

Running Head: INCREASING HOTEL LOYALTY THROUGH PSYCHOLOGICAL OWNERSHIP

Increasing Hotel Loyalty Through Psychological Ownership

Y. Rin Yoon^a

Joann Peck^b

Suzanne B. Shu^a

^aS.C. Johnson School of Business, Cornell University

^bWisconsin School of Business, University of Wisconsin-Madison

This version: March 2024

Please do not share without permission

Author Note

Data, data-analysis scripts, and survey materials are accessible at OSF: <https://osf.io/wz2j5/>

?view_only=0822d5d8c32c40ce8ec1bdfbb3d9dc93.

Abstract

The hospitality industry has long recognized guest satisfaction as a key to building loyalty. However, in such a highly competitive market, interventions to increase satisfaction may be costly relative to their marginal impact. This research proposes psychological ownership of an individual hotel room as a low-cost intervention to increase guest loyalty for the overall hotel, particularly when guest satisfaction levels are already high. An analysis of 14,689 online reviews on TripAdvisor, a naturalistic field experiment in a hotel ($N = 82$), as well as two controlled lab simulation studies ($N = 1,002$) jointly demonstrate that increasing psychological ownership of hotel rooms significantly increases intentions to engage in loyalty-related behaviors, even without an impact on satisfaction. This work extends our current understanding of psychological ownership and customer loyalty by demonstrating that the impact of psychological ownership of a hotel room on hotel loyalty is independent from the effects of customer satisfaction. More broadly, we highlight the role of psychological ownership as an underexplored and cost-efficient driver of hotel loyalty.

Keywords: guest experience, psychological ownership, customer loyalty

Increasing Hotel Loyalty Through Psychological Ownership

Throughout its lengthy history, the hospitality industry has evolved into a market characterized as highly service-oriented, customer-focused, and importantly, hyper-competitive. Challenges such as rising competition, slower growth rates, and the saturation of markets pose formidable barriers for hospitality firms aiming to expand their market shares (Dogru et al., 2020; Tepeci, 1999; Zervas et al., 2017). In this fiercely competitive landscape, loyal customers are an especially important asset for a firm, as they have deep attachment and commitment toward the company (Lee et al., 2007; So et al., 2013), expressed through increased revisit intention (Mattila, 2006a), positive word-of-mouth (Han & Ryu, 2012), share of visits (Tanford, 2013), and brand referrals (Liat et al., 2014).

Satisfaction stands as a reliable method to enhance loyalty, as customers who are more satisfied are more affectively involved with the product and brand and show greater loyalty (Mattila, 2006a; So et al., 2016). Hospitality firms thus acknowledge that their survival and growth depend on their ability to deliver unique, memorable and satisfying guest experiences (Walls et al., 2011). However, given the industry's hyper-competitive nature, creating experiences distinct enough to stand out from the competition has become increasingly challenging. Further complicating the challenge, the competitive intensity escalates customers' expectations and diminishes the marginal utility of satisfaction (Ngobo, 1999), leading to a plateau in customer loyalty beyond a certain threshold of satisfaction level (Finn, 2012).

In an industry that is as service-oriented as hospitality, where every player has ostensibly achieved high levels of customer satisfaction, an important question that arises is whether there is another cost-effective element hospitality firms can improve upon to increase loyalty. In this research, we suggest that small nudges to increase psychological ownership toward a guest's

own hotel room can further advance customer hotel loyalty, irrespective of their impact on satisfaction. This account builds on the psychological ownership literature demonstrating that psychological ownership increases valuation of and stewardship towards the owned object (Peck & Shu, 2009; Shu & Peck, 2011), with its effects potentially extending to associated entities (Fuchs et al., 2010; Pyo et al., 2021; Zhang et al., 2014). Because psychological ownership influences perceptions and behaviors by increasing a sense of ownership rather than the enjoyment derived from using the owned object, strategies aimed at increasing psychological ownership might enhance loyalty even if they do not meaningfully influence guest satisfaction. While psychological ownership has been tested in the hospitality literature for advancing other goals, such as building an emotional bond toward a destination (Liu et al., 2023; Scarpi, 2024), improving tourist behavior (Qu et al., 2021), or building Airbnb host attachment (Lee, Yang, & Koo, 2019), it hasn't been directly applied to as hotel-specific of a target as we investigate here.

We propose that even small adjustments to guest experience design that are as costless as simply allowing customers to select their own room from a floor plan can foster a greater sense of ownership of a room and, consequently, loyalty to the hotel. We first present our theoretical framework and predictions in sections below, then provide evidence through an analysis of online hotel reviews, two laboratory studies, and a field study at a hotel, demonstrating that psychological ownership of a hotel room increases loyalty even without markedly changing guest satisfaction.

The Impact of Psychological Ownership

What is psychological ownership? Distinct from legal ownership, psychological ownership is a perceptual state and is best captured as the territorial feeling that something is “mine!” (Pierce et al., 2001). Psychological ownership was first explored in organizational

settings where it has been found that employees who feel psychological ownership toward their employer's firm are more engaged and productive (Pierce et al., 2001; Van Dyne & Pierce, 2004). From those organizational findings, the concept of psychological ownership has been brought into consumer behavior research, where it has been found to increase consumers' value of products (Morewedge et al., 2021; Peck & Shu, 2009; Shu & Peck, 2011). Research on psychological ownership has shown that peoples' perceptions of ownership can be increased even for objects not legally owned, such as public lakes and parks (Peck et al., 2021). In the hospitality literature, it is generally applied to the overall destination (Liu et al., 2022, Qu et al., 2021, or Lee et al., 2019) rather than a specific target like a hotel room. In essence, psychological ownership can develop for objects that are both material (e.g., a consumer product) and immaterial (e.g., one's company), and is a concept distinct from legal ownership.

