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Identifying Regional Differences in the U.S. Craft Beer Industry: The Case of Southern States

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Abstract

This study examines whether regional differences exist in the U.S. craft beer industry, focusing on states in the American South. Using 2024 state-level data, we compare Southern and non-Southern states on the number of craft breweries per capita, production volume per capita, and economic impact per capita. The results show that Southern states continue to have fewer breweries, lower per capita production levels, and smaller per capita economic impact than the rest of the country. However, the South has grown faster than other regions over the past decade, suggesting the gap is slowly closing. Regression analysis shows that per capita beer consumption is the strongest predictor of how many breweries a state has, while cultural and policy factors help explain why the South still trails other regions. Overall, the findings show that although the South remains behind on key per capita measures, it is expanding more quickly and is becoming a more active part of the U.S. craft beer industry.

Introduction

Beer production in North America began long before Europeans arrived, as Indigenous communities made fermented corn-based drinks (Beer Institute, 2025). European settlers brought their own brewing traditions, and by the eighteenth-century leaders such as George Washington, Thomas Jefferson, and James Madison supported brewing in the colonies (Beer Institute, 2025; National Constitution Center, 2016). Brewing expanded in the nineteenth century when German immigrants introduced new techniques and

opened thousands of breweries in the Midwest. These breweries later became major national brands, including Miller, Pabst, Schlitz, and Anheuser-Busch (History is Now, 2022; Roman, 2025). New technologies, such as refrigeration and rail transport, made wide distribution possible and helped create a national beer market (Anheuser-Busch, 2025a).

The craft beer movement grew as a response to this national consolidation. Many consumers wanted locally made beers with distinct flavors (Garavaglia and Swinnen, 2020). Although craft beer makes up only about 13 percent of U.S. beer volume, it represents nearly one-quarter of retail sales, showing its economic importance (Brewers Association, 2025a). Even so, the craft beer industry differs widely by state and region. These differences include the number of breweries, state laws, and cultural views about alcohol.

In *Entrepreneurship Theory and Practice*, Gohmann (2016) asked a key question: *Why are there so few breweries in the South?* Ten years later, this study examines per capita brewery counts, production volumes, and economic impact figures. Using 2024 state-level data, it evaluates how Southern states differ from the rest of the country and whether their ten-year growth indicates convergence with national norms.

This study uses the U.S. Census Bureau's definition of the American South (U.S. Census Bureau, 2025):

- South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
- East South Central: Alabama, Kentucky, Mississippi, Tennessee
- West South Central: Arkansas, Louisiana, Oklahoma, Texas

The craft beer industry in the American South is shaped by a mix of historical influences, state and local laws, and regional cultural norms. These factors have produced long-standing differences in alcohol consumption patterns and have shaped how the region's craft beer industry has developed. The results of this study may assist

policymakers, industry leaders, and regional planners who aim to support and expand craft brewery growth across Southern states.

The Overall Beer Industry in the United States

According to the *Beer Serves America* study commissioned by the Beer Institute and the National Beer Wholesalers Association in 2024, the U.S. beer industry generates approximately \$471 billion in total economic impact, supports more than 2.42 million jobs, provides \$142.5 billion in wages and benefits, and contributes more than \$58 billion in tax revenues annually (Beer Serves America, 2024). Specialized employment spans agriculture (43,000 jobs), manufacturing (77,000 jobs), brewing and importing (92,000 jobs), distribution (135,000 jobs), and retail (950,000 jobs). With a multiplier of 1.62, each dollar spent in beer production and distribution generates an additional \$144.7 billion in induced economic activity and more than 682,280 jobs (Beer Serves America, 2024).

Main Ingredients and Supply-Chain Mobility

Beer production relies on four core inputs—malt, hops, yeast, and water—coordinated through mature, nationwide supply chains. Malted grains (typically barley, but also corn or rice) are steeped to release fermentable sugars; hops contribute bitterness, aroma, and preservation; and yeast converts sugars to alcohol during fermentation. After aging, finished beer is packaged and sold through state-regulated markets (Home Brewers Association, 2025; Sierra Nevada Brewing Company, 2025). Large producers maintain deep connections with U.S. agriculture; for example, Anheuser-Busch partners with more than 700 domestic farmers and spends over \$700 million annually on rice, hops, corn, and barley (Anheuser-Busch, 2025b).

The United States is the world's leading producer of hops with production concentrated in Washington, Oregon, and Idaho. Five varieties—Citra, Mosaic, CTZ, Cascade, and Simcoe—anchor a large share of beer styles, with usage ranging roughly 0.5–3.0 pounds per 31-gallon barrel depending on style and recipe (Beer Maverick, 2023; Brew Your Own, 2025). Because hops ship efficiently in dried or

pelletized form, breweries are not compelled to locate near hop fields, thus increasing location flexibility for both craft and large producers.

Grain supply chains provide similar flexibility. Idaho, Montana, and North Dakota lead U.S. barley production, and malted barley moves readily through bulk and bagged channels to breweries nationwide (Eddings, 2022; Ellis, 2024). Arkansas, California, Louisiana, Mississippi, Missouri, and Texas dominate U.S. rice production, with logistics likewise optimized for national distribution (U.S. Rice, 2025). Collectively, these supply-chain characteristics also provide location flexibility for both craft and large producers.

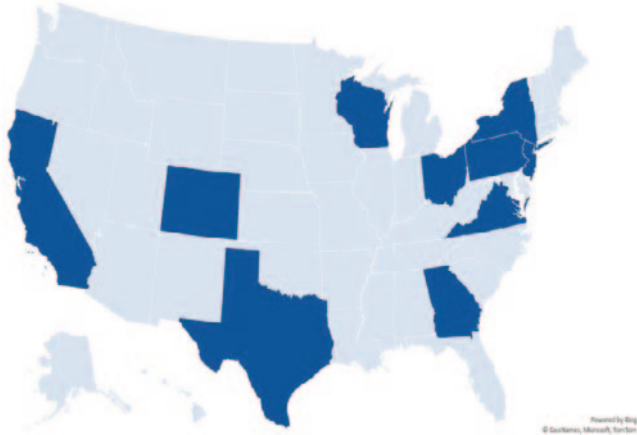
Brewery Site Selection: From Theory to Practice

Alfred Weber's industrial-location framework distinguishes weight-gaining from weight-losing industries and predicts the cost advantages of locating near consumers versus raw materials (Weber, 1929). Because packaging increases weight and volume, beer is weight-gaining, favoring proximity to end markets. Yet the transportability of malt and hops reduces the need for brewery proximity to suppliers, allowing firms to optimize around demand, tourism flows, logistics, and local regulations.

For small craft breweries and brewpubs, two sequential decisions must be made: (1) selecting the community or region and (2) selection a position or location within that community. Input volumes at launch are small, so demand-side factors drive brewery site selection. Tourism-oriented locations illustrate the opportunity: although Myrtle Beach, South Carolina has roughly 400,000 residents (Census Reporter, 2025), it attracts over 17 million visitors annually, supporting ten existing craft breweries and three additional projects, including one at Broadway at the Beach—South Carolina's most visited tourism destination with 13+ million annual visitors (Broadway at the Beach, 2025; Burroughs and Chapin, 2025; Myrtle Beach Chamber of Commerce, 2025; Sneaky Beagle, 2025; and Surface, 2025). As to specific site selection within a community, firms prioritize high-visibility, high-traffic locations with adequate parking and pedestrian access, reflecting their dual identity as manufacturers and hospitality venues.

By contrast, large regional and international brewers optimize for scale and throughput, emphasizing water supply and wastewater capacity, utility reliability, multimodal logistics, labor availability, tax rates, and proximity to packaging and ingredient suppliers (Calagione, 2011; Magee, 2014; Oyer, 2024). These considerations align with the location of major facilities in states such as Colorado, Ohio, Texas, Virginia, California, Georgia, Wisconsin, Pennsylvania, New York, and New Jersey (Eichholz, 2025; Molson Coors, 2025; Anheuser-Busch, 2025c). A mapping of the high-volume beer producing states is provided in Figure 1.

Figure 1: High-Volume Beer Producing States



**Main Components of the Craft Beer Industry
in the United States**

According to the Brewers Association—a nonprofit organization whose purpose is to promote and protect American craft brewers, their beers, and the community of brewing enthusiasts—there were 9,796 breweries in the United States in 2024, including 3,552 brewpubs, 3,936 taprooms, 2,029 microbreweries, and 279 regional breweries. Each brewery type is described below:

- 1. Microbreweries – A brewery that produces fewer than 15,000 barrels of beer per year and sells 75 percent or more of its beer off-site.
- 2. Brewpubs – A restaurant-brewery that sells 25 percent or more of its beer on site and operates significant food services. The beer is brewed primarily for sale in the restaurant and bar, and is often dispensed directly from the brewery’s storage tanks.
- 3. Taproom Breweries – A professional brewery that sells 25 percent or more of its beer on-site and does not operate significant food services. The beer is brewed primarily for sale in the taproom, and is often dispensed directly from the brewery’s storage tanks.
- 4. Regional Breweries – A brewery with an annual beer production of between 15,000 and 6,000,000 barrels.

The above brewers may sell beer to-go and/or distribute to off-site retailers for resale, depending upon state law (Brewers Association, 2025b). Over the last six years (2019 – 2024), the industry experienced growth in all brewery categories:

- Brewpubs: 381 new outlets (up 12%)
- Taprooms: 845 new outlets (up 27%)
- Microbreweries: 112 new outlets (up 6%)
- Regional Breweries: 39 new outlets (up 16%)

Annual data for the last six years is provided in Table 1. Since the “Taproom” count was introduced in 2019, Table 1 begins with data from that year.

Table 1: U.S. Craft Brewery Count (2019-2024)

Type	2019	2020	2021	2022	2023	2024	6-Year Change
Brewpubs	3,171	3,309	3,337	3,511	3,502	3,552	+381 +12%
Taprooms	3,091	3,389	3,643	3,771	3,910	3,936	+845 +27%
Micro Breweries	1,917	2,003	2,007	2,132	2,092	2,029	+112 +6%
Regional Breweries	240	220	223	261	257	279	+39 +16%

Source: Brewers Association, 2025b.

The Brewers Association (2025c) notes the following common traits of craft beer producers in the United States:

- Craft brewers are small brewers (fewer than 6 million barrels per year).
- The hallmark of craft beer and craft brewers is innovation. Craft brewers interpret historic styles with unique twists and develop new, unprecedented styles.
- Craft beer is generally made with traditional ingredients like malted barley, though interesting and sometimes non-traditional ingredients are often added for distinctiveness.
- Craft brewers tend to be very involved in their communities through philanthropy, product donations, volunteerism, and sponsorship of events.
- Craft brewers have distinctive, individualistic approaches to connecting with their customers.
- Craft brewers maintain integrity via what they brew and their general independence from a substantial interest by a non-craft brewer.
- The majority of Americans live within 10 miles of a craft brewer.

Methodology

Data Collection

The Brewers Association (2025d) publishes an annual update of state-by-state data on its website. Given the legal drinking age in each state is 21 years old, the number of per capita breweries and the number of per capita barrels of beer produced are calculated per 100,000 persons age 21 and older (i.e., the legal drinking age). The following information was collected on a per-state basis from the Brewers Association database:

1. Total number of craft breweries in state
2. Number of craft breweries per capita (of individuals age 21 and older)
3. Production – barrel volume
4. Production – gallons per capita (of individuals age 21 and older)

5. Total economic impact of craft brewing industry
6. Economic impact of craft brewing industry per capita (of individuals age 21 and older)

To provide data on recent growth, the number of breweries per-state for 2014 was collected and matched with the 2024 data to provide a ten-year longitudinal analysis. The data set used in this study is provided in Appendix 1.

Data Analysis

All data was entered into an Excel spreadsheet. All calculations were performed in Excel. The Bing Maps Add-In feature in Excel was used to generate all maps used to illustrate differences between the states. Given the simplicity of the data presentation on a per-state basis, two statistical tools are used to compare two independent samples: (1) Southern states and the District of Columbia; and (2) all other states.

- Welch's t-test (means comparison) – used to determine if there are statistically significant differences between the mean values from two independent samples when there are differences in the variances of the samples.
- F-test (statistical significance) – used to determine if there are statistically significant differences between the variances of observations from two independent samples.

Given the differences in the size of state populations, the focus for comparisons (where possible) is per capita measured for every 100,000 adults age 21 and older (i.e., the legal drinking age). To examine the influence of population on the number of breweries presented, simple linear regression is used.

- linear regression (best-fit predictive model) – used to predict the value of a dependent variable based on the value of another (independent) variable.

To examine the relationships among four possible influences on the number of craft breweries per capita (measured per 100,000 adults age 21 and older) in each state in 2024, multiple regression is used. Multiple regression predicts the value of a dependent variable based on the value of multiple independent variables.

Limitations

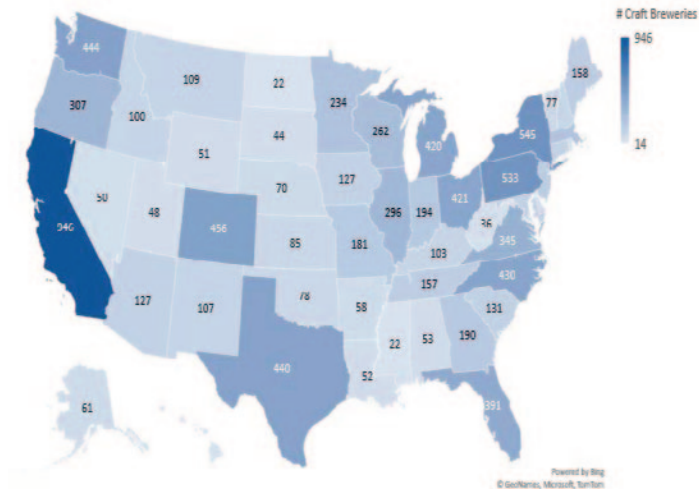
This study relies on secondary, state-level data from the Brewers Association. The effective sample size is small (50 states plus the District of Columbia) and fixed, which limits the statistical analysis and external validity beyond the state level. Welch's t-test is used because it does not assume homogeneity of variances between Southern and non-Southern state clusters. The F-test explicitly assumes homogeneity of variances, which may not hold for these state-level data. Further, both simple and multiple linear regression both assume independent errors with constant variance and approximately normal residuals. Given these constraints, the findings should be interpreted as descriptive and exploratory, not causal.

