Khurana & Spender, 2012). As time progressed, business schools worked to move away from being perceived as trade schools and worked to focus more on academic status, publication in peer-reviewed journals, and requiring doctorates for teaching positions (Khurana, 2007). At the same time that these academic qualifications were being raised, so was the question of how effective academics can be in preparing students for the "real world" of business (Porter & McKibbin, 1988), questioning how well being a content expert is on one's ability to teach (Bonner et al., 2020). To many, having industry experience in the classroom allows for more of a reality-based education as it is assumed that one with industry experience can use their experiences to make the theories of business "come alive" to the students (Sull, 2016) and that one's experiences in industry can aid students in learning how to solve real-world problems (Gootzeit, 2014).

While there is some evidence that having industry experience does positively impact the content of a given course (Lewis & McKinzie, 2019), there is little evidence that suggests that industry experience positively impacts one's teaching ability (Burns, 2012). The argument has been offered that business persons are likely to not understand what it is students need to know (Patrick, 1969)

and that the industry experience of the academic may lead to a one-sided focus which may hinder the development of the student's skill set (Bledow et al., 2017; Collinson & Tourish, 2015; Lewis, 2019). Despite having industry experience, as one is now teaching and is no longer in industry, the relevancy of the prior experience can be rather diminished over time (Lipinksi & Kosicek, 2016). An exception to this is found in the faculty designated as Executive in Residence, someone who is an executive expert within their field who can offer specialized knowledge to the organization with which they are working (Maginnis & Weidman, 2017). When placed in an educational setting, these individuals are typically not within the tenure system and work on a contractual basis extending no more than five years (AACSB, 1995).

It is this trend of seeing faculty with industry experience that led to this research. If universities are looking for faculty with industry experience, is there any evidence that this experience impacts one's teaching ability? To augment that, if industry experience might have an impact on one's teaching ability, does one's length of teaching have an impact? Research on industry experience (HI) and years of teaching (HT) indicated that there was no impact or mixed results. We chose to take a position that the longer one had worked in industry or taught, the better their teaching. This analysis consisted of comparing numerical independent (years) and dependent (SET scores) variables thus allowing us to use correlations and significance of correlations for the analysis.

> ***HI.#:*** *Greater length of industry experience has a positive impact on teaching evaluations.*

> ***HT.#:*** *Greater length of teaching experience has a positive impact on teaching evaluations.*

Accreditation Requirements

Entering into this discussion (as well as being viewed by many as the cause of this issue), AACSB has provided guidance to delineate among those who serve in mainly academic roles in research and scholarship under the titles of *Scholarly Academic* and *Scholarly Practitioners*, and those who serve in applied and practice roles under the titles of *Instructional Practitioners* and *Practice Academics* (AACSB, 2017). While these classifications do provide for the hiring of those initially qualified based on academic preparation or professional preparation, the definitions of the categories do not lend themselves to Universities either needing to nor being required to add significant industry experience to all faculty hires. On the contrary, the accreditation standards, though differing models can be used, lean toward the hiring of those who will maintain Scholarly Academic status which places more emphasis on academic preparation and continuing scholarly production. This tendency towards terminal degrees led us to also include the level of degree as a factor in this research. However, with the dearth of research on the level of degree (D), we chose to support the AACSB trend that supports the higher level of degrees in academia and took the position that this would positively impact teaching. All the research we uncovered indicated that serving in administrative (A) roles has a negative impact on teaching. Our second analysis compared the categorical independent variables of the level of degree and administrative role on the numerical dependent variables. For this analysis, we ran an ANOVA and *t*-tests assuming unequal variances for our modeling.

> ***H.#.D:*** *A higher the level of degree obtained has a positive impact on teaching evaluations.*

H.#.A: *Not being in an administrative role has a positive impact on teaching evaluations.*

How to Measure Teaching – Dependent Variables

While this paper does not join the debate on the effectiveness of student evaluations of teaching (SET) or use of SET results in faculty annual evaluations, as the source of data was drawn from SET, a brief discussion of previous research in business colleges that used SET is appropriate. The earliest found study dates to 1971 when, while studying pre-vocational business teachers, it was found that neither years of teaching experience nor years of industry experience had any significant relationship to SET (Brown, 1971). Ironically, in a 1979 study, it was found that when students themselves gained industry experience, their own industry experience was not found to impact their evaluations of their instructors (Firth, 1979).