Research on psychological ownership has identified three antecedents: control, investment of self, and intimate knowledge (Pierce et al., 2001; 2003). If any of these antecedents is increased, the overall feeling of ownership towards the target is increased. The first antecedent, controlling the target, includes the ability to use an object and to decide who else uses an object (Rudmin & Berry, 1987). Children as young as three years old infer that an object belongs to the person who decides whether others may use it (Neary et al., 2009). Even physical control, such as merely touching an object (Peck & Shu, 2009) or imagining touching an object (Peck et al., 2013), leads to an increase in psychological ownership. Controlling aspects of a service or process leads to a greater feeling of ownership (Asatryan & Oh, 2008; Lee & Chen, 2011; Kirk, Swain, and Gaskin 2015).

The second antecedent, investing the self into the target, refers to the investment of an individual's time, effort, attention and energy into the target (Pierce et al., 2001). As discussed in

Pierce et al. (2001), Locke (1690) felt that we own what we produce since we invest our labor in the process. Four-year-old children are more likely to infer ownership if someone made a picture (Nancekivell & Friedman, 2014), or if someone creatively modified it (Kanngiesser et al., 2010), both investments of labor. It has also been found that naming an object, an investment of the self, results in greater psychological ownership of that object (Kirk et al., 2018; Stoner et al., 2018).

The final antecedent of psychological ownership is coming to intimately know the target. This is often discussed as being associated and familiar with the target (Beggan & Brown, 1994; Pierce et al., 2001; Rudmin & Berry, 1987). If a person has more information and knowledge about a specific object, they feel more ownership towards it. For example, a person may feel a local restaurant is “their” restaurant because they frequently eat there, or a particular destination is “their” spot because they have visited before (Liu et al., 2022). The more unique the knowledge held by the customer, the higher the feeling of ownership.

Once activated, psychological ownership implicitly enhances affective reaction to the target and increases perceived value of it (Peck & Shu, 2009; Shu & Peck, 2011). This is at least in part because feeling of ownership associates a target to the self (Weiss & Johar, 2013). People generally have positive self-views, and this positive self evaluation transfers to an object associated with the self, leading them to evaluate the target more positively (Beggan 1992; Dommer & Swaminathan 2013; Shu & Peck, 2011). In one study, for instance, people with more positive implicit self-views evaluated the self-associated objects more positively (Gawronski et al. 2007).

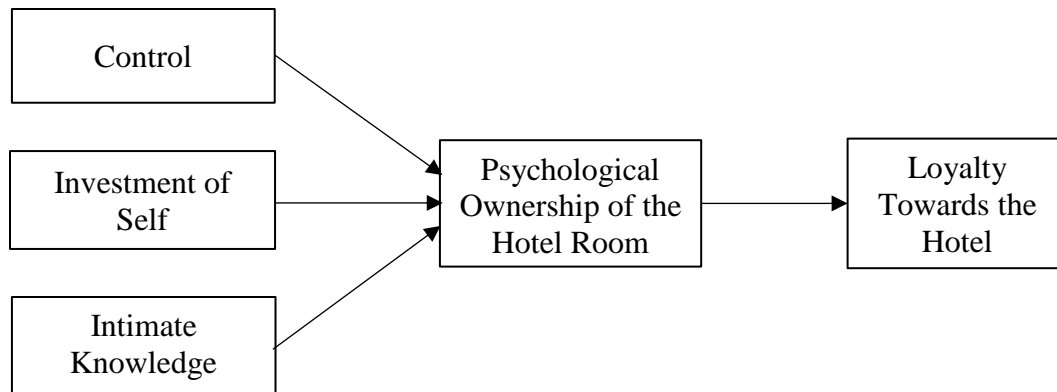
Important downstream consequences of this value-enhancing process include increased stewardship toward the target object. The extant psychological ownership literature has shown that psychological ownership of a target translates to stewardship for the target because

individuals feeling stronger ownership toward a target become more likely to take on responsibilities to take care of it (Peck et al., 2021; Shu & Peck, 2018; Liu et al., 2022). When the owned target is a consumer good or brand, resulting stewardship is manifested in loyalty behaviors (see Peck & Luangrath, 2023 for review on brand stewardship). Greater psychological ownership of a firm increases positive word of mouth about the firm and reduces intention to switch to competitors (Asatryan & Oh, 2008); greater psychological ownership of a product increases the likelihood of posting about the product on social media (Kirk et al., 2018) and referring the product to others (Fuchs et al., 2010), all of which are well-founded indicators of customer loyalty.

Psychological Ownership and Loyalty for the Hotel

Can a feeling of ownership over a target (a hotel room) motivate loyalty for the target's category (the hotel brand) at large? Psychological ownership may have far-reaching effects beyond the owned object (see Peck & Luangrath, 2023). Effects of ownership have been found to be contagious, such that psychological ownership for a target can readily develop into psychological ownership for more abstract categories to which the target belongs (Pyo et al., 2021). For instance, psychological ownership of a particular product increases loyalty to the product's manufacturer (Fuchs et al., 2010). In another study, psychological ownership of an online brand community increases the willingness to maintain the brand reputation (Zhang et al., 2014). Psychological ownership of a hotel room during one's stay could thus similarly influence attitude toward the hotel brand. Drawing on these findings, we predict that a guest's psychological ownership toward a hotel room will generate greater loyalty for the hotel brand.

Figure 1. Theoretical model.



Overall, we propose that increasing guests' psychological ownership of an individual hotel room can lead to increased customer loyalty for the hotel. In particular, we predict that psychological ownership of a room will increase willingness to care for the entity as well as the broader category the entity belongs to, and motivate loyalty behaviors towards the hotel. Figure 1 provides a summary of our predictions.