Results

State-by-State Analysis of the Craft Beer Industry

A heat-map showing the number of craft breweries by state is provided in Figure 2. Broadly speaking, there are 3 geographic areas that show a higher concentration of craft breweries: (1) New England, Mid-Atlantic, Great Lakes; (2) large Southern states; and (3) the West Coast. With over 450 craft breweries, the state of Colorado is unique in the Mountain and Western Mid-West states. Its longstanding heritage of beer brewing dates back to the founding of Coors Brewing Company in Golden, Colorado in 1873 (History Colorado, 2023).

Figure 2: Number of Craft Breweries per State



Over the last ten years, the following states have witnessed the largest percentage increases in number of craft breweries:

- 1. Oklahoma (680%)
- 2. Kentucky (472%)
- 3. New Jersey (425%)
- 4. Georgia (375%)
- 5. Connecticut (350%)
- 6. Virginia (342%)
- 7. North Carolina (325%)
- 8. South Carolina (322%)
- 9. Tennessee (302%)

The reader should note that Southern states represent the majority (e.g., 7 of 9, or 78 percent) of the higher growth states listed above. The overall growth rate among Southern states was 293 percent compared to 193 percent for all other states from 2014 to 2024. It should be noted that prior research has noted deregulation of the craft beer industry in Southern states for the period of 2000-2018 has been shown to encourage the creation of new craft breweries in the region (Witham and Leite, 2023).

Comparing Southern States to the Remainder of the United States

In addition to noting that growth rates in the craft brewing industry are higher in the Southern United States, the researchers looked for other meaningful comparisons in the data. Table 2 presents the comparisons between Southern states and all other U.S. states. The detailed test results are provided in Appendix 2.

Table 2: Craft Breweries – A Comparison of Per-State Data			
Variable	Southern States and District of Columbia (n=16)	All Other States (n=35)	Test Statistic
Total of Craft Breweries – Per Capita (for 100,000 Age 21 and Older Residents)	2.9 breweries	6.2 breweries	Welch’s t-test = 4.81
	Std. Deviation = 1.2	Std. Deviation = 3.6	p < .001
	Variance = 1.55	Variance = 12.97	F = 8.39 P < .001
Barrel Production Volume – Per Capita (for 100,000 Age 21 and Older Residents)	1.8 barrels	4.1 barrels	Welch’s t-test = 2.69
	Std. Deviation = 1.8	Std. Deviation = 4.1	p < .001
	Variance = 3.2	Variance = 17.0	F = 5.29 p < .001
Economic Impact of Industry – Per Capita (for 100,000 Age 21 and Older Residents)	\$236	\$386	Welch’s t-test = 4.48
	Std. Deviation = \$77	Std. Deviation = \$163	p < .001
	Variance = 5,877	Variance = 26,421	F = 4.49 p = 0.001
Percentage Change in Number of Craft Breweries 2014 to 2024	Mean % change rate of 293%	Mean % change rate of 193%	Welch’s t-test = -2.80
	Std. Deviation = 132%	Std. Deviation = 85%	p = 0.01
	Variance = 176%	Variance = 73%	F = 0.413 p = 0.015
Linear Regression Model – Predicting the Number of Craft Breweries SOLELY Based on a State’s Population Size	R ² of 71%	R ² of 81%	State population explains LESS of the variance for Southern States

The following summary statements are offered from the data presented in Table 2:

1. Southern states have fewer craft breweries per capita than the rest of the United States. And, the variation in state data is lower for Southern states than the remainder of the country.
2. Production volume of craft beer per capita is lower in the Southern states than the rest of the United States. And, the variation in state data is lower for Southern states than the rest of the country.
3. Economic impact of the craft beer industry per capita is lower in the Southern states than the rests of the United States. And, the variation in state data is lower in the Southern states than the rest of the country.
4. The per-state growth rate in the number of craft breweries is higher in Southern states than the rest of the United States for the period of 2014 – 2024. However, the variation in state data is higher in the Southern states than the rest of the country.
5. The size of the population accounts for 71 percent of the variation in the number of craft breweries per state in the Southern states versus 81 percent in the rest of the country. There may be other factors (such as regional culture, lingering blue laws, church influences, and others) to suggest why the Southern states, have fewer breweries serving the same population size as other regions of the country.

It is interesting to note that the growth rate in craft distilleries (which produce distilled spirits like whiskey, vodka, rum, and other products) also exhibited differences between geographic regions in recent years. According to data from the American Craft Spirits Association (2016; 2024), the number of craft distillers rose by 163 percent in Southern states versus 131 percent for all other states for the period of 2016 – 2024.

Multivariate Analysis

A multiple linear regression was conducted to examine whether X_1 , X_2 , X_3 , and X_4 predicted Y , the number of craft breweries per 100,000 adults age 21 and older. The predictors included:

- X_1 = Per-capita beer consumption per state (Beer Info, 2026).

- X_2 = Southern vs. non-Southern state (dummy coded; 1 = Southern, 0 = Other).
- X_3 = Percentage of adults self-reporting as “very religious” (Norman, 2018).
- X_4 = Alcohol Policy Scale (APS) score per state (Blanchette et al., 2020).

The overall regression model was statistically significant, $F(4, 45) = 6.76, p < .001$, accounting for 37.5 percent of the variance in craft brewery density ($R^2 = .38$, adjusted $R^2 = .32$). Per capita beer consumption emerged as a significant positive predictor ($b = 0.20, SE = 0.06, t = 3.23, p = .002$), indicating that states with higher beer consumption tend to have more craft breweries per 100,000 adults age 21 and older.

Southern status showed a marginally significant negative association with brewery density ($b = -1.93, p = .072$), as did the percentage of adults identifying as “very religious” ($b = -0.14, p = .089$), though neither effect reached the conventional $\alpha = .05$ threshold. A state’s Alcohol Policy Score (APS) did not significantly predict brewery density ($b = 0.03, p = .542$). See Table 3.

Table 3: Results of Multiple Linear Regression

Predictor	B	SE b	T	P	95% confidence interval
Intercept	4.40	4.27	1.03	.308	[-4.19, 13.00]
X_1 = Per-capita beer consumption	0.20	0.06	3.23	.002	[0.08, 0.33]
X_2 = Southern or Non-Southern state	-1.93	1.05	-1.84	.072	[-4.03, 0.18]
X_3 = Number of people self-reporting ‘very religious’	-0.14	0.08	-1.74	.089	[-0.30, 0.20]
X_4 = Alcohol Policy Scale (APS) score	0.03	0.05	0.61	.542	[-0.08, 0.14]

Model Fit: $R^2=.375$, Adjusted $R^2=.320$, $F(4,45) = 6.76$, $p < .001$.

Contextual Information in Support of These Findings

As noted earlier, craft beer accounts for roughly 13 percent of U.S. beer volume; accordingly, overall beer-drinking patterns provide useful context for understanding the potential market size for craft beer producers. Nationally, adults age 21+ consume about 28.2 gallons of beer per year—approximately a six-pack per week (Beer Info, 2026). Southern states, on average, consume less beer per capita than other U.S. states with mean consumption of 23.3 gallons (SD 4.7) in the South versus 25.7 gallons (SD 7.7) elsewhere. Only three Southern states are above the national average, while thirteen states fall below it. These patterns suggest a smaller base of regular beer consumers in much of the South. Given that craft breweries serve a subset of overall beer drinkers who value beer variety and will pay a premium, it is reasonable to expect fewer craft breweries per capita in Southern states than in the rest of the country.

Discussion of Cultural, Historical, and Institutional Factors

As illustrated in Table 2, differences are apparent in the composition of the craft beer industry in states in the Southern United States compared to the rest of the country:

- There are fewer craft breweries per capita, but recent growth rates are higher.
- The production volume of craft beer per capita is lower.
- The economic impact of the craft beer industry per capita is lower.
- Population size is a weaker predictor of the number of craft breweries.

There are fewer craft breweries per capita in Southern states, and this pattern reflects long-term cultural, historical, and institutional influences that have shaped regional alcohol markets. These factors help explain why deregulation increases brewery entry in the South but yields slower and more constrained expansion compared to other U.S. regions.

Cultural Factors

Cultural attitudes toward alcohol play a central role in shaping both demand for craft beer and broader political support for deregulatory policies. Prior geographic research finds that many Southern states exhibit higher levels of religious observance—particularly among Evangelical Protestant populations—which is associated with lower alcohol consumption and greater support for restrictive alcohol policies (Holt et al., 2006). Gallup survey data reinforce this pattern: in 2017, 43 percent of residents in Southern states described themselves as “very religious,” based on self-reported importance of religion and frequency of worship attendance (Norman, 2018).

Although religious affiliation does not necessarily imply abstinence, these cultural norms are consistent with the region’s lower per capita beer consumption. A smaller base of regular beer drinkers reduces demand for premium, variety-seeking craft products and contributes to fewer breweries per capita, even following significant policy reforms (Beer Info, 2026; Norman, 2016). Thus, the response to deregulation in Southern states reflects both improved legal conditions for entry and underlying consumption patterns that temper the speed and scale of market growth.

Historical Factors

Southern alcohol markets also developed under historical conditions that diverged from those in other regions. Several Southern states delayed ratification of the Twenty-First Amendment or retained prohibitions long after the formal end of national Prohibition in 1933. Mississippi, for example, did not legalize statewide alcohol sales until 1966, and many states continued to allow counties or municipalities to remain dry under local-option laws (National Constitution Center, 2022; Rehabs.com, 2025).

These delayed policy transitions shaped early market structures, including the development of distributor networks, the density of alcohol retailers, and the normalization of alcohol-related entrepreneurship. Compared with states that liberalized earlier, Southern states entered the post-Prohibition era with fewer retail outlets, more restrictive licensing frameworks, and less established distribution infrastructure. Consequently, modern deregulatory

reforms occur in institutional environments shaped by decades of restrictive policies. The positive association between deregulation and brewery entry observed in our results is consistent with a “partial catch-up” process: policy reforms stimulate new growth, but from historically constrained starting conditions rather than an already mature market.

Institutional Factors

Institutional factors further influence how deregulation affects brewery formation. U.S. alcohol markets operate under a legally mandated three-tier system that separates producers, distributors, and retailers. Although this framework applies nationally, states differ widely in how strictly it is enforced and whether exceptions—such as self-distribution or limited direct-to-consumer sales—are permitted. Historical analyses note that post-Prohibition regulatory institutions were often designed to limit vertical integration and protect incumbents, sometimes at the expense of small producers (Sauer, 2017).

These constraints remain especially pronounced in many Southern states. Industry reports document that strict interpretations of the three-tier system raise entry costs and restrict market access for new breweries, particularly in their early years (Sorini, 2017). Academic studies similarly highlight the persistence of distributor protections and licensing barriers in Southern alcohol markets (Massey and Higgins, 2023). For instance, South Carolina requires strict separation across all three tiers—breweries, wholesalers, and retailers—leaving few pathways for self-distribution or alternative models of market entry (South Carolina Attorneys at Law, 2025). These requirements increase operational costs and reduce autonomy for small breweries, slowing overall industry growth even in the presence of deregulatory reforms.

Deregulation has removed or reduced the barriers to market entry in many Southern states. The number of craft breweries across Southern states has increased and this growth rate exceeds that of the remainder of the country. However, because these reforms operate within long-standing institutional constraints, their effects vary across states and rarely produce immediate or uniform results.

Summary Comments

The cultural, historical, and institutional factors clarify why Southern states continue to have fewer craft breweries per capita despite recent policy changes. Deregulation clearly matters—these results show significant increases in brewery counts following reforms—but its impact is moderated by enduring regional characteristics and longstanding barrier to entry and market growth. By placing these empirical results within these broader contexts, this section provides a more nuanced understanding of alcohol policy outcomes and explains why Southern states exhibit positive but comparatively constrained responses to deregulation.

The purpose of this short discussion is not to assign direct causality. The issue of differing levels of alcohol consumption among different states and communities is a complex issue. Furthermore, the continuous migration of people from other regions to the Southern states makes assigning any causality even more difficult. All that can be confidently stated is that the craft brewing industry is growing across the United States and that growth rate (for a variety of reasons) is faster in Southern states than the rest of the country. The availability of annual data will allow us to monitor this ongoing dynamic over time.

Concluding Remarks

Recent consolidation in the U.S. beer market has led to the creation of two international brewers: Anheuser-Busch InBev (e.g., Budweiser, Corona, and Stella Artois) and Molson Coors (e.g., Coors, Miller, and Molson). Their diversified portfolios of beverages serve a wide variety of consumers across different regions, including the Southern United States. Still, the craft beer industry has seen an increase in popularity in recent years as some consumers explore new beer flavors and styles. The U.S. beer industry started with local firms producing local beers for local consumers, and craft brewers have championed a return to this local brewer focus. Interested consumers have growing options of new brewers and brews all across the United States, including many unique offerings from Southern breweries.

Ten years ago, Gohmann (2016) asked the question: *Why are there so few breweries in the South?* Around that time in 2014, Southern

states averaged approximately 40 craft breweries per state while the average of all other states was approximately 80 craft breweries per state. These figures reflect a 2-to-1 ratio or, put another way, the Southern state average was 50 percent of non-Southern states. In 2024, Southern states averaged approximately 157 craft breweries per state while the average of all other states was approximately 205 craft breweries per state. Given the higher growth rate for craft breweries in Southern states, the updated figures now suggest a 1.3-to-1 ratio or the Southern state average is now 76.5 percent of the non-Southern state average. If current growth rates continue, the research question may someday be revised to ask: *Why are there so many breweries in the South?*

Investment tends to follow opportunity. Current migration patterns show that more people are moving to Southern states than from them. New residents may bring different attitudes toward alcohol consumption, organized religion, and other social customs that could influence the craft brewing industry. Many may also arrive with higher levels of craft beer awareness if the industry was more established in their previous states of residence. If current growth trends continue, future researchers may instead examine why craft brewery density in the South has become comparable to—or even exceeded—that of other regions.