In a study published in *The Journal of Education for Business*, researcher Barth (2008) investigated SET from his own institution of Georgia Southern University, finding that the main determinate of an instructor's overall rating was found in the quality of instruction (involving such areas as preparation, clarity of presentation, course objectives, and relevance of material) and that the difficulty rating of the instructor can be offset by the enthusiasm the professor exhibits for the topic and their willingness to work with students outside of class. These findings echoed the findings of Feldman (1998) that course organization and preparation are most important to producing student learning.

The actual teaching experience of the instructor seems to be as controversial as a factor as evaluations themselves. While some research shows that years of teaching experience is highly significant in student evaluations (Feldman, 1983; McPherson, 2006) other research has shown that the longer a professor has been teaching, the less likely they are to get high SET (Zabaleta, 2007). While the "credibility" of the instructor to the student has been shown to be significant (Fandt & Stevens, 1991), the experience of the teacher has been found in other research to only be significant when the class is a lower division "principles" class and the experience of the instructor is not important when discussing upper-division courses (McPherson, 2006).

With one's increased experience often comes administrative responsibilities. As this study was looking into both industry and teaching experience, we felt it prudent to consider having an administrative role. Previous studies show faculty who move into administrative positions do so somewhat unwillingly (Bolton, 1996; Gallos, 2002), find the time demands difficult (Standifird, 2009), and experience overall difficulty in balancing the faculty and administrative roles (Gmelch, & Miskin, 1993; Jacobe, 2013). Overall, holding a college administrative role in addition to teaching courses negatively impacts SET (Garcia-Gallego et al., 2015).

METHODS

Data Collection

The data utilized in this study is representative of three separate universities, part of a larger university system, in the southwest United States. These institutions represent each of the research

tiers (R1, R2, and R3) individually and all were AACSB accredited at the time of data collection. The SETs were made publicly available by the institutions and are representative of courses designated within the respective college of business. All analysis in this research was done using SAS Studio with MS Excel 365 to format data and tables.

Student Evaluation of Teachers (SET) data

The five questions which were common to all three institutions were utilized. The evaluations utilized Likert Scaling ranging from 1 (strongly disagree) to 5 (strongly agree). A higher SET reflects positively on the instructor. All evaluations were administered electronically at the end of the semester with the means for each question and the number of respondents collected for each course/instructor. While 355 evaluations were collected representing 355 different course sections, the data represents 107 unique instructors and 124 unique courses at all academic classifications of undergraduate (18 lower, 283 upper) and master's (54) levels. Most of the courses were management (159) with about equal representation from accounting (67), finance/economics (50), and marketing (63). The smallest area represented was information systems (16). The available data did not include individual student responses nor qualitative data. The five metrics were:

1. The instructor clearly defined and explained the course objectives.
2. The instructor was prepared for each instructional activity.
3. The instructor communicated information effectively.
4. The instructor encouraged me to take an active role in my own learning.
5. The instructor was available to students either electronically or in person.

Independent Variables

For information on the evaluated faculty members, we quantified information from the instructor's CV's as made public on their institution's website (the three institutions in question require faculty to provide a current CV) so all CVs were available to be recorded. The researchers quantified available data such as years of industry experience, years of teaching, level of highest degree obtained, and administrative roles on campus (if they were in that role at the same time as the course which was evaluated). The qualitified data was matched to the time of the SET.