Of note, because psychological ownership increases the personal relevance and valuation of the owned object, higher levels of psychological ownership may engender greater satisfaction, which is another factor of customer loyalty (Kwortnick & Han, 2011). We suggest however that the effect of customers' psychological ownership of the room on their loyalty to the hotel will hold even when increased psychological ownership does not significantly increase satisfaction with the hotel, as we expect the effect will be driven by feelings of ownership rather than feelings of satisfaction. In other words, we expect that feelings of ownership can increase loyalty without also needing to go through the path of higher satisfaction.

Prior research has established the effect of psychological ownership on loyalty in various contexts, yet the linkage between psychological ownership toward a specific target (e.g., a hotel room) and loyalty toward the larger brand (e.g., the hotel chain) has not been examined with the exception of Fuchs et al (2010) who looked at product manufacturers outside the hospitality

context. Table 1 summarizes existing research on the effect of psychological ownership on loyalty. Our research adds to this literature by investigating the effect of psychological ownership on loyalty, specifically in context of how psychological ownership of a hotel room may increase loyalty to the hotel. In doing so, we also advance the loyalty literature by demonstrating that psychological ownership of a tangible service element can enhance brand loyalty via a mechanism that does not rely on changes in satisfaction. We test this effect using multiple methods to assess psychological ownership and loyalty; we observe psychological ownership by analyzing the language used in online reviews, and employ scenarios, simulations, and a field intervention to manipulate it. To assess loyalty, we measure loyalty behavior intentions as well as observe actual loyalty behaviors, operationalized as the effort invested in writing online reviews.

Table 1. Examples of research examining the relationship between psychological ownership and loyalty behavior.

Authors	Psychological ownership	Target	Dependent variable	Satisfaction measured?	Examined relationship to satisfaction?	Findings
Asatryan & Oh (2008)	Measured	A restaurant	Loyalty intention towards the target	No	No	Greater psychological ownership of a restaurant had a positive association with intentions to reject offers from competing restaurants, revisit the restaurant even with price increases, and recommend the restaurant to others.
Fuchs, Prandelli, & Schreier (2010)	Manipulated perceived control, or empowerment	A product	Loyalty intention towards the target; loyalty intention towards the target's manufacturer (Study 2)*	No	No	Greater psychological ownership of a product increased the likelihood of referring the product to others and verbally defending it in public. It also increased consumers' expected enjoyment of using the product in public as well as loyalty to the product's company.
Kirk, McSherry, & Swain (2015)	Measured	An investment/gamble	Word of mouth intention	No	No	Greater psychological ownership toward a financial investment had a positive association with word of mouth intentions to talk about one's investment decision to others.
Kirk, Peck, & Swain (2018)	Manipulated each of the three antecedents of PO	Tangible and intangible targets	Intention to post about target on social media	No	No	Greater psychological ownership toward a target increased the likelihood of posting about the target on social media through increased feelings of territoriality.
Lee, Yang, & Koo (2019)	Measured	A platform	Loyalty intention towards the target	No	No	Airbnb hosts feeling greater psychological ownership toward the platform exhibited greater stewardship toward the platform and its users.
Liu et al. (2022)	Measured	A travel destination	Loyalty intention towards the target	No	No	Tourists with a greater sense of psychological ownership towards a destination indicated greater satisfaction and a heightened sense of responsibility and stewardship towards the destination's well-being.
Peck et al. (2021)	Manipulated each of the three antecedents of PO	Public goods	Actual loyalty behavior and loyalty intention towards the target	No	No	Greater psychological ownership toward a public goods such as public parks increased effort in caring for these resources.
Zhang et al., 2014	Measured	An online brand community	Loyalty intention towards the brand*	No	No	Greater psychological ownership of an online brand community had a positive association with intentions to protect a brand against attack, maintain a relationship with a service brand, and resist competitor advances.
This article	Observed PO and manipulated each of the three antecedents of PO	Hotel room	Actual loyalty behavior and loyalty intention towards the hotel*	Yes	Yes	Greater psychological ownership of a hotel room increased loyalty to the hotel, while controlling for satisfaction.

* The target of psychological ownership differs from the target of loyalty.

Overview of Studies

Four studies tested our predictions. Study 1 scraped and analyzed online reviews of a large chain hotel to test whether reviewers who exhibited stronger psychological ownership toward their particular hotel room invested greater effort in writing reviews, especially when their intention of writing a review is to endorse the hotel to others. Study 2, a field study run at a hotel, uses a simple manipulation of psychological ownership of a hotel room and demonstrates an increase in hotel loyalty among actual guests. Specifically, we find evidence that when guests have more control by choosing their room at check-in, an antecedent of psychological ownership, they report greater willingness to return to the hotel as well as tell others about the hotel. Study 3 takes our theoretical model into the lab where we use hypothetical check-in scenarios to test how the three known antecedents of psychological ownership – control, investment of self, and intimate knowledge – can be deployed in a hospitality context to lead to changes in psychological ownership toward a hotel room which then increases loyalty toward the hotel. Finally, in Study 4, we run another lab study that mimics customer interfaces currently deployed in the hotel industry and show that similar customization programs that differ in level of active control can result in different levels of psychological ownership and loyalty, even when the satisfaction that comes through customization is relatively unchanged.

Our data, data-analysis scripts, and survey materials are accessible at https://osf.io/wz2j5/?view_only=0822d5d8c32c40ce8ec1bdfbb3d9dc93.

Study 1: Hotel Reviews on TripAdvisor

The main goal of Study 1 was to provide preliminary evidence on whether individuals expressing psychological ownership toward their hotel room also put greater effort in an important loyalty behavior that takes place online: review writing. We analyzed reviews of a hotel in a large hotel chain on TripAdvisor, one of the world's leading sources for user-generated reviews in the travel sector (About TripAdvisor, 2024). On TripAdvisor, hotel reviewers rate their satisfaction on a 1-to-5 grading system and write a review detailing their experience. Once a review is uploaded on the hotel's page on TripAdvisor, other users can mark it as 'helpful,' with a tally counting the number of helpful votes each review received.