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Appendix 1: State-by-State Craft Brewery Statistics

State	Number of Craft Breweries	# Per Capita Breweries	Barrel Volume	Barrel Volume - Per Capita	Economic Impact (in millions)	Econ. Impact - Per Capita	2014 Breweries	2024 Breweries	Net Change 2014- 2024	% Change 2014- 2024
Alabama	53	1.4	85,971	0.7	\$650	\$173	19	53	34	178.9%
Alaska	61	11.4	145,809	8.5	\$298	\$559	22	61	39	177.3%
Arizona	127	2.3	224,627	1.3	\$1,224	\$220	53	127	74	139.6%
Arkansas	58	2.6	53,696	0.7	\$518	\$231	19	58	39	205.3%
California	946	3.3	3,737,147	4.0	\$8,269	\$285	431	946	515	119.5%
Colorado	456	10.3	779,238	5.4	\$2,496	\$562	235	456	221	94.0%
Connecticut	122	4.4	428,218	4.8	\$792	\$289	27	122	95	351.9%
Delaware	38	4.9	204,746	8.1	\$358	\$460	11	38	27	245.5%
District of Columbia	14	2.7	35,190	2.1	\$194	\$368	8	14	6	75%
Florida	391	2.2	1,229,970	2.2	\$3,757	\$215	111	391	280	252.3%
Georgia	190	2.4	585,429	2.3	\$1,871	\$233	40	190	150	375.0%
Hawaii	26	2.4	178,857	5.1	\$347	\$317	10	26	16	160.0%
Idaho	100	7.1	70,824	1.6	\$431	\$306	43	100	57	132.6%

State	Number of Craft Breweries	# Per Capita Breweries	Barrel Volume	Barrel Volume - Per Capita	Economic Impact (in millions)	Econ. Impact - Per Capita	2014 Breweries	2024 Breweries	Net Change 2014- 2024	% Change 2014- 2024
Illinois	296	3.2	420,903	1.4	\$2,887	\$308	103	296	193	187.4%
Indiana	194	3.9	233,377	1.4	\$1,479	\$296	80	194	114	142.5%
Iowa	127	5.4	139,906	1.9	\$1,003	\$428	46	127	81	176.1%
Kansas	85	4	38,953	0.6	\$452	\$212	22	85	63	286.4%
Kentucky	103	3.1	121,448	1.1	\$764	\$228	18	103	85	472.2%
Louisiana	52	1.6	172,511	1.6	\$768	\$230	15	52	37	246.7%
Maine	158	14.3	349,555	9.8	\$743	\$675	52	158	106	203.8%
Maryland	134	2.9	187,080	1.3	\$925	\$201	40	134	94	235.0%
Massachusetts	228	4.3	379,774	2.2	\$1,521	\$284	61	228	167	273.8%
Michigan	420	5.6	287,842	1.2	\$1,823	\$242	159	420	261	164.2%
Minnesota	234	5.5	527,155	3.9	\$1,830	\$434	73	234	161	220.5%
Mississippi	22	1	19,633	0.3	\$268	\$126	7	22	15	214.3%
Missouri	181	3.9	297,447	2.0	\$1,194	\$260	55	181	126	229.1%

State	Number of Craft Breweries	# Per Capita Breweries	Barrel Volume	Barrel Volume - Per Capita	Economic Impact (in millions)	Econ. Impact - Per Capita	2014 Breweries	2024 Breweries	Net Change 2014-2024	% Change 2014-2024
Montana	109	12.8	182,488	6.6	\$565	\$663	44	109	65	147.7%
Nebraska	70	4.9	46,879	1.0	\$544	\$382	32	70	38	118.8%
Nevada	50	2.1	54,601	0.7	\$539	\$224	25	50	25	100.0%
New Hampshire	102	9.3	122,843	3.5	\$474	\$431	26	102	76	292.3%
New Jersey	168	2.4	180,541	0.8	\$1,579	\$227	32	168	136	425.0%
New Mexico	107	6.8	156,230	3.1	\$383	\$242	36	107	71	197.2%
New York	545	3.7	1,596,285	3.3	\$3,965	\$266	181	545	364	201.1%
North Carolina	430	5.3	808,016	3.1	\$2,265	\$281	101	430	329	325.7%
North Dakota	22	3.9	21,375	1.2	\$261	\$461	6	22	16	266.7%
Ohio	421	4.8	1,151,452	4.1	\$2,976	\$340	110	421	311	282.7%
Oklahoma	78	2.7	76,560	0.8	\$533	\$183	10	78	68	680.0%
Oregon	307	9.4	1,104,572	10.5	\$1,884	\$578	216	307	91	42.1%
Pennsylvania	533	5.4	2,654,359	8.4	\$5,228	\$533	136	533	397	291.9%

State	Number of Craft Breweries	# Per Capita Breweries	Barrel Volume	Barrel Volume - Per Capita	Economic Impact (in millions)	Econ. Impact - Per Capita	2014 Breweries	2024 Breweries	Net Change 2014- 2024	% Change 2014- 2024
Rhode Island	42	5	62,484	2.3	\$265	\$315	11	42	31	281.8%
South Carolina	131	3.3	128,521	1.0	\$776	\$193	31	131	100	322.6%
South Dakota	44	6.7	22,772	1.1	\$240	\$362	12	44	32	266.7%
Tennessee	157	3	191,764	1.1	\$1,247	\$235	39	157	118	302.6%
Texas	440	2.2	1,368,593	2.2	\$4,699	\$217	117	440	323	276.1%
Utah	48	2.1	128,673	1.7	\$520	\$224	20	48	28	140.0%
Vermont	77	15.4	353,032	21.8	\$460	\$917	40	77	37	92.5%
Virginia	345	5.3	397,161	1.9	\$1,525	\$235	78	345	267	342.3%
Washington	444	7.5	528013	2.8	\$1,863	\$316	256	444	188	73.4%
West Virginia	36	2.7	21619	0.5	\$264	\$197	11	36	25	227.3%
Wisconsin	262	5.9	742240	5.2	\$2,346	\$529	97	262	165	170.1%
Wyoming	51	11.8	68407	4.9	\$189	\$439	22	51	29	131.8%
Mean Values	193	5.1	453,035	3.3	\$1,421	\$336	68	193	125	227%

Appendix 2: Results of Welch’s t-Tests and F-Tests

Number of Craft Breweries Per 100,000 Adults Age 21 and Older		
	Non-Southern States	Southern States and D.C.
Mean	6.21	2.90
Variance	12.97	1.54
Observations	34	17
Df	45	
t Stat	4.81	
p (two-tail)	0.00001	

An F-test for homogeneity of variances indicated that Non-Southern States had a significantly larger variance than Southern States and the District of Columbia. $F(33, 16) = 8.40, p < .001$ (one-tailed).

Beer Production Volume Per 100,000 Adults Age 21 and Older		
	Non-Southern States	Southern States and D.C.
Mean	4.06	1.82
Variance	16.97	3.20
Observations	34	17
Df	48	
t Stat	2.69	
p (two-tail)	0.009	

An F-test for homogeneity of variances indicated that Non-Southern States had a significantly larger variance than Southern States and the District of Columbia. $F(33, 16) = 5.29, p < .001$ (one-tailed).

Economic Impact Per 100,000 Adults Age 21 and Older

	Non-Southern States	Southern States and D.C.
Mean	4.06	1.82
Variance	16,397	3.20
Observations	34	17
Df	48	
t Stat	2.70	
p (two-tail)	0.009	

An F-test for homogeneity of variances indicated that Non-Southern States had a significantly larger variance than Southern States and the District of Columbia. $F(33, 16) = 4.49$, $p = 0.001$ (one-tailed).

Percent Change in Growth Rates 2014–2024

	Non-Southern States	Southern States and D.C.
Mean	193%	293%
Variance	0.72	1.75
Observations	34	17
Df	23	
t Stat	-2.80	
p (two-tail)	0.01	

An F-test for homogeneity of variances indicated that Non-Southern States had a significantly larger variance than Southern States and the District of Columbia. $F(33, 16) = 0.41$, $p = 0.01$ (one-tailed).

Customer Engagement Components and Outcomes in the Sharing Economy: Insights from the Airbnb Study

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Abstract

Customer engagement can drive value that ultimately benefits both customers and firms. Considering the growing managerial interest in the various components of customer engagement, it is imperative to advance the understanding of the interplays among these constructs and their consequences for both theoretical and practical purposes. The current research examines the links between psychological and behavioral customer engagement, as well as the effect of the latter on service quality, customer goal attainment, and loyalty, particularly within sharing economy contexts. Specifically, the study explores how psychological engagement contributes to two distinct dimensions of behavioral engagement: in-role behaviors, which refer to expected customer actions, and extra-role behaviors, which involve voluntary, discretionary efforts. A survey of 227 Airbnb customers provides empirical evidence that psychological customer engagement significantly influences both dimensions of behavioral engagement, which, in turn, have a measurable impact on perceived service quality, customer goal attainment, and loyalty. These results underscore the importance of understanding the mechanisms through which customer engagement operates and its potential to shape customer experiences and outcomes. The findings have valuable implications for both service research and managers, highlighting the importance of fostering customer engagement to enhance service quality, meet customer goals, and drive loyalty in sharing economy platforms.

1. Introduction

Behavioral customer engagement (BCE) constitutes a significant determinant of firm performance in many industries (Yi et al., 2011; Yi & Gong, 2013; Pansari & Kumar, 2017). Defined as firm- or brand-focused customer behaviors that go beyond mere purchase (Van Doorn et al., 2010), BCE can be categorized into two dimensions: in-role and extra-role, such that the former pertains to customer behaviors that reflect what would typically be expected of them, and the latter imply that customers go beyond what ordinarily would be expected (Torkzadeh et al., 2022). In addition, psychological

customer engagement (PCE) could be linked to BCE, as well as customer and firm outcomes (Torkzadeh et al., 2022). Among a wide range of conceptualizations, a notable approach features a hierarchical order of effects, in which PCE is a state of mind or psychological condition that leads to intentions that then facilitate BCE (e.g., van Doorn et al., 2010; Pansari & Kumar, 2017; Hollebeek et al., 2019; Torkzadeh et al., 2022). If customers feel connected with a firm, they might exhibit engagement and behave in ways that benefit the firm directly or indirectly (Brodie et al., 2011, 2013; Pansari & Kumar, 2017).

To examine the interplay of PCE and BCE (Torkzadeh et al., 2022), the present research explores PCE as a likely antecedent of BCE, particularly in sharing economy contexts, and addresses the resulting effects on perceived service quality, customer goal attainment, and loyalty. The sharing economy represents a key element of the growing peer-to-peer accommodation sector and is representative of the broader technology-enabled, app-centered service sector, such that this relevant context appears in prior studies of various platforms, such as the impacts of Airbnb on apartment rental prices (Barron et al., 2017) and hotels (Li & Srinivasan, 2019) or how Uber affects drunk driving (Greenwood & Wattal, 2017). With this study, we seek to investigate the impact of customer engagement components on perceived quality and service outcomes for Airbnb.

2. Theoretical Background

2.1. Customer Engagement (CE): Definition and Components

Customer engagement (CE) refers to the level of a customer's cognitive, emotional, and behavioral investment in specific brand or service interactions (Brodie et al., 2011). It goes beyond transactional purchases to encompass how customers think about, feel toward, and act on behalf of a service provider. Scholars debate whether CE is purely behavioral or multidimensional; in this study we adopt the multidimensional view in which psychological and behavioral elements are both essential.

Whereas some scholars regard customer engagement as a behavioral construct (Van Doorn et al., 2010; Guesalaga, 2016; Harmeling et al., 2017; Pansari & Kumar, 2017), others indicate it is multidimensional, consisting of both behavioral and psychological components (Jaakkola & Alexander, 2014; Kumar & Pansari, 2016; Torkzadeh et al., 2022). Furthermore, BCE comprises both in-role and

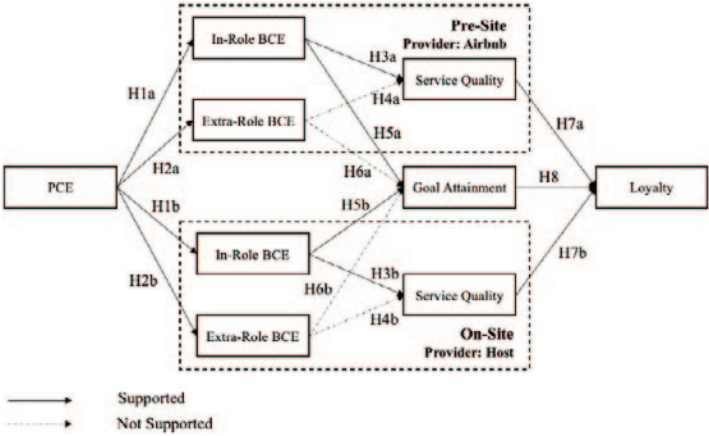
extra-role forms (Yi & Gong, 2013; Torkzadeh et al., 2022), and psychological customer engagement (PCE) appears closely related to behavioral constructs. In some ways, PCE maintains nomological superiority over behavioral conceptions of customer engagement (e.g., van Doorn et al., 2010; Hollebeek et al., 2019; Torkzadeh et al., 2022), such that various roles of PCE appear in prior research. Chandler and Lusch (2015) introduce a broadened framework of service systems in which PCE, defined as a set of emotional connections and dispositions, serves as the psychological antecedent of BCE. Bolton and Saxena-Iyer (2009) instead identify in-role BCE as an antecedent of PCE in psychological (e.g., emotional connectedness, perceived service quality) and behavioral (e.g., service usage, repeat purchase behavior, word of mouth) domains. The former direction (PCEBCE) is more consistent with theories in services marketing, which predict that customer psychological processes drive behaviors. For example, perceived service quality and satisfaction influence (repeat) purchases and word-of-mouth communication (Zeithaml et al., 1996; Brady & Robertson, 2001). In consumer behavior, psychological processes such as attitude and motivation similarly are widely recognized as antecedents of behavior (Allen et al., 1992; Stuppy et al., 2020).