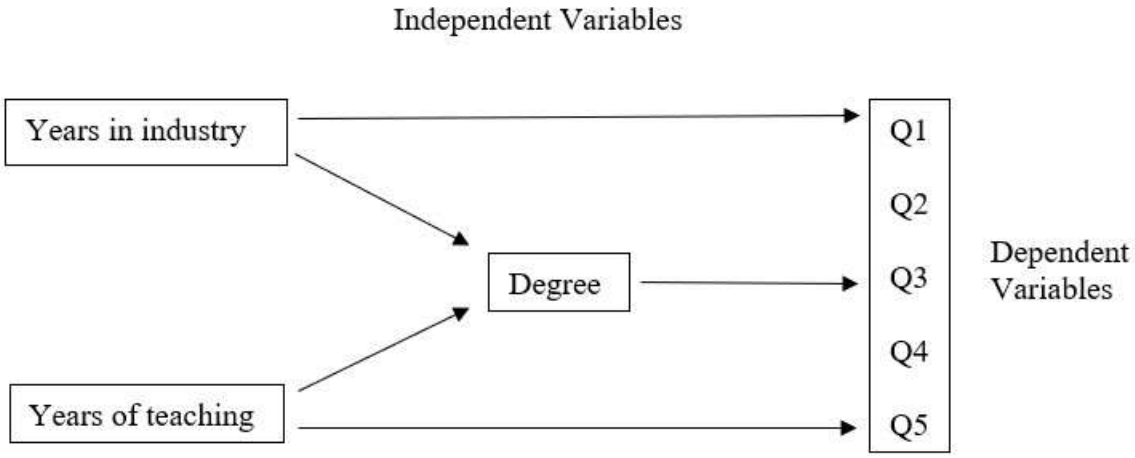
Approach

We considered the use of hierarchical level modeling (HLM) in this research as the level of degree could be viewed in levels (pre-graduate, masters, and doctoral). We did find significance for the variance of intercepts at level 1, but not at level 2 for any of our SET questions. We also found that our intraclass correlations (ICC) were smaller than 10% indicating that such grouping was not working (no differences in the scores within each group). Our final regression results mirrored the significance of the results we obtained below with slight insignificant numerical differences in the regression equations. We also conducted clustering analysis tests on the SET using the level of degree as well as if they were in an administrative role, yet no cluster met the criterion for splitting.

Model

The first set of hypotheses used only the numerical independent variables while the second used only the categorical independent variable. The final grouping used combined variables created from the binary representation of the categorical variables multiplied by one of the numerical independent variables. We took on this inquiry primarily to determine if the directionality (positive or negative) of impact would remain consistent once combined. Figure 1 depicts the model we used which led to the development of our hypotheses.

Figure 1: *Research Model*



Preliminary variable analysis

All of the dependent variables were slightly skewed left (between – 1.53 and -0.50). The independent numerical variables ranged from 0 to 40 for teaching and 0 to 50 for industry experience. There were a vastly larger number of instructors with no industry experience (72) than those whose CV reflected no teaching experience meaning that they had yet to complete one full year of teaching (2). Both of these independent variables were skewed right (between 0.91 and 0.95). All passed the assumptions for Normality allowing us to run t-tests, ANOVA, and regression.

Our other independent variables were our categorical variables. Of the participants teaching doctoral level, 54 had an administrative role while 205 did not. Thirty-four master's degree level had an administrative role; sixty did not. The respondent teaching undergraduate-level classes did not have an administrative role.

MODELING RESULTS

We present our modeling results in the same order we presented our hypotheses beginning with the numerical independent variables, categorical independent variables, and then the combined independent variables. We begin with industry experience and then with years teaching. We then

discuss the level of degree and then the administrative role. Finally, we present the entirety of the models.

Numerical Independent Variables

One of the first things we noticed was the positive, yet weak, correlations between the years of industry experience and the SET. Also of note was the weak yet negative correlation with the years teaching (opposite the hypothesis). Although significance is shown in Table 1, these relationships are explained with modeling later in this paper.

Table 1: Correlations of IVs and DVs

	Industry Experience	Years Teaching	1. Objectives	2. Prepared	3. Communicated	4. Encouraged	5. Available
Industry Experience	1						
Years Teaching	0.0217	1					
1. Objectives	0.0872	-0.1596 **	1				
2. Prepared	0.0792	-0.0762	0.8598 **	1			
3. Communicated	0.0736	-0.1573 **	0.9145 **	0.8417 **	1		
4. Encouraged	0.0797	-0.0800	0.7920 **	0.7900 **	0.826 **	1	
5. Available	0.1060 *	-0.1159 *	0.7739 **	0.7880 **	0.776 **	0.776 **	1