To measure effort and time invested in writing a review, we employed two measures. First, the length of a review served as our primary dependent measure as a longer review contains more details in the review and reflects more reviewer effort. Indeed, review length has been found to positively influence review helpfulness (Mudambi & Schuff, 2010; Yin et al., 2014). We also use the number of helpfulness votes each review received as a secondary dependent measure as this reflects the writer's intent to provide useful insights about their experience. Prior research shows that online reviews rated as more helpful are likely to be more influential to other consumers (Chen, Dhanasobhon, & Smith, 2008).

To assess psychological ownership toward a hotel room, we analyzed the raw text reviews and coded the use of first-person singular and plural possessive pronouns used to refer to rooms (e.g., "my room" and "our room"). This approach is based on prior research indicating that language use can inform intrinsic psychological ownership perception (Pennebaker et al., 2003; Rudmin & Berry, 1987). Specifically, the use of the first-person singular and plural possessive pronouns ("my" and "our") has been shown to be highly predictive of psychological ownership toward the target (Kou & Powpaka, 2021; Kim & Johnson, 2015; Shi et al., 2011).

We then analyzed whether reviewers who indicated psychological ownership of their room are more likely to write longer reviews and receive more helpfulness votes.

Data

We scraped guest reviews for a large franchise hotel located in Hawaii from TripAdvisor. The selection of this hotel was strategic for three primary reasons. First, it is reasonable to presume that the majority of the hotel's guests are visiting for leisure purposes, rather than business, which likely reduces the variability in the intent of their stay. Second, the hotel was notable for a remarkably large collection of reviews, one of largest among U.S. hotels. Lastly, the satisfaction ratings of the hotel indicated a highly satisfactory guest experience (i.e., the mean was above the scale midpoint of 3; $p < .001$; *Median* = 4).

The hotel had 16,714 guest reviews on TripAdvisor with stay dates ranging from March 2002 to November 2023, the point at which we conducted our data scraping. For each review, we gathered stay date recorded as month and year, review text, the guest's satisfaction rating on a scale from 1 to 5, and the number of 'helpful' votes the review received. After excluding reviews that were missing any of these data points (12% of total reviews), and those with word counts exceeding three standard deviations above the mean ($n = 3$), the final data included 14,689 reviews.

To measure the reviewer's psychological ownership of a hotel room, we first identified instances where the first-person singular and plural possessive pronouns ('my' or 'our') appeared 10 or less characters before 'room' in review texts (e.g., 'Walking into our corner room...', 'Our room was wonderful...', 'Our room was cleaned everyday...'). Psychological ownership was quantified by calculating the number of times 'room' was mentioned with possessive pronouns relative to the total word count. This measure served as a proxy for the reviewer's psychological

ownership of the room. The primary dependent variable we used to measuring review effort was the total word count in each review text. We also assessed the number of ‘helpful’ votes received as a secondary dependent variable, with reviews lacking votes coded as 0. Lastly, to control for potential variations in review patterns over time, we used the stay date data to compute the elapsed time from the hotel’s first reviewed stay to the stay date of each review, indicated in months.

Table 2 displays the summary statistics of and correlations between these measures.

Table 2. Summary statistics of and correlations among measures.

	Mean	SD	1	2	3	4
1. Psychological ownership	.002	.005				
2. Review length	116.93	40.17	.077***			
3. Review helpfulness	.25	.95	.041***	.092***		
4. Satisfaction	3.85	1.18	-.046***	-.226***	-.247***	
5. Stay date	187.38	44.40	.029***	-.132***	.356***	-.121***

Note. *** $p < .001$.

Results

We first began with a regression that did not include any control variables, using only standardized psychological ownership of a hotel room to predict review effort. The results of this basic model, presented in model 1 in Table 3, supported our prediction. Reviewers who demonstrated a greater sense of ownership towards their room tended to write longer reviews ($b = 3.10$, $SE = .33$, $t(14,687) = 9.37$, $p < .001$), indicating greater effort put into writing reviews.

Further analysis controlling for satisfaction and stay date maintained a positive association between psychological ownership of a hotel room and review effort ($b = 2.83$, $SE = .32$, $t(14,687) = 8.91$, $p < .001$; see model 2 in Table 3). These findings suggest that the observed correlation between psychological ownership and review effort is not solely dependent on satisfaction or the time of stay.

Table 3. Review effort as a function of psychological ownership of a hotel room.

Dependent variable	Review length (word count)				Review helpfulness (number of helpful votes)			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Psychological ownership	3.10*** (.33)	2.83*** (.32)	-.55 (1.03)		.13*** (.03)	.05† (.02)	.15* (.06)	
Satisfaction rating		-8.24*** (.27)	-8.68*** (.30)			-.32*** (.02)	-.31*** (.02)	
1				2.70* (1.15)				24.09* (11.94)
2				.21 (1.09)				-.25 (13.60)
3				2.21** (.76)				20.84† (11.64)
4				2.31*** (.57)				20.93† (12.27)
5				4.28*** (.53)				-13.38 (11.55)
Psychological ownership × Satisfaction Review length			.89*** (.26)				-.03* (.02)	
					.01*** (.001)	.01*** (.001)	.01*** (.001)	.01*** (.001)
Stay date		-.15*** (.01)	-.15*** (.01)	-.14*** (.01)		.05*** (.001)	.04*** (.001)	.03*** (.000)
pseudo R ²	.01	.08	.08	.09	.02	.39	.39	.39
Analysis method	OLS				Negative binomial regression			