2.2. PCE: Definition and Significance

Most definitions of PCE (Higgins & Scholer, 2009; Black, 2012; Brodie et al., 2013) focus on emotional states such as attachment, emotional connection, commitment, or devotion (Bryce et al., 2015). We adopt a popular definition, in both employee engagement and customer engagement literature, in which PCE implies a multidimensional customer–firm relationship marked by customer satisfaction and emotional connectedness with the firm, as reflected by the three dimensions of vigor, dedication, and absorption (Schaufeli et al., 2002; Torkzadeh et al., 2022). Because PCE is integral to the customer experience and a key determinant of firm performance (Mollen & Wilson, 2010; Sheng & Chen, 2012; Torkzadeh et al., 2022), firms allocate resources to enhance it (Harmeling et al., 2017). Furthermore, PCE as a catalyst can turn customers into firm advocates and product promoters (Mistilis et al., 2014; Torkzadeh et al., 2022). Many companies thus regard PCE as an essential or important strategic undertaking (Econsultancy, 2011) and seek strategies to create it. Yet despite growing interest in fostering PCE in both practice and academic, extant research remains unclear about the behavioral mechanism through which PCE

influences the value realized by customers and firms. As we argue, and subsequently demonstrate empirically, the in-role and extra-role dimensions of BCE together constitute a key behavioral mechanism that transfers the effect of PCE to service quality, customer goal attainment, and customer loyalty. Figure 1 illustrates the proposed mechanism and pertinent relationships.

Figure 1. Conceptual model



2.3. Behavioral Customer Engagement (BCE)

Behavioral customer engagement reflects customers’ actual actions in the co-creation of services. Drawing on prior literature, BCE can be categorised into **in-role** behaviours, which are required of customers for service production and delivery, and **extra-role** behaviours, which are discretionary and akin to citizenship behaviours (Yi & Gong, 2013; Torkzadeh et al., 2022). In-role BCE includes tasks that customers must perform to realise value (e.g., following instructions on a platform, providing accurate information), whereas extra-role BCE encompasses voluntary behaviours such as offering feedback, advocacy, helping other customers, and displaying tolerance for service failures (Groth, 2005; Yi et al., 2011). Because BCE involves customer participation in service processes, it contributes directly and indirectly to outcomes such as service quality and goal attainment (Finsterwalder & Tuzovic, 2010; Gallan et al., 2013). Understanding BCE and its two forms provides the foundation for distinguishing it from its psychological antecedent (PCE) and theorising about their interplay.

2.4. Interplay Between PCE and BCE

Prior literature offers consensus with regard to some antecedents of BCE, such as customer readiness (Dellande et al., 2004; Meuter et al. 2005; Torkzadeh et al., 2022), demographics (Xue & Harker, 2002), perceived justice (Yi & Gong, 2013), behavioral control (John, 2003), and perceived value (Dong, Evans, & Zou, 2007). It is less aligned with regard to whether PCE drives BCE, suggesting the need for further conceptual and empirical research (Jaakkola & Alexander, 2014; Chandler & Lusch, 2015; Torkzadeh et al., 2022). Anecdotal evidence indicates the relevance of PCE for BCE (Chan et al., 2010; Auh et al. 2016; Cossío-Silva et al., 2016; Torkzadeh et al., 2022), but only recently have scholars begun conceptualizing the relationship (Jaakkola & Alexander, 2014; Chandler & Lusch, 2015; Torkzadeh et al., 2022). Several researchers draw on the service-dominant (S-D) logic (Vargo & Lusch, 2017; Hollebeek et al., 2019) to predict a positive effect of PCE on BCE, because through the value co-creation process, suppliers create superior value propositions, with which customers engage psychologically and thereby translate them into actual value through their inputs and actions (Payne et al., 2008). Once customers are psychologically engaged, they interact with suppliers' resources (e.g., people, goods, services, facilities, equipment), exert effort, and determine how much value and at what quality gets produced. For proposed value to transform into co-created value, customers must undertake certain actions that they would not do if they were not psychologically engaged with the provider's value propositions (Chathoth et al., 2014; Hollebeek et al., 2019).

If people are highly engaged in their role as service customers, they likely focus physical effort on the pursuit of role-related tasks but also attend cognitively and feel emotionally connected to that role (Kahn, 1990; Ashforth & Humphrey, 1995; Rich et al., 2010). In contrast, consumers who are not thus engaged might refuse to devote physical, cognitive, or emotional energy to role-related tasks; if they perform tasks, they likely do so in a robotic, passive, or detached manner (Goffman, 1961; Kahn, 1990; Rich et al., 2010).

Notably, in-role BCE pertains to actions *required* of customers (Groth, 2005; Fang et al., 2008; Yi et al., 2011). By definition, BCE requires some participation in service production and/or delivery processes, so customers have duties, roles, and responsibilities as actors in the service encounter (Yi et al., 2011; Zeithaml et al., 2017). If they fail to perform those roles, the service cannot be produced or delivered successfully (e.g., frozen meal kits must be thawed, cooked,

and consumed by the customer for value to be co-created and realized). Thus, in-role BCE inherently depends on PCE. Because psychologically engaged people “become physically involved in their role-related tasks, either alone or along with others, [and] more cognitively vigilant,” they may be more likely to exhibit in-role BCE (Kahn, 1990, p. 700). We hypothesize:

H1a/b: PCE is positively associated with in-role BCE at both the pre-site and on-site stages.

In contrast, extra-role BCE involves discretionary actions by the customer, which are helpful and valuable to the firm but not necessary for service production or delivery (Groth, 2005; Yi et al., 2011). It extends beyond customer role expectations (Gruen, 1995). According to Yi and Gong (2013), feedback, advocacy, helping, and tolerance represent citizen behaviors; in turn, such behaviors might not contribute directly to successful production or delivery but still facilitate overall firm performance (Motowidlo & Van Scotter, 1994; Yi et al., 2011). When people are psychologically engaged, they are “empathically connected to others in the service of the work they are doing in ways that display what they think and feel, their creativity, their beliefs and values, and their personal connection to others” (Kahn, 1990, p. 700). Empathetic connection also is a cornerstone of tolerance, feedback, helping behavior, and advocacy. Therefore, customers who experience PCE are more likely to exhibit extra-role BCE.

H2a/b: PCE is positively associated with extra-role BCE at both the pre-site and on-site stages.

2.5. In-Role BCE, Extra-Role BCE, and Service Quality

We acknowledge that BCE affects various service outcomes, but our research focus is on service quality and goal attainment, which are fundamental to the development of loyalty (Cronin et al., 2000; Harris & Goode 2004). Service quality refers to customers’ evaluations of the service during the service process or encounter (Gallan et al., 2013), which depends partly on BCE (Ennew & Blinks, 1999; Gallan et al., 2013; Yi, 2014). Scholars who highlight customers’ roles in service delivery sometimes refer to them as “contributors to quality” (Finsterwalder & Tuzovic, 2010). Service quality likely increases if customers provide useful, real-time information about their needs and expectations (Ennew & Binks, 1999), which constitutes one form of in-role BCE, with positive effects in terms of increasing the quantity

and quality of customer–provider communication and thereby enhancing perceptions of service quality among customers and service providers alike (Gallan et al., 2013). For example, when online lodging platforms try to match guests' needs with hosts' offerings, customers' clear communication of their needs and desires to the online platform or the hosts can result in more successful identification of matching hosts and thus superior perceptions of service quality. As such, we postulate:

H3a/b: In-role BCE is positively associated with perceived service quality at both the pre-site and on-site stages.

Customers who exhibit extra-role BCE such as feedback, tolerance, help, and advocacy (Yi & Gong, 2013) likely receive more attention and appreciation from service providers, and possibly other customers, so they can more readily perceive service quality (Gilliam & Rayburn, 2016). Consider customers who exhibit tolerance following a service disruption. They increase the value co-created and realized by both themselves and by others (Yi & Gong, 2013). Similarly, customers who provide service providers with honest, constructive feedback, whether complimentary or critical, assist the businesses in terms of improving their services and meeting customer expectations. Therefore, we hypothesize:

H4a/b: Extra-role BCE is positively associated with perceived service quality at both the pre-site and on-site stages.

2.6. In-Role BCE, Extra-Role BCE, and Goal Attainment

By functioning as value co-creators, customers influence their own feelings of goal attainment. The effect of customer contributions to service operations and their impact on service success has long been acknowledged (Mills et al., 1983). As Bagozzi and Dholakia (1999) find, when customers take responsibility for service outcomes, they are more likely to achieve their goals, reflecting the higher quality of their contributions. That is, if customers sense responsibility for service outcomes, they perform better as active participants in service operations, in an effort to increase the likelihood that they will attain their consumption goals. This reasoning has received empirical support in healthcare contexts. For example, Dellande et al. (2004) find a direct association between patients' in-role behavior in weight-loss programs and goal attainment. Dellande et al. (2004) warn that compliance decreases as the duration of the regimen increases though, so they encourage service providers to reassure customers periodically

and remind them of the critical role of their own contributions in goal attainment. In line with this discussion, we hypothesize:

H5a/b: In-role BCE is positively associated with goal attainment at both the pre-site and on-site stages.

Customers engaged in the service delivery process function as “partial employees” of the firm (Bowen & Schneider, 1985; Mills & Morris, 1986), in that they contribute to the development and delivery of service, similar to traditional employees (Bettencourt, 1997). To the extent that service customers qualify as partial employees, extant knowledge about employee performance might provide relevant insights into customer performance (Bowen, 1986; Bettencourt, 1997). In this domain, substantial research highlights the relationship between employees’ extra-role behavior and performance (e.g., Allen & Rush, 1998; Koys, 2001; DeGroot & Brownlee, 2006; Ehrhart et al., 2006; Sun et al., 2007). That is, employees who are more helpful and cooperative perform better. Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) are often cited as theoretical bases for such effects: Social exchange theory suggests that if an employee devotes time to help another employee finish an important task, the latter is likely to return the favor and help the first employee reach another goal. Similarly, customers who help the service providers or other customers attain their goals might expect to receive help from those others in their endeavors to attain their own goals. As such, we posit:

H6a/b: Extra-role BCE is positively associated with goal attainment at both the pre-site and on-site stages.

2.7. Service Quality, Goal Attainment, and Loyalty

Loyalty is a construct of great importance to managers and scholars, because of its direct link to customer lifetime value and firm profitability (Blattberg et al., 2001; Reinartz et al., 2005). Firms thus have a strong interest in identifying determinants of customer loyalty, including customer goal attainment. When customers believe they have reached their goals, with the assistance of a provider’s services, they likely repatronize that service in future (Kivetz et al., 2006). Such demonstrated loyalty implies that the previously provided service quality has been satisfactory, such that customers have decided to preserve and develop their relationship with the service provider (Ennew & Binks, 1999). Therefore, we hypothesize:

H7a/b: Perceived service quality is positively associated with customer loyalty at both the pre-site and on-site stages.

H8: Goal attainment is positively associated with customer loyalty.

3. Method

3.1. *Sample and Procedures*

Noting the expanding prevalence of technology-enabled, app-centered sharing economy interactions, the current research focuses on Airbnb as a peer-to-peer access-based service. The study respondents were recruited with a Facebook message that circulated among various networks, soliciting participation. The message included a brief introduction to the study, bullet point instructions, a link to the consent form, and another link to the survey instrument. The invitation text also highlighted requirements for participation, to ensure that the sample was limited to consumers at least 18 years of age who had direct experience with Airbnb services in the six previous months. Those who did not meet these criteria were thanked and asked not to complete the survey. Qualified respondents could click on the link when it was convenient, then needed to follow the provided instructions to complete the survey, as well as disseminate the message to their Facebook friends.

We received 227 responses, 87.6% of which came from participants between the ages of 18 and 44 years ($M = 36$). In addition, 70.0% were employed, and 15.9% were students. About 63.4% were Caucasian, 24.6% Hispanic, 6.3% Asian, and 5.4% African American. Roughly half (50.2%) were married, while 49.8% were single. Whereas 0.4% had not completed high school, 1.8%, 6.2%, 51.1%, and 26.4% had completed high school, associate, bachelor, and graduate programs, respectively.

3.2. *Measures*

To measure PCE, we used an adaptation of Schaufeli et al.'s (2002) scale, which features a second-order construct with three dimensions: vigor (six items), dedication (five items), and absorption (six items). Both in-role and extra-role BCE were measured as second-order constructs, with adaptations of Torkzadeh et al.'s (2022) scale. In-role BCE includes information seeking (four items), information sharing (four items), responsible behavior (four items), and personal interaction (four items). Extra-role BCE encompasses feedback (four items), advocacy (four items), helping (four items), and tolerance

(four items). For service quality (Dabholkar et al. 2000) and goal attainment (Dellande et al., 2004), we used 4-item scales. All the preceding measures used Likert-type scales, anchored by “Strongly Disagree” (=1) and “Strongly Agree” (=5). Finally, loyalty used another 4-item scale (Watson et al., 2015) that featured a semantic differential design.

Among Airbnb customers, in-role BCE, extra-role BCE, and service quality perceptions might emerge at two stages: *pre-site* or virtual, where customers interact with the app to browse and book a lodging, and then *on-site* or physical, as arise once the customer has experiences with the host facilities. Therefore, we measured the variables separately with respect to customer pre-site and on-site experiences to extract data for both Airbnb and the lodging host, as well as minimize the possibility of confounds. Thus, we tested each of the hypotheses involving in-role BCE, extra-role BCE, and service quality twice, whereas PCE, goal attainment, and loyalty were measured once each, targeting respondents’ perceptions and intentions toward the service as a whole.