** $p \leq 0.05$; ** $p \leq 0.01$*

Categorical Independent Variables

First, we will present the results for the level of degree obtained followed by the results for the instructor being in (or not) an administrative role at the time they were teaching. As a reminder, there was only one person (having two SETs/data points) with an undergraduate degree. Although there were 27 students who responded, thus allowing us to conduct statistical analysis, we felt that there may be sample bias with only one instructor reporting. Therefore we suggest that the lower mean scores in Table 2 for those with only a Bachelor's degree (B.S. in Accounting) may be an anomaly. The only other significant result noted was that those instructors with a Master's degree communicated more effectively than those with a Doctoral degree - which was not what we hypothesized. The effect size of 0.21 (Cohen's D) is relatively small (Sawilowsky, 2009).

Table 2: SET Controlling for Degree Level

		Mean	one tail *t*-test			
			Undergraduate		Masters	
			sig	D	sig	D
1. Objectives	Undergraduate	3.720				
	Masters	4.405	0.0044	1.48		
	Doctorate	4.350	0.0076	1.35	0.1038	0.15
2. Prepared	Undergraduate	4.000				
	Masters	4.456	0.0314	1.89		
	Doctorate	4.433	0.0292	1.91	0.28	0.07
3. Communicated	Undergraduate	3.500				
	Masters	4.346	0.0024	1.74		
	Doctorate	4.258	0.0086	1.51	**0.0467***	0.21
4. Encouraged	Undergraduate	3.825				
	Masters	4.388	0.0051	2.04		
	Doctorate	4.381	0.0066	1.97	0.4319	0.02
5. Available	Undergraduate	4.055				
	Masters	4.456	0.0466	1.66		
	Doctorate	4.415	0.0581	1.54	0.1498	0.12

** $p \leq 0.05$*

Research indicates that when one has an administrative role, their SET is lower than those without administrative roles. Our results showed the opposite to be true.

Table 3: SET Controlling for Administrative Role

		Mean	**One tail *t*-test sig**	Cohen's D
1. Objectives	Yes	4.4127	0.0625	0.20
	No	4.344		
2. Prepared	Yes	4.4877	**0.0445***	**0.21**
	No	4.4194		
3. Communicated	Yes	4.3631	**0.0172***	**0.28**
	No	4.2487		
4. Encouraged	Yes	4.4183	0.0917	0.17
	No	4.3671		
5. Available	Yes	4.4945	**0.0097****	**0.30**
	No	4.401		

** $p \leq 0.05$; ** $p \leq 0.01$*

Combined Independent Variables

The next four tests use all of our variables. Due to the multicollinearity that resulted between these combined variables and the numerical independent variable which helped create them, we could not model these new variables and their associated independent variable in a regression model at the same time. We ran single variate linear regressions (SLR) with the numerical independent time variable (confirming our correlations) and backwards elimination combined multivariate linear regression (CLR) with the newly created combined variables.

Time in industry and degree, HI.#.D

We began with testing the five SETs against time in industry. In all models, the resulting model's adjusted *R*-square was weak. The SLR (using time in industry) and the CLR (using Master's degree only) were both statistically significant (Table 4). The results from testing showed that the instructor's availability was stronger when the instructor had a Masters' degree than when the instructor had a Doctoral degree.

Table 4: Regression Degree and Time in Industry

Model	Equation	Adj R-square	*p*-value
SLR	SET5 = 4.3896 + 0.0029*Time Industry	0.0084	0.0459
CLR	SET5 = 4.4074 + 0.0037*Master's*Time Industry	0.0118	0.0230

Time in industry and administrative role, HI.#.A

The SLR and correlation analysis show that being in an administrative role improves SET scores. Additionally, we were also able to show that when accounting for longer time in industry and being in an administrative role, the SET scores were larger for all five of the SET than when compared to those instructors not in an administrative role (Table 5). This is opposite of our original hypothesis.