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

To examine whether psychological ownership increased review effort across satisfaction ratings, we regressed review effort on standardized psychological ownership of a hotel room, satisfaction, and their interaction while controlling for stay date, which revealed a non-significant effect of psychological ownership ($b = -.55$, $SE = 1.03$, $t(14,684) = -.53$, $p = .593$), a significant effect of satisfaction ($b = -8.68$, $SE = .30$, $t(14,684) = -29.06$, $p < .001$), qualified by a significant interaction between ownership and satisfaction ($b = .89$, $SE = .26$, $t(14,684) = 3.45$, $p < .001$). We decomposed this interaction using a floodlight analysis, which revealed that reviewers with greater sense of psychological ownership toward a room put more effort writing their reviews when they were at least minimally satisfied with the hotel ($JN \geq 1.89$). Specifically,

a greater sense of psychological ownership increased review length at high satisfaction levels (+1SD; $b = 3.95$, $SE = .45$, $t(14,684) = 8.70$, $p < .001$), but this effect attenuated at low satisfaction levels (-1SD; $b = 1.84$, $SE = .43$, $t(14,684) = 4.28$, $p < .001$).

We further disaggregated the effect of psychological ownership of a room on review effort across the five satisfaction levels, as the motivation behind writing a review might vary for each of the five satisfaction levels (see model 4 in Table 2). We expected the impact of psychological ownership of the hotel on review effort would be most pronounced at the highest satisfaction rating of 5, based on the reasoning that highly satisfied guests are more motivated to write reviews that endorse and promote the hotel's positive attributes to others, a behavior reflective of loyalty (Han & Ryu, 2012; Liat et al., 2014). Our findings indeed showed that guests wrote significantly longer reviews when their satisfaction ratings were equal to or above the scale midpoint ($ps < .003$). However, this pattern did not hold for satisfaction ratings of 2, which are below the midpoint ($b = .21$, $SE = 1.09$, $t(14,684) = .19$, $p = .847$). Interestingly, our analysis also revealed that psychological ownership significantly increased review effort at the lowest satisfaction rating of 1 ($b = 2.70$, $SE = 1.14$, $t(14,684) = 2.35$, $p = .019$). This suggests that when guests are extremely dissatisfied, their psychological ownership of a room might prompt them to compose longer, more detailed negative reviews.

Robustness check. The patterns and statistical significance of these results did not change substantially when we (1) used whether or not a person referred to a room with a first-person possessive pronoun at least once (1 = yes, -1 = no) as a measure of psychological ownership, (2) narrowed our focus to whether the first-person singular possessive pronoun 'my' was used (1 = yes, -1 = no), or (3) tracked mentions of 'room' without first-person possessive pronouns, (i.e. 'a room' or 'the room') and excluded reviews that did not mention the word 'room' ($n = 4,494$), and

used whether or not the word ‘room’ was mentioned with a first-person possessive pronoun at least once as a measure of psychological ownership as a measure of psychological ownership.

We also modeled helpfulness votes as an alternative dependent variable, while controlling for word count. It's important to emphasize that the number of helpfulness votes can serve only as a proxy for review effort, because it reflects how informative other users perceive a review to be, rather than measuring the actual effort the reviewer invested. For instance, other users might regard a less effortful but negative review as highly useful, due to the negativity bias that renders negative information more useful (Casaló et al., 2015). Therefore, while the number of helpfulness votes could still provide valuable insights, it should be considered as an indirect indicator of review effort.

Because most of the reviews in our sample received zero helpfulness votes, the helpfulness votes measure ($M = .25$, variance = .91), exhibited significant overdispersion (an overdispersion parameter of 2.62, $p < .001$ in a log-likelihood ratio test). Thus, we opted for standard negative binomial regressions as opposed to Poisson regressions. Results indicated that reviews by guests who exhibited greater psychological ownership toward a room were more likely to be rated as helpful (model 5 in Table 2). Importantly, the positive association between psychological ownership and the number of helpfulness votes remained marginally significant even after controlling for satisfaction and stay date ($b = 10.20$, $SE = 5.43$, $t(14,684) = 1.88$, $p = .060$; model 6 in Table 2). These results did not substantively change (1) when we excluded reviews that did not mention the word ‘room’ at all, or when we used (2) Poisson regressions or (3) OLS regressions.

Additionally, an exploratory analysis (model 7) examining the interaction between psychological ownership and satisfaction on helpfulness votes revealed a significant effect of

psychological ownership ($b = .15$, $SE = .06$, $t(14,683) = 2.56$, $p = .011$) and a significant effect of satisfaction ($b = -.31$, $SE = .02$, $t(14,683) = -15.77$, $p < .001$), qualified by a significant interaction ($b = -.03$, $SE = .02$, $t(14,683) = -1.97$, $p = .049$). Interestingly, further analysis decomposing this interaction showed that the impact of psychological ownership on helpfulness votes was more pronounced when satisfaction levels were low ($-1SD$, $p = .022$) rather than high ($+1SD$, $p = .591$), which aligns with the negativity bias literature that suggests people deem negative information more useful than positive information (Baumeister et al., 2001; Casaló et al., 2015; Norris, 2021). In other words, users found reviews with high psychological ownership even more helpful when they also had a low satisfaction level. However, disaggregating the effect of psychological ownership on the helpfulness votes across the five satisfaction levels did not show any consistent pattern (see model 8). We thus note again that interpreting this interaction as a measure of review effort warrants caution, though the results continue to indicate the significant main effect of psychological ownership in increasing the number of helpfulness votes received.