4. Results

4.1. Reliability and Validity

The measurement model was examined using SmartPLS 3.0 (partial least squares structural equation modeling). Convergent validity was assessed by factor loadings, Cronbach’s alphas, composite reliabilities, and average variances extracted (AVEs). As shown in Appendix 1, the factor loadings all exceed the required threshold of .50, and the Cronbach’s alphas and composite reliabilities are greater than .70 (Naylor et al., 2012). Moreover, the AVEs in Table 1 range from .63 to .93. These results support the convergent validity of the measures. To check for discriminant validity, we use two steps and the statistics in Table 1. First, the bivariate correlations are lower than square roots of the corresponding AVEs (Chin, 1998). Second, the heterotrait–monotrait ratio of correlations is below 1.0 (Henseler et al., 2015; Hair et al., 2017).

Table 1. Descriptive statistics and measure validation

Pre-Site (Provider: Airbnb)								
	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. PCE	2.05	.69	.67					
2. In-Role BCE	1.85	.68	.58	.67				
3. Extra-Role BCE	2.71	.96	.53	.63	.63			
4. Goal Attainment	1.72	.72	.62	.53	.51	.85		
5. Service Quality	1.98	.82	.40	.52	.57	.68	.87	
6. Customer Loyalty	2.12	1.40	.28	.34	.29	.37	.35	.81
On-Site (Provider: Host)								
1. PCE	2.05	.69	.67					
2. In-Role BCE	1.91	.69	.65	.72				
3. Extra-Role BCE	2.57	.92	.61	.56	.67			
4. Goal Attainment	1.72	.72	.62	.58	.43	.85		
5. Service Quality	1.88	.86	.39	.41	.28	.64	.93	
6. Customer Loyalty	2.08	1.44	.28	.31	.23	.37	.31	.81

Notes: Bold and regular fonts signify square roots of the AVEs and correlations, respectively. The two sections represent the two sets of data for participation and citizenship behaviors and loyalty.

4.2. Common Method Bias and Multicollinearity

To check for common method bias and multicollinearity, we used the guidelines provided by Podsakoff et al. (2003). First, the items were carefully adapted and improved by experts familiar with the research topic and context. Second, in the survey, we separated the exogenous and endogenous variables by other measures (not part of the current research). All the variance inflation factors were below the acceptable cut-off point of 10.0, so multicollinearity does not appear to be an issue (Hair et al., 1995).

4.3. Hypothesis Testing

In SmartPLS 3.0, we test separate models to reflect the existence of separate pre-site and on-site data in relation to H1–H7. As we depict in Figure 1, the hypotheses pertaining to the pre-site data (i.e., service provider: Airbnb) take the additional designator *a* (i.e., H1a–H7a), and those pertaining to the on-site stage (i.e., service provider: host) are demarcated using the letter *b* (i.e., H1b–H7b).

As the results in Table 2 reveal, *R*² ranged from .15 to .42 across the two tested models, explaining a substantial portion of the variation in each of the endogenous variables (Hair et al., 2012). Moreover, the Stone-Geisser’s blindfolding values indicate that *Q*² ranges from .09 to .63. Therefore, the exogenous variables have moderate to high

capacity to predict the endogenous variables, underscoring the acceptability of the theoretical model (Hair et al., 2012).

Table 2. Path coefficients and model fit

	In-Role BCE	Extra-Role BCE	Service Quality	Goal Attainment	Customer Loyalty
Pre-Site (Provider: Airbnb)	(R2 = .34)	(R2 = .28)	(R2 = .37)	(R2 = .33)	(R2 = .16)
PCE	.58*** (.08) H1a	.53*** (.08) H2a			
In-Role BCE			.29*** (.13) H3a	.34*** (.10) H5a	
Extra-Role BCE			.10 (.12) H4a	.08 (.10) H6a	
Service Quality					.26** (.12) H7a
On-Site (Provider: Host)	(R2 = .42)	(R2 = .38)	(R2 = .17)	(R2 = .31)	(R2 = .15)
PCE	.65*** (.05) H1b	.61*** (.06) H2b			
In-Role BCE			.45*** (.14) H3b	.59*** (.17) H5b	
Extra-Role BCE			-.06 (.12) H4b	-.01 (.09) H6b	
Service Quality					.30*** (.10) H7b
Singular Data					
Goal Attainment					.18* (.14) H8

Notes : 3000 bootstrap samples, 300 iterations; * $p < .05$, $t = 1.96$; ** $p < .01$, $t = 2.56$; *** $p < .001$, $t = 3.29$. The two sections represent the two sets of data for participation and citizenship behaviors and loyalty.

In H1a/b we postulated a positive, significant association between PCE and in-role BCE; we find support for it in both the pre-site ($\beta = .58$; $p < .001$) and on-site ($\beta = .65$; $p < .001$) data. We also predicted that PCE is positively and significantly associated with extra-role BCE, and again find support from the pre-site data ($\beta = .53$; $p < .001$) and the on-site data ($\beta = .61$; $p < .001$), so we can confirm H2a and H2b.

With regard to the positive association between in-role BCE and perceived quality we predicted in H3a and H3b, the path appears significant and positive in both the pre-site ($\beta = .29$; $p < .001$) and on-site data ($\beta = .45$; $p < .001$). Next, H4a/b predict a positive and significant association between extra-role BCE and perceived quality, but instead the paths are not significant for either pre-site data ($\beta = .10$; $t = 1.04$) or on-site data ($\beta = -.06$; $t = .50$). Therefore, H4a and H4b are not supported.

In H5a/b, we predict that in-role BCE is positively and significantly associated with goal attainment, as is evident in the pre-site data ($\beta = .34; p < .001$) and on-site data ($\beta = .59; p < .001$). Turning to H6a/b, whereas we anticipated a positive and significant association between extra-role BCE and goal attainment, the results do not support this link, in that the related paths are not significant for pre-site data ($\beta = .08; t = .91$) or on-site data ($\beta = -.01; t = .14$), and thus, we reject H6a and H6b.

According to H7a/b, perceived service quality is positively and significantly associated with customer loyalty at both the pre-site and on-site stages. This hypothesis is supported by the pre-site data ($\beta = .26; p < .01$) and the on-site data ($\beta = .30; p < .001$). Additionally, H8 predicts that goal attainment is positively associated with customer loyalty. We confirm H8, because we find a positive and significant association between goal attainment and customer loyalty ($\beta = .18; p < .05$).

5. Discussion

Although PCE represents a popular topic of research in marketing and management literature (Mistilis et al., 2014), this stream lacks sufficient empirical evidence of the value provided by PCE. Therefore, we build on prior conceptual work, such as studies by Hollebeek (2011) and Vivek et al. (2012), to examine the impact of PCE on BCE and subsequent service outcomes in the context of informal peer-to-peer accommodation services.

Technology offers many innovations for service industries, and one of the most influential has been the rise of the informal accommodation sector, which allows customers to connect with hosts that have the capacity to offer a service originally offered only by established lodging and transportation companies. Thus, customers turn to Airbnb, HomeAway, and VRBO for lodging accommodations (Zervas et al., 2017), using informal accommodation portals that require them to exhibit greater PCE than they would need to do if they sought traditional lodging outlets.

Accordingly, we turn to co-creation and S-D logic literature to predict pertinent relationships between PCE and key service outcomes. The findings suggest that customers who exhibit a pertinent level of engagement tend to have the necessary in-role BCE toward the task, which results in greater goal attainment, perceived service quality, and loyalty. These findings are consistent with extant

discoveries (Ashforth & Humphrey, 1995; Kahn, 1990, Rich et al., 2010) that suggest people who are highly engaged in co-creation devote the necessary emotional and cognitive effort to complete the service. These findings also correspond with findings from service quality literature, in which a key determinant of service quality is co-creation behavior (Elsharnouby & Mahrous, 2015; Torkzadeh et al., 2016, 2021). A key component of success in delivering high service quality is that all stakeholders know and understand their roles. In the context of technology-enabled service sectors, customers also must be able to use the sites, hosts must provide the guaranteed accommodations, and the lodging site itself must facilitate effective communication between the customer and host. Failure by any of these stakeholders to fulfill their roles can lead to service failure and diminished customer lifetime value, due to low perceptions of service quality and goal attainment.

Comparing the pre-site and on-site models reveals noteworthy differences. The positive associations between PCE and both in-role and extra-role BCE, as well as between in-role BCE and service quality or goal attainment, were consistently stronger during the on-site stage. This suggests that psychological engagement may translate more readily into concrete behaviours and outcomes when customers are physically present and interacting with hosts, where social and contextual cues reinforce role expectations. In contrast, the extra-role BCE hypotheses (H4a/b and H6a/b) were not supported at either stage, indicating that discretionary citizenship behaviours may be less responsive to engagement in technology-enabled sharing contexts. These stage-specific insights enrich the theoretical framework by highlighting how the context of interaction (virtual vs. physical) moderates the strength of engagement mechanisms.

Notably, we find no support for the expected relationship between extra-role BCE and subsequent outcomes. Customers who demonstrate extra-role BCE by providing feedback, tolerance, help, and advocacy (Yi & Gong, 2013) arguably should be rewarded, such as by being treated well by other customers or receiving recognition from the service provider (Gilliam & Rayburn, 2016); these rewards then should motivate customers to engage in such behavior. However, we cannot confirm this relationship, which might be due to the context of the service encounter we investigate. That is, it does not allow for face-to-face, co-created service encounters. Customers might be able to display feedback through reviews, but attention from other customers or the service provider likely come later, or not at all, so

some customers simply avoid offering reviews or assistance. Likewise, customers might be limited in their ability to exhibit other extra-role BCE, such as tolerance, help, and advocacy, which would produce a lack of support for the predicted relationship.

6. Implications

6.1. *Research Implications*

This study provides empirical evidence of the impact of PCE on subsequent service outcomes not cited in previous literature. Furthermore, it contributes a formal measure of PCE, comprised of (1) vigor, or the energy dimension, reflecting the level of energy and mental resilience used to interact with physical and social elements of the destination; (2) dedication, which is the emotional dimension and which refers to a sense of belonging to the specific interactive experiences with the destination; and (3) absorption on a cognitive dimension, defined the level of customer concentration on specific interactive experiences with the destination. We also explore the nature of PCE and BCE from customer perspectives, in the context of technology-enabled services in the sharing economy, which are quite popular. Thus, we feel confident that the accumulated findings provide a step toward a comprehensive theory of consumer engagement in tourism.

6.2. *Managerial Implications*

Managers of technology-enabled service sites must ensure that all parties are aware of their engagement roles, required for them to participate. Although most sites describe these roles in text, stakeholders might find it useful to receive more in-depth guidance, best practices, or short videos that detail the key responsibilities of each stakeholder. The sites also might set some minimum standard for the behaviors exhibited by each stakeholder; formal tourism sectors indicate some success with such practices (Casadesus et al., 2010). Managers also might need to reevaluate their communication tools to ensure all parties are capable of sending and receiving video and pictures, beyond text. In addition to centrally located communication pathways, the inclusion of video and pictures may help remedy service failures quicker than if only text were available.

Managers also might consider ways to stimulate extra-role BCE on platforms. Although citizenship behavior is not necessary for service co-creation, it would be in the best interest of firms (Groth, 2005; Yi

et al., 2011). Airbnb gives users a means to post reviews and ratings, which is a type of feedback, but it does not seem to stimulate other, extra-role BCE. Displaying tolerance, help, and advocacy may be especially difficult on technology-enabled platforms. For example, customers have little incentive to help a host in a non-English-language speaking country improve the English signs used to guide customer in the lodging. It might be relevant for the platforms to create a new rating system for extra-role BCE and provide incentives (e.g., future discounts) to get customers to engage in such behavior.

7. Limitations and Directions for Further Research

This study provides empirical support of the relationships among PCE, BCE, and service outcomes in technology-enabled service sectors. Thus, it offers findings pertaining to this nontraditional, peer-to-peer lodging context, and Airbnb specifically. Further research could investigate the relationships in other peer-to-peer sites. In addition, we do not assess any potential moderators of PCE, though Sanz-Blas et al. (2014) identify gender as a relevant moderator of the relationship between the satisfaction and loyalty of people who use online reservations portals. Continued studies likely would be enriched by incorporating this or other moderators. Researchers also might find it valuable to incorporate additional variables, such as satisfaction, trust, and commitment, reflecting their capacity to enhance customer loyalty to online tourism services (Chumpitaz & Paparoidamis, 2005, Hazara & Srivastava, 2009, Sanz-Blas et al., 2014). Finally, continued research could reexamine extra-role BCE to confirm whether data gathered from another technology-enabled service context might provide support for the predicted relationship. Researchers could include customers who use such sites to investigate if and how extra-role BCE is encouraged.