Table 5: Regression Administrative Role and Time in Industry

Model	Equation	Adj *R*-Square	*p*-value
SLR	SET5 = 4.38964 + 0.0029*Time Industry	0.0084	0.0459
CLR	SET1 = 4.3362 + 0.0072*Admin*Time Industry	0.0243	0.0019
	SET2 = 4.4122 + 0.0070*Admin*Time Industry	0.0290	0.0008
	SET3 = 4.2477 + 0.0085*Admin*Time Industry	0.0231	0.0024
	SET4 = 4.3633 + 0.0048*Admin*Time Industry	0.0134	0.0164
	SET5 = 4.3969 + 0.0079*Admin*Time Industry	0.0382	0.0001

Time teaching and degree, HT.#.D

As shown here, having a higher level degree and also having more years teaching both have a negative relationship to SET which was opposite our hypotheses. This analysis brings those results

together showing that when combining these two variables, the negative relationship holds (which was opposite our hypothesis).

Table 6: Regression Degree and Years Teaching

Model	Equation	Adj *R*-Square	*p*-value
SLR	SET1 = 4.4443 - 0.0067*Years Teaching	0.0227	0.0026
	SET3 = 4.3763 - 0.0080*Years Teaching	0.0220	0.0030
	SET5 = 4.4783 - 0.0044*Years Teaching	0.0106	0.0290
CLR	SET1 = 4.4193 - 0.0056*Doctorate*Years Teaching	0.0202	0.0042
	SET3 = 4.3509 - 0.0071*Doctorate*Years Teaching	0.0225	0.0027
	SET5 = 4.4749 - 0.0049*Doctorate*Years Teaching	0.0189	0.0055

Time teaching and administrative role, HT.#.A

Continuing with this trend, considering the administrative role and time teaching, the model combined negative variables and kept not being in an administrative role in the model. Combining these variables showed a negative relationship.

Table 7: Regression Administrative Role and Years Teaching

Model	Equation	Adj *R*-Square	*p*-value
SLR	SET1 = 4.4443 - 0.0067*Years Teaching	0.0227	0.0026
	SET3 = 4.3763 - 0.0080*Years Teaching	0.0220	0.0030
	SET5 = 4.4783 - 0.0044*Years Teaching	0.0106	0.0290
CLR	SET1 = 4.4209 - 0.0063*Not Admin*Years Teaching	0.0255	0.0015
	SET2 = 4.4713 - 0.0037*Not Admin*Years Teaching	0.0092	0.0395
	SET3 = 4.3575 - 0.0084*Not Admin*Years Teaching	0.0322	0.0004
	SET5 = 4.4768 - 0.0055*Not Admin*Years Teaching	0.0245	0.0018

DISCUSSION

The purpose of this study was to investigate the effect of having industry experience, teaching experience, higher level of degrees, and not being in an administrative role on one's teaching success in the business college classroom, as measured by the SET. In only one variable does our work confirm previous studies (and thus our hypotheses): length of industry experience.

For the remaining conclusions (20), our results indicated the opposite (negative) conclusions we expected given previous studies and industry practices. This study also proves significant to the literature because, while there are a multitude of studies regarding SET, scant look specifically within the college of business. Past this, not only is it the first known study to investigate these specific variables in question but also to address the presumptive solution for placing a stronger emphasis on skill-building and solving real-world problems by hiring faculty with significant

industry experience within the business school. Per the results of this study, academic leaders might want to reconsider their hiring practices.

We began this study with 40 hypotheses. When the results were significant, it showed faculty demographics of 1) longer industry experience, 2) a Master's degree, and 3) serving in an administrative role had a positive impact on the SET (11 hypotheses). It also showed faculty demographics of 1) longer teaching experience, 2) Doctoral degrees, and 3) not serving in an administrative role had a negative impact on the SET (10 hypotheses). The others were not statistically significant in support or denial of the hypotheses. Our results also indicate that when controlling for the level of degree (in HLM) there was no impact on the directionality or significance of our results neither adding or eliminating conclusions nor changing the directionality of the regression equations.

The results of this study mirrored those of the 1971 study by Brown. While within that study, years of teaching experience and industry experience were not found to have a significant impact on SET, the current study did find certain significance, mostly positive for industry experience and negative for teaching experience. Most notably here is that industry experience positively effects primarily one's ratings in relationship to their availability to students. While more investigation is needed into this phenomenon, the explanation might be as simple as one of conditioning. Those traditional to academia, particularly after five years of Doctoral level training, are conditioned to rather odd and unusual working hours and locations. While a traditional academic usually balks at the idea of set hours, someone from industry is most likely accustomed to such requirements and therefore might certainly be more willing to be available when needed. Likewise, one accustomed to industry relationships might simply be more comfortable interacting with students due to a collegial viewpoint whereas a traditional academic might not be able to move past the professor-student roles.