Discussion

Study 1 examined effort put into writing reviews provided by thousands of actual hotel guests. Although psychological ownership was generally associated with greater time and effort guests invested in writing their reviews, consistent with our hypothesis, this association was stronger for people who were highly satisfied with the hotel, who were likely writing reviews to endorse and recommend the hotel to others. Higher psychological ownership also affected other users' perceptions of the helpfulness of a review, especially when that the content of the review was likely negative. The results were robust to different model specifications and data inclusion criteria.

Despite this study's tremendous external validity, it has several limitations that we seek to address in the subsequent experiments. First, one limitation of this observational data study is that despite controlling for alternative accounts like the consistency of the hotel and the timing of stays, due to the correlational nature of this data, we are unable to establish a causal relationship between psychological ownership of a hotel room and review effort. We thus conducted controlled experiments to test the causal effect of psychological ownership of a particular hotel room on overall hotel loyalty.

Second, because it is impossible to know from this data the number of guests who stayed at a hotel but did not provide a review on TripAdvisor, we could not assess the true proportion of guests who are willing to engage in loyalty behavior such as review writing. Study 1's results therefore represent the relationship between psychological ownership towards a room and review effort, conditional on choosing to write a review. In the remaining studies, we use a variety of dependent measures that more comprehensively capture the extent to which guests are willing to engage in loyalty behaviors.

Another limitation of this archival field study is the lack of insight into the factors that cultivate a sense of psychological ownership towards a room. Understanding these drivers is crucial as they could potentially shape loyalty behaviors post-stay. In the following series of experiments where we manipulate psychological ownership, we present various ways in which hotels could foster guests' sense of ownership towards their room through simple low-cost adjustments to their check-in process.

Study 2: Hotel Field Experiment

To begin understanding the causal relationship between psychological ownership and consumer loyalty, we conducted a field study at a hotel in a midwestern university town. In this

field experiment, we directly manipulated one of the antecedents of psychological ownership, control, by having a guest either choose their room between two options or having a room assigned, and then measured customer loyalty. We also assessed psychological ownership of a room, as well as the effort guests put into keeping their assigned hotel room clean. This cleanliness effort served as a behavioral proxy for psychological ownership of the room, based on prior findings that increased psychological ownership of an object increases stewardship of that object (Peck et al., 2021; Shu & Peck, 2018).

Method

The study was conducted under two conditions; guests were either assigned a room as usual ($N = 42$) or they had a choice between two different rooms ($N = 39$). Sample size was restricted by the terms of agreement with the partnering hotel.

As part of the hotel's effort to assess customer opinions, a survey was left in the room for the guests to fill out and return. Included in the survey was a measure of satisfaction with the hotel ("How satisfied were you with your hotel stay?" 1=not at all satisfied, 7=very satisfied), the likelihood of engaging in loyalty behaviors such as returning to the hotel and telling others about the hotel (1=extremely unlikely, 7=extremely likely), and the sense of psychological ownership that they felt toward their hotel room, using three items derived from Peck and Shu (2009) (e.g., "I felt like the room I stayed in was mine," 1 = Strongly disagree; 7 = Strongly agree; $\alpha = .84$). Finally, as a secondary measure of psychological ownership, we measured stewardship toward the room by asking the cleaning staff to track how clean the room was after the guest checked out on a 5-point scale (1 = very messy, 2 = messy, 3 = average, 4 = clean, and 5 = very clean). The cleaning staff was blind to both the hypothesis of the study and the assignment of guests to condition.

Results and Discussion

Interestingly, in the choice condition, many guests seemed unsure of which room to choose and asked the hotel staff what room they would choose. Given that the guests were seemingly unappreciative of having a choice, it is not surprising that there was only a small and marginally significant impact on guests' satisfaction ($M_{\text{choice}} = 6.13$, $M_{\text{no choice}} = 5.76$, $t(79) = 1.96$, $p = .054$). It should be noted that the overall means for satisfaction are very high regardless of room choice; people are generally extremely satisfied with their experience at the hotel.

To check whether our manipulation of psychological ownership was successful, we use both the survey measure and the behavioral measure. Guests who chose their own room reported a greater sense of ownership toward their room compared to those who did not ($M_{\text{choice}} = 5.40$, $SE = .18$, $M_{\text{no choice}} = 4.74$, $SE = .16$; $t(79) = 2.74$, $p = .008$, $d = .61$, 95% $CI = [.16, 1.05]$). We also confirmed our manipulation of psychological ownership using our behavioral proxy, as we found that guests who were allowed to choose their own room left the room cleaner as judged by the staff ($M_{\text{choice}} = 4.00$, $SE = .16$, $M_{\text{no choice}} = 3.57$, $SE = .14$; $t(79) = 2.04$, $p = .044$, $d = .45$, 95% $CI = [.01, .89]$), suggesting they had greater motivation to steward for their room, consistent to prior findings (Peck et al., 2021; Shu & Peck, 2018).

Finally, and most relevant to our hypothesis, we tested whether psychological ownership of a room can increase loyalty to the hotel. Despite satisfaction being unaffected, guests who could choose their own room indicated that they were more likely to stay at the hotel in the future ($M_{\text{choice}} = 6.15$, $SE = .15$, $M_{\text{no choice}} = 5.57$, $SE = .19$; $t(79) = 2.38$, $p = .020$, $d = .53$, 95% $CI = [.08, .97]$), as well as tell others about the hotel in the future ($M_{\text{choice}} = 6.28$, $SE = .11$, $M_{\text{no choice}} = 5.64$, $SE = .16$; $t(79) = 3.26$, $p = .002$, $d = .72$, 95% $CI = [.27, 1.17]$). The results remain unchanged when controlling for each guest's length of stay and whether each guest has visited

the hotel in the past. Of note, although the sample size was modest due to the terms of agreement with the partnering hotel, the effect sizes detailed in the results section indicate sufficient statistical power, affirming the reliability and validity of our findings despite the limited sample size. In sum, Study 1's results indicate that a subtle manipulation such as having guests choose their own hotel rooms increases both psychological ownership of a room as well as customer loyalty in an actual hotel environment.