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Appendix 1. Scale items, factor loadings, and key statistics

Scale Items	Loadings	
	Airbnb	Host
PCE		
Vigor (CA = .77; CR = .78) ^a (CA = .77; CR = .78) ^b		
When I get up in the morning, I feel like exploring the world.	.66	.66
When I'm on a journey, I feel bursting with energy.	.70	.70
When traveling, I persevere even when things do not go well.	.60	.60
I feel strong and vigorous as a traveler.	.78	.78
I can stay away from home for very long periods of time.	†	†
I am very resilient mentally when I am away from my usual surroundings.	†	†
Dedication (CA = .85; CR = .85) ^a (CA = .85; CR = .85) ^b		

Escaping my usual surroundings inspires me.	.77	.76
I am enthusiastic about exploring new places.	.77	.77
I am proud of myself as a traveler.	.77	.77
I find a great deal of meaning and purpose in my journeys.	.78	.78
Travel is my kind of challenge.	†	†
<i>Absorption</i> (CA = .73; CR = .73) ^a (CA = .73; CR = .73) ^b		
Time flies when I am away from my usual surroundings.	.66	.66
I get carried away when I am traveling.	.53	.53
I am immersed in tourism.	.60	.60
I feel happy when I take journeys.	.75	.75
It is difficult to detach myself from exploration.	†	†
When I am travelling, I forget my usual self.	†	†
IN-ROLE BCE		
<i>Information Seeking</i> (CA = .83; CR = .83) ^a (CA = .89; CR = .89) ^b		
I asked others about their experiences with Airbnb/the host.	†	.71
I read reviews about Airbnb hosts/the host.	.83	.87
I gathered a great deal of information about Airbnb hosts/the host.	.75	.86
I paid attention to how others interact with Airbnb//the host.	.78	.83
<i>Information Sharing</i> (CA = .83; CR = .84) ^a (CA = .90; CR = .90) ^b		
I clearly explained my expectations to Airbnb/the host.	.57	.76
I gave proper information to Airbnb/the host.	.80	.85
I provided necessary information to Airbnb/the host.	.76	.87
I answered all the questions from Airbnb/the host.	.88	.84
<i>Responsible Behavior</i> (CA = .94; CR = .94) ^a (CA = .90; CR = .90) ^b		
I completed all the tasks required of me as a customer/guest of Airbnb/the host.	.89	.84
I performed all the functions expected of me as a customer/guest of Airbnb/the host.	.90	.87
I fulfilled my responsibilities as a customer/guest of Airbnb/the host.	.93	.86
I followed the rules of Airbnb/the host.	.87	.78
<i>Personal Interaction</i> (CA = .96; CR = .96) ^a (CA = .96; CR = .96) ^b		
I was friendly to everyone I interacted with from Airbnb/the host.	.94	.93
I was kind to everyone I interacted with from Airbnb/the host.	.96	.95
I was polite to everyone I interacted with from Airbnb/the host.	.92	.92
I was courteous to everyone I interacted with from Airbnb/the host.	.91	.93
I didn't act rudely toward anyone I interacted with from Airbnb/the host.	†	†
EXTRA-ROLE BCE		
<i>Feedback</i> (CA = .083; CR = .83) ^a (CA = .88; CR = .88) ^b		
I shared any useful thought I had with Airbnb/the host.	.69	.74
I posted an honest review about Airbnb/the host.	.74	.82
I shared the problems I encountered with Airbnb/the host.	.65	.76
I gave feedback to Airbnb/the host.	.88	.89
<i>Advocacy</i> (CA = .86; CR = .86) ^a (CA = .85; CR = .85) ^b		
I said positive things about Airbnb/the host.	.73	.74
I made recommendations to others to consider Airbnb/the host.	.78	.78
I urged friends and relatives to use Airbnb/the host.	.81	.77
I would defend Airbnb/the host if others criticized them.	.79	.76
<i>Helping</i> (CA = .90; CR = .90) ^a (CA = .91; CR = .91) ^b		
I don't hesitate to respond if others have questions about Airbnb/the host.	.81	.79
I offer help to others who see to have problems with Airbnb/the host.	.86	.84
If necessary, I show others how to best use the services of Airbnb/the host.	.80	.83
I give advice to other guests of Airbnb/the host.	.85	.92
<i>Tolerance</i> (CA = .92 = ; CR = .92) ^a (CA = .93; CR = .93) ^b		
I would be willing to put up with it if I found a problem with the services of Airbnb/the host.	†	.84
I would be patient with errors and mistakes from Airbnb/the host.	.91	.91
I am willing to adapt when I encounter inconvenience with Airbnb/the host.	.89	.86
I show tolerance toward difficulties caused by Airbnb/the host.	.89	.89
SERVICE QUALITY (CA = .96; CR = .96) ^a (CA = .96; CR = .96) ^b		
Airbnb/the host provided high-quality services.	.89	.93

Airbnb/the host offered services at high standards.	.92	.89
Airbnb/the host provided superior services.	.86	.93
Overall, the services of Airbnb/the host were excellent.	.80	.96
GOAL ATTAINMENT (CA = .91; CR = .91) ^a (CA = .91; CR = .91) ^b		
I achieved my goal in that trip.	.80	.87
I fulfilled the purpose of my travel.	.97	.96
I accomplished what I had in mind.	.73	.80
Things worked out for me the way I wanted.	.87	.76
LOYALTY (CA = .94; CR = .94) ^a (CA = .91; CR = .91) ^b		
Unlikely...Likely	.80	.77
Improbable...Probable	.88	.86
Impossible...Possible	.87	.99
No Chance...Certain	.81	.74

Notes: CA: Cronbach's alpha; CR: composite reliability; a: Pre-Site (Provider: Airbnb); b: On-Site (Provider: Host); †: dropped.

Reluctance to “*Return to Office*” after “*Work from Home*” during the COVID-19 Pandemic: An Empirical Study of Influencing Factors

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Abstract

This study explores the intricate relationship between awareness of adverse consequences of the pandemic and the successful deployment of digital technologies by firms, examining their impact on individuals' reluctance to return to the office post-pandemic. Analyzing data from 214 business managers with IT responsibilities, four hypotheses were tested regarding attitudes towards traditional office settings. Hypothesis 1 suggested a positive correlation between pandemic awareness and reluctance to return, while Hypothesis 2 proposed a similar link with successful digital deployment. Our findings support both hypotheses, affirming a robust connection between these factors and reluctance to return. Contrary to expectations, Hypotheses 3 and 4, exploring the moderating and mediating roles of digital deployment, did not find empirical validation. Results highlight the orthogonality of employee-level fear and firm-level digital response success. As organizations navigate hybrid work challenges, this study offers timely insights, emphasizing the need for nuanced strategies in managing the transition. In the contemporary context where global employees question the necessity of a physical office presence after the pandemic-induced "Work from Home" experience, our findings hold significant relevance. This study contributes to the ongoing discourse on the future of work, offering

practical implications for organizations adapting to the evolving landscape of workplace preferences.

Keywords: Work from Home, Remote Work, Pandemic, Digital Response

Introduction

The global outbreak of the COVID-19 pandemic has triggered unprecedented shifts in the way businesses operate, with organizations swiftly adopting work-from-home (WFH) arrangements to ensure the safety and well-being of their employees (Slatvinsky et al., 2022). Consequently, a significant proportion of the workforce in the United States transitioned to remote work, a trend that has persisted even as the immediate threat of the pandemic has waned (Pass & Ridgway, 2022). This persistence raises intriguing questions about the factors influencing the reluctance of employees to return to the traditional office setting.

This study aims to investigate two key factors contributing to this reluctance: the fear factor stemming from heightened awareness of the consequences of the pandemic and the success of digital technologies in facilitating effective remote work. Understanding the dynamics between these factors is crucial for organizations seeking to navigate the evolving landscape of work arrangements in a post-pandemic era.

Telecommuting, commonly known as “Work from Home,” is not a new phenomenon, as its roots extend back over several decades. Remote work has been an integral part of HR practices that allowed workforce flexibility and has been a well-practiced and evolving concept, adapting to technological advancements over the years (Aksoy et al., 2022). However, the recent global pandemic has underscored the urgency and necessity of remote work as a crucial

response to the unprecedented challenges posed by the pandemic crisis. The pandemic has not only disrupted traditional work structures but has also resulted in profound consequences, including a substantial loss of life worldwide. Currently, we are witnessing employee reluctance to “Report to Office” after experiencing the wide-spread “Work from Home” during the pandemic (Raghavan et al., 2021).

The COVID-19 pandemic has catalyzed an unprecedented transformation in the way we work. The imperative of social distancing and health precautions prompted organizations worldwide to hastily transition to remote work arrangements. While some organizations that were aware of the dire consequences of the pandemic offered employees the chance to “Work from Home (WFH)”, others who were less aware did not follow suit and were more tepid in their WFH response (Cheung et al., 2023). That is, we believe that the WFH as a response during the pandemic was driven by the degree of awareness of the detrimental consequences of the pandemic. This monumental shift has stirred a diverse range of sentiments among employees, and as pandemic-induced restrictions began to ease, the “Return to Office (RTO)” became a clarion call (Green et al., 2020). However, there is a burgeoning reluctance among many to revert to the conventional office setting. Understanding the factors influencing the reluctance to Return to Office (RTO) in the aftermath of the COVID-19 pandemic holds paramount importance for various stakeholders (Kakar et al., 2024). Hence, we seek to empirically explore the relatively neglected and under-theorized area of the reluctance to RTO after the WFH during the pandemic.

This study makes the following valuable contributions to research and practice. First, for researchers, delving into this underexplored area can yield insights into the evolving dynamics of work and employee preferences. It provides an opportunity to unravel the intricate interplay of factors such as employee well-being,

productivity, and organizational culture in a post-pandemic world. Second, for practitioners and organizations, this research can guide the development of flexible work policies that align with the changing needs and expectations of their workforce. By comprehending the drivers of reluctance and the potential benefits of remote or hybrid work arrangements, organizations can better tailor their strategies to enhance employee satisfaction and retention. Lastly, policy makers can use these findings to shape labor regulations and incentives that promote a resilient and adaptive workforce. In sum, investigating the reluctance to RTO not only addresses immediate concerns but also contributes to the ongoing discourse on the future of work, making it a valuable endeavor for the years to come.

In the following section, we review the current research literature on remote work, employee reluctance, and hybrid models made available by digital technologies.

Literature Review

“Work from Home” (WFH) phenomenon

The pandemic's impact on remote work cannot be overstated. Organizations were compelled to swiftly adapt, investing in remote technologies and supportive infrastructure (Brynjolfsson & Horton, 2020). This sudden transition exposed employees to the merits of remote work, including enhanced flexibility and reduced commute times. Consequently, employees have developed a distinct preference for remote work during the pandemic, citing its potential to foster better work-life balance and heightened productivity. Bloom et al. (2020) conducted an experiment in China, where employees were randomly assigned to either work from home or work in the office. The authors analyzed various aspects of remote work, including productivity, job satisfaction, and the impact on outcomes and found that workers did better at WFH. Nonetheless, reluctance to return to the office is palpable among a significant portion of the workforce.

Several factors contribute to this reluctance. Foremost is the continued apprehension regarding health and safety concerns linked to returning to the office environment (Brooks et al., 2020). The pandemic has left an indelible mark on our collective psyche, with many employees still harboring anxieties about potential virus exposure in shared office spaces.

Another pivotal consideration is the resumption of daily commutes, which can be time-consuming and stress-inducing (Väänänen et al., 2020). Lengthy commutes are associated with adverse impacts on well-being, and employees may be reluctant to relinquish the freedom from these daily stressors that remote work affords. Furthermore, remote work has ushered in a newfound era of flexibility, allowing employees to tailor their work schedules to their individual lives. Employees fear a regression in their overall quality of life, especially concerning work-life balance. The loss of this flexibility upon returning to the office is a notable source of reluctance, especially those employees with caregiving responsibilities (Jankowska et al., 2023).

Firm-level competitive mindset has been shown to encourage work in the office and discourage work at home. Interestingly, the research indicates a positive association between supervisor goals and employees' work-life balance. When employees perceive higher levels of emphasis for competitive goals from their supervisors, they are more likely to tilt the balance between their work responsibilities and personal lives toward work in the office (Golden & Glick, 2020; Afota et al., 2023).

Change resistance is another relevant factor. Change, even when beneficial, can be met with resistance. The research stream on resistance to change has a long history (Warrick, 2023; Ford & Ford, 2009; Oreg, 2006; Armenakis & Harris, 2002) and examines various personality traits and how they may be associated with resistance to

change, as well as how organizational factors and the specific change context play a role in shaping an individual's reaction to change efforts. The shift back to the office represents a significant change for employees who have grown accustomed to the comfort and routine established during remote work.

Additionally, there are concerns about communication and collaboration in the post-pandemic office. Many factors influence how individuals adapt to remote work, including personal and contextual factors, such as technology support and family demands. Remote work heavily relies on digital communication tools, and employees may question their ability to collaborate effectively in a face-to-face environment (Leroy et al., 2021). While they shed light on the challenges and opportunities presented by the sudden shift to remote work during the pandemic, they also suggest that WFH, when adopted well, could actually enhance worker productivity and become a preferred way to work.

Managerial trust and control play a substantial role in shaping employee reluctance. Employees who felt trusted and empowered while working remotely may be resistant to returning to a more controlled office environment (Murphy, 2021). Based on this research, our research model considers the influence of company culture on employee reluctance to “RTO” after “WFH” during the pandemic.

Finally, the psychological impact of the pandemic, including anxiety and burnout, can exacerbate employee reluctance to return to the office (Doshi, 2020). The study investigates various aspects of the pandemic's impact on mental well-being, including increased stress, anxiety, and depression among workers. It also explores the factors contributing to these mental health challenges, such as concerns about job security, work-from-home arrangements, and social isolation. These emotional factors can further complicate the transition from

“WFH” back to “RTO” and manifest as employee reluctance to “RTO”.

Thus, the reluctance of employees to return to the office after experiencing the benefits of remote work during the COVID-19 pandemic is a multifaceted issue. It encompasses concerns related to health, work-life balance, personal preferences, and organizational dynamics. As organizations navigate the post-pandemic landscape, addressing these concerns is crucial for ensuring a smooth transition back to the office. As this is a complex phenomenon riddled with many influencing factors, we focus on one negative (*fear factor*) and one positive (*success factor*: successful deployment of digital gadgetry and software) in this empirical study on employee reluctance to “Report to Office” after the pandemic.

The Fear Factor in Workplace Dynamics

The psychological impact of the pandemic on employees' perceptions and attitudes toward returning to the office is rooted in the fear factor. Research suggests that the fear of contracting or spreading the virus has profound implications for individuals' decision-making processes, influencing their willingness to resume on-site work (Takeuchi et al., 2023; Agba et al., 2020). This heightened awareness of the potential consequences of the pandemic has led to a paradigm shift in work preferences, with employees increasingly valuing the safety and flexibility offered by remote work arrangements (Caligiuri et al., 2021).

Several studies highlight the relationship between fear and employee well-being. The fear of health risks, compounded by uncertainties surrounding the ongoing pandemic, has been associated with increased stress and anxiety levels among employees (Johnson et al., 2020). As employees prioritize their health and well-being, the fear factor becomes a significant determinant in their decision-making regarding returning to the office environment.