Equally concerning is the level of degree in relation to the classroom. While the Finch et al. study (2016) does indicate that academic qualifications are overall the most important criteria for hiring new faculty, the same study indicates that less than 40% placed having a Ph.D. as the main criteria. Most graduate business programs do not specifically train new academics in how to teach; however, the experience of earning higher degrees certainly influences the manner in which someone is able to teach their subject and can certainly not be substituted with industry level experience during the selection process. However, this study showed that whereas having a Masters' degree results in higher SET than having a Doctoral degree, when combined with years teaching, having a Doctoral degree negatively impacts one's relaying of objectives, effective communication, and availability. This in and of itself may be an indication that we need to re-vitalize our faculty after they have been teaching for a period of time to re-focus on their student interactions – especially those faculty with Doctoral degrees—perhaps by placing them in an administrative role.

Finally, while the results of this study only minimally support the criteria of industry experience in the hiring of professors, it does lend itself to the continued role of Executives in Residence. These instructors generally have a longer time in industry, shorter teaching tenures (five years or less), and tend not to hold Doctoral degrees. If these Executives in Residence were to also hold an administrative position, they would have all the positive attributes covered.

The results indicated positive significance with student ratings and one having an administrative role on campus. This runs counter to the findings of Garcia-Gallego et al 2015. This held true even when modeling as the only independent variable or combining it with time in industry or time teaching. If administrators are receiving higher SET, it would behoove us to research why.

FUTURE RESEARCH

The results of this study, and the overall lack of research into this topic, lend themselves greatly to future studies, benefiting not only the college of business but the campus as a whole. A study attempting to find any confounding variables would be welcome. There are several potential variables that may be appropriate: prior pedagogical training, being a course director, type of course delivery (traditional, hybrid, online, flipped), recency of degree, teaching load, course level (McPherson, 2006), course topic/area, required vs. elective course, class size, and/or the number of previous times one has taught course are a few that come to mind. The timeline and circumstances of how the faculty member became an administrator might also prove most interesting for a better understanding of the found phenomena.

Exploration of other demographics such as gender and age (student and instructor) can not only shed light on how students respond to teachers (thus also extending the literature on SET) but also clarify some of the concerns about the length of teaching service and the relevance of the industry experience of the faculty member. Finally, further investigation is needed to see if the full or part-time status of the faculty affects their overall teaching rating as generally those in part-time positions tend to receive lower teaching evaluations (Garcia-Gallego et al., 2015).

The data used in this study was based on aggregate data by class section. Having data for individual respondents (students) would allow additional research into variability by course type/section.

This study used data from AACSB universities at R1, R2, and R3 public universities in the southwest United States. It might be useful to compare the results of the different levels of research universities. There may be different responses at these different types of universities based on our variables as a more research-focused university may value industry experience less or level of degree more. The criteria of industry experience need also be explored separately from the use of SET. While effective, the use of the SET and all the documented issues with such, limit the results of this study somewhat in the depth of exploration. A deeper investigation into this area is needed, most certainly utilizing student interviews and longitudinal surveys.

CONCLUSION

Given the continued momentum of including industry experience as a criterion for the hiring of new faculty, using SET, we studied the impact of industry experience along with years of teaching experience, level of degree, and administrative role on their impact on student ratings of teaching. We found that having industry experience primarily proved beneficial in one's availability to students. Counter to our assumptions, having longer teaching experience proved detrimental in most of the SET categories. Another hypothesis was believing that higher level degrees and not being in an administrative position would be beneficial; yet, none of these held true. We believe

this study lays the groundwork for a far more detailed study into the actual need for industry experience to be an effective business faculty member and that administrators may need to reconsider the importance of the criteria in the hiring process. As this is a unique analysis as it focuses on the business college, expanding this across many different college types at the same universities would be very insightful to see the impacts.

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