Study 3: Manipulating the Three Antecedents of Psychological Ownership

In Study 3, we transitioned to an online experimental environment to directly manipulate each of the three antecedents of psychological ownership using examples of hotel practices that correspond to each antecedent as our manipulation scenarios. In doing so, we propose different ways hotels can induce a sense of ownership towards a room, and generalize our results across different scenarios. We predicted that having greater control over, investing mental and physical effort in, or gaining intimate knowledge about a hotel room would increase psychological ownership of the room, subsequently increasing guests' loyalty to the hotel. We also expected that this increase in loyalty would not depend on whether or not the manipulation affects guest satisfaction.

Method

Eight hundred two participants ($M_{\text{age}} = 38.86$, range: 19-80; 338 males, 12 non-binary) on the online data survey platform Prolific participated in an online experiment in exchange for monetary payment. Each participant passed an attention check at the beginning of the study. Study 3 had a 4 condition (baseline, control over the target, investment of self, or intimate knowledge) between-subjects design. Participants were randomly assigned to read one of four guided simulation scenarios according to their randomly assigned condition. In all scenarios,

participants were told to imagine that they are traveling by themselves and will be staying at a hotel for few days. In the neutral baseline condition, the hotel was described as very similar to other hotels they have stayed at before, lacking in any distinguishing features. In the first manipulation of psychological ownership condition (control), the hotel was described as one where participants could control and choose the softness of pillows, the type of music that plays when entering the room, the light settings, and the time for when housekeeping will come to clean the room. The second manipulation of psychological ownership condition (investment of self) described a hotel where guests had freedom to invest time and effort in rearranging the modular furniture to suit their preferences. Lastly, the third manipulation of psychological ownership condition (intimate knowledge) described a scenario where the guest noticed a unique fact about the hotel room that was unlikely to be recognized by other guests to that hotel - specifically the history of where the materials of the room's floors came from. After reading the assigned scenario, participants imagined staying in this hotel room and wrote about their predicted experience.

A pre-test confirmed that all three manipulation conditions activated their respective antecedents of ownership. In this pre-test, we recruited 593 participants from MTurk and randomly assigned them to one of four conditions just as in the main study. Participants went through the same procedure as in the main study and answered questions assessing the three antecedents of psychological ownership, specifically, the extent to which they felt (1) their hotel room was highly responsive to their control, (2) they have invested their time, ideas, and effort into their hotel room, and (3) they have more background knowledge about their hotel room (1 = disagree strongly, 7 = agree strongly). A series of one-way ANOVA revealed a significant effect of condition on each of the three antecedent measures ($ps < .001$, $\eta^2s \geq .22$). Confirming our

manipulation, planned contrasts comparing the manipulation scenarios to the baseline scenario revealed that the control scenario induced a greater feeling of control over the hotel room ($M_{\text{baseline}} = 3.30$, $SD = 1.53$ vs. $M_{\text{control}} = 5.32$, $SD = 1.25$; $F(1, 589) = 144.12$, $p < .001$, $\eta_p^2 = .20$), the investment of self scenario induced a greater feeling of investing themselves into the hotel room ($M_{\text{baseline}} = 2.95$, $SD = 1.61$ vs. $M_{\text{invest}} = 4.93$, $SD = 1.46$; $F(1, 589) = 37.66$, $p < .001$, $\eta_p^2 = .06$), and the intimate knowledge condition induced a greater feeling of having personal knowledge of the hotel room ($M_{\text{baseline}} = 3.61$, $SD = 1.55$ vs. $M_{\text{knowledge}} = 5.93$, $SD = .93$; $F(1, 589) = 223.07$, $p < .001$, $\eta_p^2 = .27$). While we observed overlaps between conditions, such as the self-investment manipulation also enhancing perceived control, it's important to emphasize that these overlaps are anticipated, given that antecedents are not mutually exclusive (Pierce et al., 2003). A key takeaway is that initiatives aimed at activating one antecedent are likely to trigger another as well, ultimately achieving the goal of enhancing psychological ownership as a whole.

Table 4 provides specific language used in all four conditions.

Table 4. Language for all four conditions in Study 3.

Condition	Scenario	Writing prompt	Psychological Ownership		Loyalty	
			<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Baseline	The front desk clerk welcomes you to the hotel and gives you the keys to room 437. On your way to the room, you realize that this hotel is very similar to many other hotels you have stayed at in the past. The lobby and main areas are arranged in a standard manner. When you reach your room, it has the typical furniture you would see in most hotels, and is lacking in any distinguishing features from the last hotel you stayed at.	This hotel room is very similar to other hotel rooms you have stayed in. Please describe, in a few sentences, the last hotel room you remember staying in. What was the furniture like? How many beds were in the room? How large was the bathroom?	2.84	0.12	4.85	0.09
Intimate knowledge	The front desk clerk welcomes you to the hotel and gives you the keys to room 437. You get up to the room and notice one unique fact about your room. Other guests would not notice this, and you may be the only one who notices. The wood floors in room 437 are made with reclaimed wood from a beautiful old mansion that used to be up the street. You happen to have this unique inside knowledge about your hotel room because you have previously come across and read the history of both the old mansion and the construction of the hotel.	You have unique inside knowledge about your hotel room that its floors are reclaimed wood from an old mansion in the area. How might having this inside knowledge of your hotel room change how you feel in the room? Would this hotel room feel any different to you than a more standard hotel room?	3.29	0.12	5.64	0.07
Control	The front desk clerk welcomes you to the hotel and gives you the keys to room 437. As she does so, she shows you a menu of options for how you would like your room setup. You are able to pick the softness of your pillow, the type of music that plays when entering the room, the settings for the lights, and the time for when housekeeping will come every day to freshen the room. You select each option that fits you best so that the room will feel exactly the way you want it.	The menu of options for how you would like your room setup includes the softness of your pillow, the type of music that plays when entering the room, and the settings for the lights. What types of customization would you ask for in each of these categories? How would you want your room set up?	3.58	0.13	5.65	0.08
Investment of self	The front desk clerk welcomes you to the hotel and gives you the keys to room 437. As she does so, she lets you know that the furniture in all the rooms at this hotel is designed to be easily moved around and that you are free to arrange the room in any way you prefer. You get up to the room and spend about 20 minutes of your time pushing, pulling, and adjusting the bed and desk to rearrange as you prefer. You put some mental and physical effort into the room, and now the room feels exactly the way you like it.	When you arrived in the room, you spent about 20 minutes pushing, pulling, and adjusting the bed and desk to the ways you wanted. In a few sentences, please describe how you best like your hotel room to be arranged - for example, what kind of effort would you make to rearrange your room to your taste?	3.56	0.13	5.26	0.08