Digital Transformation Spurred by the Pandemic

The successful adoption and integration of digital technologies have been pivotal in enabling the widespread implementation of remote work. Organizations that have embraced digital transformation initiatives before and during the pandemic have witnessed a smoother transition to remote work, with employees equipped with the necessary tools and infrastructure to maintain productivity (Battisti et al., 2022). The effectiveness of digital technologies in supporting remote work has implications for employees' perceptions of the feasibility and desirability of returning to the office.

The advent of digital collaboration tools has redefined the landscape of remote work. Research indicates that the successful implementation of virtual collaboration platforms, such as video conferencing and project management tools, has contributed to sustained levels of employee productivity during remote work periods (Mitchell, 2023). The convenience and efficiency afforded by these technologies may influence employees' preferences and contribute to their reluctance to revert to traditional office-based work structures.

Hypotheses

As the "work from home" paradigm gained prominence during the recent pandemic, reshaping traditional notions of work arrangements, a pivotal shift occurred in the landscape of occupational preferences. Literature has extensively explored the implications of this transformative experience, with a particular focus on the post-pandemic era marked by a distinct hesitancy among employees to resume on-site work. Building on the foundational insights from this body of research, this study posits two primary factors driving contemporary reluctance to "Report to Office" after the pandemic. Specifically, we examine the role of individuals' heightened awareness of the consequences of loss of life due to pandemic, a psychological response stemming from the pandemic, and the success

of deployment of digital gadgets and software that facilitated remote work during this critical period. Against this backdrop, two hypotheses investigate the correlations between these factors and the reluctance to return to the office setting. These hypotheses are depicted in Figure 1 below as two direct effects impacting the reluctance to report back to office.

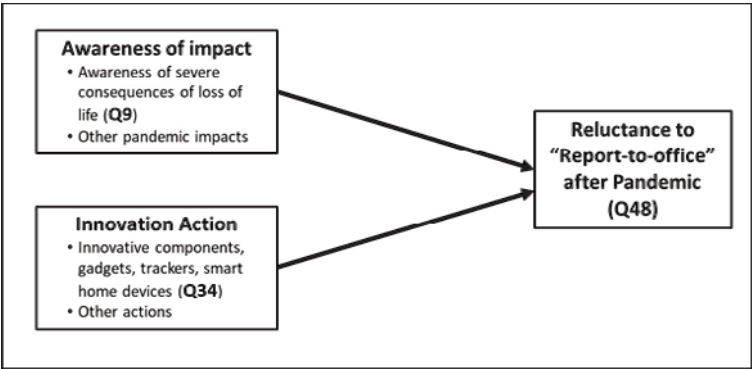


Figure 1: Direct Effects Model

- Hypothesis 1.** *Awareness of consequences of loss of life due to pandemic is positively correlated with the reluctance to “Report to Office” after a pandemic.*
- Hypothesis 2.** *Successful deployment of digital gadgetry and software during the pandemic is positively correlated with the reluctance to “Report to Office” after a pandemic.*

Having established a foundation for understanding the individual influences of heightened awareness of the consequences of loss of life and the success of digital technologies on the reluctance to "Report to Office," this study extends its inquiry to the interplay between these factors. Recognizing the complexity of post-pandemic work dynamics, our third hypothesis posits that the successful deployment of digital gadgetry and software during the pandemic may not only independently influence reluctance but also serve as a moderating factor, shaping the relationship between individuals' awareness of

consequences and their reluctance to return to the office setting. In Figure 2 below, this study seeks to unveil the nuanced interactions between psychological responses to the pandemic and the technological advancements that have redefined the contemporary workplace landscape.

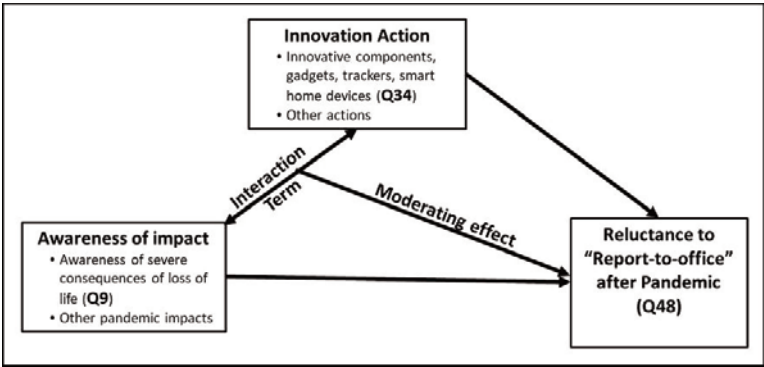


Figure 2: Moderating Effects Model

***Hypothesis 3.** Successful deployment of digital gadgetry and software during the pandemic moderates the relationship between awareness of consequences of loss of life due to pandemic and the reluctance to “Report to Office” after pandemic.*

Building upon the intricate relationships explored in our third hypothesis, which examines the potential moderating role of successful deployment of digital gadgetry and software, we extend our inquiry to consider the mediating pathways within the framework of post-pandemic work preferences. Hypothesis 4 posits that the success of digital technologies not only moderates (tested in Hypothesis 3), but also mediates the relationship between individuals' awareness of the consequences of loss of life and their reluctance to "Report to Office." In Figure 3 below, this study aims to unravel the mediation effects through which technological advancements may shape and

channel the psychological responses to the pandemic, shedding light on the nuanced interplay between these factors in influencing the evolving landscape of workplace preferences.

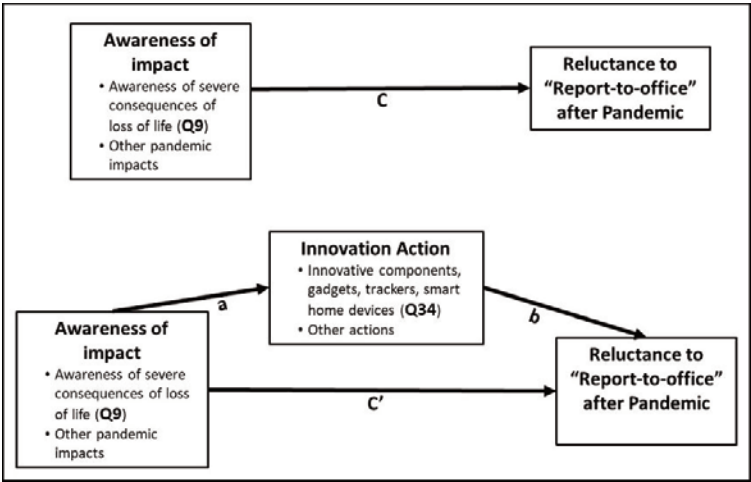


Figure 3: Mediation Effects Model

Hypothesis 4. Successful deployment of digital gadgetry and software during the pandemic mediates the relationship between awareness of consequences of loss of life due to pandemic and the reluctance to “Report to Office” after pandemic.

With the hypotheses articulated to explore the multifaceted relationships between awareness of consequences due to pandemic, successful deployment of digital gadgetry and software, and the reluctance to "Report to Office," our attention turns to the methodology employed to empirically investigate these dynamics. The following section provides a comprehensive overview of the sample selection, research variables, and the meticulous data collection process undertaken to rigorously test the proposed hypotheses, allowing for a nuanced understanding of the intricate interplays shaping post-pandemic work preferences.

Research Methodology

Data Collection

The data for our study is drawn from a national-level survey of small and medium-sized enterprises (SMEs) conducted in the United States with a focus on digital transformation and innovation during the Covid-19 pandemic. The data collection effort was managed by a third-party party Qualtrics. We specified our data requirements in the contract, and they finally collected 214 completed surveys. The survey was designed to collect data on critical variables related to the broader phenomena of awareness of the pandemic, digital capabilities, motivation for digital action and organizational responses. The data variables related to remote work were included in the survey questionnaire.

Qualtrics utilized one or more research organizations who maintain respondent panels and these panels represent the required sampling frame. We targeted professionals and managers in SMEs, which were in business during the Covid-19 pandemic. Respondents were identified by asking two filter questions that were used to eliminate respondents who did not possess the desired characteristics. First, they should be responsible for decision-making in one or more functions related to digital transformation, digital innovation, or digital (computer-based) operations. Second, they should have been in business during the Covid-19 pandemic period (March 2020 – March 2022).

The pilot test for the survey instrument was conducted with five respondents who have current experience and expertise in digital transformation and business process implementation (convenience sampling). The procedure used to develop the final instrument is briefly described here. The survey questions were drawn from extant literature (Zhou & Wu, 2010; Recker & von Briel, 2019; Rai, 2020; Watson et al., 2020; Anwar et al., 2021) that measured each of the

research variables. The responses from the pilot test were first grouped under conceptual validity (groups of questions tapping into the same construct), and then factor analyses were done to identify the variable that loaded the strongest on the construct being measured (dimensions reduction). Based on the feedback from the pilot respondents, some questions were revised and reworded as required.

The questionnaire was finally pared down to 56 questions where most of them were designed to measure the variables quantitatively. Two of the questions were qualitative to obtain descriptive responses which enabled us to contextualize and gain a rich interpretation for the rest of the responses. For example, QTech (*“Please identify one (or more) digital technologies that you created, developed, adopted, or utilized during the pandemic (some common examples of digital technologies are software applications and products, database storage and access technologies, hardware devices and components, networking/ telecommunication products and components)”*) provided an anchor for the remaining questions in the survey. We have included an appendix that shows the research variables from the survey used in this study. The complete survey questionnaire is not included due to space limitations.

To reach the target sample size of 214, Qualtrics conducted six independent and sequential launches in the identified population groups. After each launch, we carefully reviewed the responses to ensure data quality and if required, made suggestions for the administration of the subsequent launches. For example, we asked to eliminate responses which were completed in less than six minutes, since we determined that these respondents were most likely not conscientious and hence the corresponding data was not reliable. We also examined each response to QTech stated above to ensure it was aligned with the research design and objectives. If it was determined to be not relevant for the study, the respondent was eliminated from the target sample.

In the following section, we discuss further details about the data analysis and findings. We address the limitations of the study including potential biases of the research methodology in a later section.

Measurement of Variables

The dependent variable, Reluctance to “Report to Office”, was measured by asking the respondents a direct measure of their perception of the degree of the resistance/reluctance to coming back to office among the employees in their organizations. The measurement was along a 5-point Likert scale ranging from a high level of resistance (resulting in employee turnover) to a very low level of resistance/reluctance (with employees showing no preference and being content to come back to office). The awareness of adverse consequences of the pandemic were measured on a 5-point Likert scale along several different dimensions. These included consequences of falling sick, loss of life, mental stresses, economic slowdowns, bankruptcy, etc. Finally, digital innovations as organizational responses to the pandemic were measured using a 5-point Likert scale along three dimensions, namely, (i) deployment of digital gadgetry and software, (ii) advanced IT infrastructure and integration and (iii) creation of new digital knowledge in patents, business models and process maps.

Sample Characteristics

The total usable sample size from the survey responses was 214. The sample respondents consisted of business managers with the following characteristics: **(1)** Functional responsibilities in IT/IS/Analytics (55.7%), Operations (24.9%), Sales (6.5%), Finance (4.5%) and all other functional areas of business at less than 3.5%; **(2)** Years of company experience: 5-10 years (38.8%), 10-20 years (29.4%), 2-5 years (19.2%), more than 20 years (11.2%) and less than 2 years (1.4%); **(3)** Years of IS/IT experience: 5-10 years (32.7%), 10-20 years (31.3%), more than 20 years (15%), 2-5 years (16.8%), and

less than 2 years (4.2%); **(4)** Age: 31-40 years (38.3%), 41-55 years (32.7%), age >55 years (21%), 25-30 years (6.5%), and age <25 years (1.4%); **(5)** male (51.5% and female (48.4%); **(6)** White (72.4%), Hispanic (10.3%), Black (8.9%), Asian (4.7%), American Indian (1.9%) and Other (1.9%); **(7)** Education: doctoral (5.1%), graduate (31.3%), undergraduate (35.5%), Associate Degree (21%), high school and below (7%).

Data Analysis

To test hypotheses H1 and H2, we used linear regression and the results are shown below in Table 1.

Table 1: Results of Regression for Direct Effects

Linear Regression Model Summary					
Model 1	R	R ²	Adjusted R ²	Standard Error	Durbin-Watson
	0.220	0.048	0.039	1.072	1.529
Beta Coefficients					
Model 1	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	Standard Error	Beta		
(Constant)	6.787	1.386		4.899	0.000
Q9 (Awareness)	-0.153	0.067	-0.162	-2.303	0.022
Q34 (Successful Digital Innovation)	-0.132	0.075	-0.123	-1.755	0.081
ANOVA					
Model 1	Sum of Squares	df	Mean Square	F	p
Regression	11.623	2	5.812	5.056	0.007
Residual	228.758	199	1.150		
Total	240.381	201			

In the conducted linear regression analysis, the dependent variable "Reluctance to Report to Office" (Q48) was examined in relation to two independent variables: "Awareness of Consequence of Loss of Life" (Q9) and "Successful Deployment of Digital Gadgetry and Software" (Q34). The regression coefficients for both Q9 and Q34

were found to be statistically significant at the 0.01 level, indicating that each variable has a significant impact on the reluctance of individuals to report to the office. The R-square value of 0.048 suggests that approximately 4.8% of the variance in the dependent variable can be explained by the linear combination of Q9 and Q34. The statistically significant F-statistic of 5.05 ($p = 0.007$) further supports the overall significance of the regression model. The Durbin-Watson statistic of 1.52 indicates a slight positive autocorrelation in the residuals, suggesting that there may be some serial correlation in the error terms. These results collectively imply that both the awareness of consequences related to the loss of life and the successful deployment of digital technologies play significant roles in influencing the reluctance of individuals to return to the office, providing valuable insights into the factors shaping post-pandemic work preferences. Thus, both H1 and H2 are supported.

To test the moderating effect of "Successful Deployment of Digital Gadgetry and Software" (Q34) on the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48), we ran the Hayes Process Model 1 in SPSS 29.0 for testing moderation effects using the interaction term as an independent variable in the analysis. The results for moderating effects are shown below in Table 2.

Table 2: Moderation Effect of Successful Deployment of Digital Gadgetry & Software

Total, Direct, and Indirect Effects Testing						
Y: Q48 (Reluctance to "Report to Office")						
X: Q9 (Awareness of Consequences of loss of life)						
Moderator W: Q34 (Successful Deployment of Digital Gadgetry & Software)						
Sample Size: 202						
OUTCOME VARIABLE						
Y: Q48 (Reluctance to "Report to Office")						
Model Summary						
R	R ²	MSE	F	df1	df2	p
.221	.0489	1.155	3.396	3.000	198.00	0.0189
Model						
	Coeff	SE	t	p	LLCI	ULCI
Constant	8.155	4.142	1.969	.0504	-.0146	16.324
Q9	-.2185	.1977	-1.1055	.2703	-.6083	.1713
Q34	-.5685	1.2472	-.4558	.6490	-3.0281	1.8911
Intercept	.0207	.0592	.3503	.7265	-.0959	.1374
Product terms key (Intercept): Q9 * Q34						
Tests of highest order unconditional interactions (s):						
	R ² -Change	F	df1	df2	p	
X*W	.0006	.1227	1.000	198.000	.7265	Not Significant
Level of confidence for all confidence intervals in output: 95.000						

The moderating analysis aimed to explore the role of "Successful Deployment of Digital Gadgetry and Software" (Q34) in influencing the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48). Utilizing the Hayes Process Model 1 in SPSS 29.0, the interaction term (Q9*Q34) was included in the regression model. However, the results, as outlined in Table 2, reveal that the beta coefficient for the interaction term contributes to less than 0.1% of incremental change in R-squared, indicating a minimal impact on the variance in the dependent variable.

The F-statistic, with a value of 0.1227 and a corresponding p-value of 0.7265, underscores the lack of statistical significance for the interaction term. Consequently, it can be inferred that "Successful Deployment of Digital Gadgetry and Software" (Q34) does not exert a moderating influence on the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48). In light of these findings, Hypothesis 3 (H3), which posited a moderating effect, is not supported. This insight provides a nuanced understanding of the interplay between the examined variables and contributes valuable information to the broader context of post-pandemic work dynamics.

To test the mediating effect of "Successful Deployment of Digital Gadgetry and Software" (Q34) on the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48), we ran the Hayes Process Model 4 in SPSS 29.0 for testing moderation effects using the interaction term as an independent variable in the analysis. The results for mediation effects are shown in Table 3.

Table 3: Mediation Effect of Successful Deployment of Digital Gadgetry & Software

Total, Direct, and Indirect Effects Testing							
Y: Q48 (Reluctance to “Report to Office”)							
X: Q9 (Awareness of Consequences of loss of life)							
Mediator W: Q34 (Successful Deployment of Digital Gadgetry & Software)							
Sample Size: 202							
OUTCOME VARIABLE							
Y: Q48 (Reluctance to “Report to Office”)							
Model Summary							
R	R ²	MSE	F	df1	df2	p	
.183	.034	1.161	6.958	1.000	200.00	0.009	
Model							
	Coeff	SE	t	p	LLCI	ULCI	
Constant	6.782	1.393	4.870	.000	4.036	9.529	
X (Q9)	-.174	.066	-2.638	.009	-.304	-.044	
Total, Direct and Indirect Effects of X on Y							
Total effect of X on Y:							
R	R ²	MSE	F	df1	df2	p	
.183	.034	1.161	6.958	1.000	200.000	.009	Significant
Level of confidence for all confidence intervals in output: 95.000							
Direct effect of X on Y:							
Effect	SE	t	p	LLCI	ULCI	c’	
-.153	.067	-2.303	.022	-.285	-.022	-.162	Significant
Indirect effect of X on Y:							
	Effect	Boot-SE	Boot-LLCI	Boot-ULCI			
Q34	-.020	.018	-.064	.006	Not significant		
Level of confidence for all confidence intervals in output: 95.000							

The mediation analysis aimed to investigate the role of "Successful Deployment of Digital Gadgetry and Software" (Q34) in mediating the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48). Employing the Hayes Process Model 4 in SPSS 29.0, the results,

presented in Table 3, provide insights into the total, direct, and indirect effects.

The total effect, representing the sum of direct and indirect effects, was found to be statistically significant. The direct effect, illustrating the impact of "Awareness of Consequence of Loss of Life" (Q9) on "Reluctance to Report to Office" (Q48), was also statistically significant. However, the indirect effect, capturing the mediating role of "Successful Deployment of Digital Gadgetry and Software" (Q34), was not found to be statistically significant.

Crucially, examining the bias-corrected and accelerated confidence intervals for the total, direct, and indirect effects revealed that the interval for the indirect effect contains zero, indicating a lack of statistical significance. Consequently, it can be concluded that "Successful Deployment of Digital Gadgetry and Software" (Q34) does not mediate the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48). Therefore, Hypothesis 4 (H4) is not supported. This nuanced understanding of the mediating dynamics contributes valuable insights to the intricate web of factors influencing individuals' reluctance to return to office settings post-pandemic.

Other Non-significant Findings Relevant to WFH

We also want to report that this study is part of a much larger research project which included other variables to investigate digital responses by organizations during the recent pandemic. Briefly we wish to touch on some of the non-significant findings when we examine other variables on which data was collected in the larger project as they relate to our study's research focus. All other "Awareness" variables such as pandemic-induced consequences of mental illness, anxiety, loss of customers, bankruptcy etc. did not impact the reluctance to "Report to Office" after the pandemic. Similarly, a firm's defensive or competitive orientation did not impact the reluctance to "Report to

Office,” though an altruistic orientation exhibited a weak influence. Other positive factors such as greater investment in IT infrastructure or development of patents and novel digital product ideas also did not impact the reluctance to “Report to Office.” Finally, all the eight firm-level Supply Chain variables impacted by the pandemic did not influence the employee-felt reluctance to “Report to Office” after the pandemic. Due to space limitations, we did not provide in this paper the statistical results that revealed these non-significant findings. The complete Qualtrics survey of the larger project which shows all the variables is available from the authors upon request.

Discussion

The empirical findings of this study underscore a notable aspect of the relationship between the variables under investigation. Despite both "Awareness of Consequence of Loss of Life" (Q9) and "Successful Deployment of Digital Gadgetry and Software" (Q34) emerging as significant influencers of "Reluctance to Report to Office" (Q48) in the linear regression analysis, subsequent analyses reveal a distinct and important characteristic. The non-significant moderating and mediating effects of "Successful Deployment of Digital Gadgetry and Software" (Q34) on the relationship between "Awareness of Consequence of Loss of Life" (Q9) and "Reluctance to Report to Office" (Q48) suggest that these variables are, in fact, orthogonal. In statistical terms, orthogonality implies independence, and in the context of this study, it signifies that "Awareness of Consequence of Loss of Life" (Q9) and "Successful Deployment of Digital Gadgetry and Software" (Q34) exert separate and unique influences on individuals' reluctance to return to the office post-pandemic.

This nuanced understanding enhances the interpretability of the results, highlighting the independent contributions of awareness of consequences and the successful deployment of digital technologies to the complex landscape of post-pandemic work preferences.

Recognizing the orthogonality of these variables adds a valuable layer of clarity to the intricate dynamics shaping the attitudes of individuals toward traditional office settings in the aftermath of the global pandemic.

Looking ahead, our research resonates with the broader discourse on the future of work in a post-pandemic world. It not only contributes to our understanding of the delicate balance between tradition and innovation but also highlights the importance of respecting the past while adapting to the evolving needs of the present (Cannice et al., 2022). We are hopeful that our study serves to shed light on adaptation at the organizational level and motivate further research at the ecosystem level.

Managerial Implications

Business managers and practitioners need to anticipate some level of reluctance or anxiety among their employees as they prepare for the transition to the “Return to Office” (RTO) phase. Having experienced the flavor of the flexibility afforded by remote work due to the Covid-19 pandemic, work dynamics and expectations have been fundamentally altered. In addition to the comfort and flexibility of remote work routines, managers should note that there is heightened awareness of health risks which can further amplify this reluctance among employees. Research indicates that understanding employee fears and preferences and then providing clear communication can significantly facilitate the transition process (Lin et al., 2021). Such an approach can create a supportive environment for employees and thereby prepare for a smoother transition back to the office.

Organizations should consider providing reasonable incentives, financial and otherwise, that will encourage employees to return to the office. For example, these could include enhanced health and safety measures, well-being and fitness programs, and continuing some form of flexible work arrangements. Such initiatives will demonstrate

commitment to employee well-being, gradually alleviate the fears and hesitation of employees, and thereby increase the likelihood of a positive response from them. Research supports that organizations that prioritize employee health and safety during transitions see higher levels of employee satisfaction and engagement (Shoss, 2021). Our study has shown that the successful deployment of digital technologies is also important in influencing employees' attitudes towards returning to the office. Hence managers should consider offering some form of flexible work routines as incentives.

While employees value work-life balance, managers need to realize that it will vary among individual employees and the implementation methods can be different. Employers should engage in deliberate discussions with the employees to understand their unique needs and preferences depending on the work responsibilities and family situations. Studies have shown that organizations that prioritize work-life balance see lower turnover rates and higher employee morale (Calderwood et al., 2022). Organizations should aim to promote a flexible approach that will be able to accommodate diverse work-life balance requirements also considering other factors such as the workplace culture and teamwork dynamics. Such initiatives can boost employee satisfaction and mitigate the anxiety in the post-pandemic era.

Limitations

The following are some limitations and constraints of the study that could impact the outcomes and research findings. One of the limitations of the methodology is the reliance on self-reported data. The data collected is from individual respondents who were voicing their assessments of success of firm level digital responses during the pandemic. These respondents are IT managers who may be positively biased toward innovative digital technologies at the firm level and might have been involved in deploying them. Another limitation of the research methodology is the potential for selection bias. We

focused on SMEs in the United States and contracted with Qualtrics to administer a panel-based survey which is their service offering. Although we conducted six independent launches, we might have a non-representative sample. This can affect the generalizability of the findings, and the results may not accurately reflect larger organizations or different industry sectors.

Another potential limitation is that other variables not included in the study could also impact work structures in organizations. For example, some organizational work, by design, may not allow work at home options. Future research should examine specific organizational contexts and competitive settings to include other factors. Since this was a cross-sectional study, we suggest future researchers consider longitudinal data to assess changes over time. This will enable them to capture the dynamics of the phenomenon over time and enhance the depth of the analysis.

Conclusion

In conclusion, our research examines contemporary challenges related to the role of tradition of work in office within a rapidly changing competitive landscape shaped by the adoption of digital technologies in all types of organizations. In particular, the tradition of work in offices was upstaged by the recent pandemic and one organizational response was to work from home. However, in the post pandemic era, returning to the office is being resisted by employees. Our research empirically examines the role of employee level awareness and firm level digital responses to this reluctance to return to work in the office.

As organizations grapple with the challenges of transitioning to hybrid work models, our findings suggest a pivotal need for nuanced strategies that go beyond the binary relationship between fear and digital response success. Our findings revealed the orthogonality observed between employee-level fear and firm-level digital response

success. Hence the decision-making processes involved in returning to physical office spaces can be complex and managers need to look beyond “one size fits all” solutions.

Practitioners can draw from our insights to inform strategic decisions in managing the transition to hybrid work environments, recognizing the multifaceted nature of employee concerns and the organizational imperative for digital adaptation. Policymakers, too, can benefit from our research by incorporating a nuanced understanding of these dynamics into future workplace policies. They need to ensure that their expectations are aligned with the preferences and needs of a workforce that increasingly question the traditional notions of office presence.

In essence, our study extends beyond the immediate implications for organizations navigating the post-pandemic landscape. It serves as a catalyst for future research, prompting scholars to delve deeper into the interplay between external influences, organizational responses, and individual choices. By embracing the need for continued evolution, our findings contribute to shaping a resilient and adaptive future for the ever-transforming world of work.

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Appendix

Measurement items for the constructs used in this paper (the complete survey was a comprehensive instrument, having 56 questions).

Awareness of the Impact of the Pandemic (Q9-12): The next set of questions relates to your beliefs regarding the pandemic impact in general that prompted an appropriate organizational response in your firm. *Please rate the degree to which each statement below accurately describes the orientation of your firm collectively due to the pandemic (on a scale of 1 to 5).*

Among the four items below, item #2 was used in the study as the other three were not statistically significant.

1. We believe there were consequences of pain and suffering after illness due to the pandemic
2. We believe there were severe consequences of loss of life

3. We believe there were high levels of emotional stress endured (such as social distancing, travel restrictions, inability to meet family and friends, lockdown measures, etc.)
4. We believe there were high levels of anxiety due to uncertainties in the work environment (e.g., organizational changes, remote work, job loss, etc.)

Innovative Action (Q34-36): Please rate the degree of innovation of technology that you created, developed, adopted, or utilized during the pandemic (on a scale of 1 to 5).

Among the three items below, item #1 was used in the study as the other two were not statistically significant.

1. For the digitized hardware or the required components and/or sub-components that you created, developed, adopted, or utilized for products or services (such as activity trackers, smart home devices, drones, robots, add electronic parts, etc.)
2. For the IT infrastructure or software products that you created, developed, adopted, or utilized for others (such as online repositories, cloud-based solutions, global supply chain integration, commercial software applications, smartphone apps, etc.)
3. For the digital knowledge (patents, business models, software tools, process maps) that you created, developed, adopted, or utilized and did not commercialize, but which could be commercialized by others

Work from Home (Q48): Please indicate your perception of the degree of the resistance/reluctance to coming back to office among the employees in your organization (on a scale of 1 to 5; a 6th option was given: *Not Applicable - WFH was not implemented during the pandemic*).

1. Level of reluctance to come back to office full time

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