We measured customer loyalty by asking participants to indicate how likely they were to engage in three customer loyalty behaviors (“After your hotel stay, how likely would you be to do the following: write a positive review of the hotel; stay at this hotel again; tell other people about this hotel”; 1 = extremely unlikely, 7 = extremely likely). Participants also rated how satisfied they would be with their stay (1 = extremely dissatisfied, 7 = extremely satisfied). Finally, to assess whether the antecedents indeed increased the psychological ownership of the hotel room, we asked participants to indicate how they felt about the hotel room on a scale 1 (disagree strongly) to 7 (agree strongly): “I feel personal ownership toward this hotel room.”

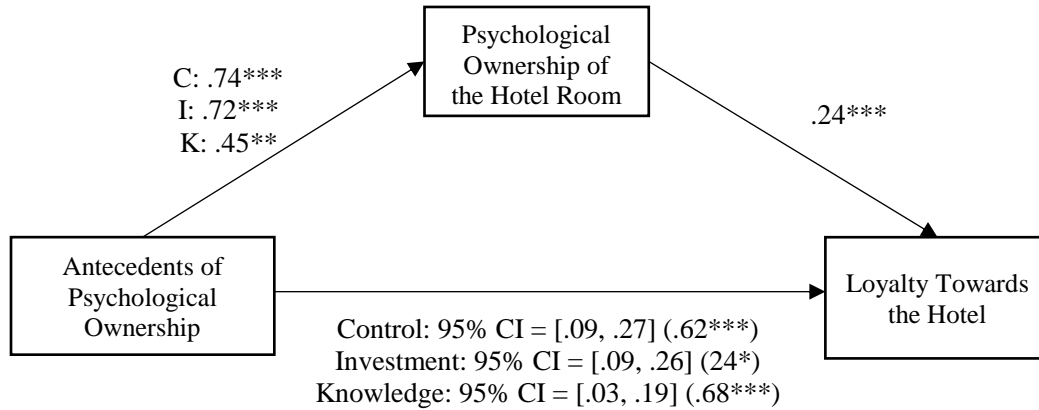
Results

The Antecedents of Psychological Ownership. A one-way ANOVA revealed a significant main effect of the antecedents of psychological ownership ($F(3, 798) = 7.80, p < .001$). Confirming our manipulations of psychological ownership, post-hoc tests revealed that participants in all three psychological ownership conditions, including the control ($M_{\text{control}} = 3.58, SE = .13, p < .001$), investment of self ($M_{\text{investment}} = 3.56, SE = .13, p < .001$), and intimate knowledge ($M_{\text{knowledge}} = 3.29, SE = .12, p = .046$) conditions, felt significantly greater psychological ownership of the hotel room than those in the baseline condition ($M_{\text{baseline}} = 2.84, SE = .12$). There were no significant differences between any of the three psychological ownership conditions (all $p > .32$).

Dependent variables. The three loyalty items were averaged to form a loyalty index ($\alpha = .80$). A one-way ANOVA revealed a significant effect of the antecedents of psychological ownership ($F(3, 798) = 23.63, p < .001$) on loyalty. Supporting our theorizing, post-hoc analyses (Bonferroni) revealed that participants in the three ownership conditions ($M_{\text{control}} = 5.65, SE = .08, t(400) = 6.90, p < .001, d = .68, 95\% \text{ CI} = [.48, .88]$; $M_{\text{investment}} = 5.26, SE = .08, t(388) =$

3.52, $p < .001$, $d = .36$, 95% CI = [.16, .56]; $M_{\text{knowledge}} = 5.64$, SE = .07, $t(398) = 7.00$, $p < .001$, $d = .69$, 95% CI = [.49, .89]) had significantly greater intention to engage in loyalty behaviors in comparison to those in the baseline condition ($M_{\text{baseline}} = 4.85$, SE = .09).

Figure 2. Mediation of conditions on loyalty intention.



Notes. The path coefficients are unstandardized betas. The values in parentheses indicate the effect of each condition on loyalty after controlling for the mediators. * $p < .05$, ** $p < .01$, *** $p < .001$.

Lastly, we examined the effect of the three antecedents of psychological ownership on customer satisfaction. The added guest experiences in our treatment scenarios may have increased willingness to engage in customer loyalty behaviors simply by making the stay more satisfying. Contrary to this account, we found evidence that psychological ownership of a room drives customer loyalty with minimal impact on satisfaction. A one-way ANOVA revealed a significant overall main effect on satisfaction ($F(3, 798) = 14.20$, $p < .001$), but investigation of the individual manipulations tells a more mixed story. The ownership conditions of control and intimate knowledge did increase satisfaction in comparison to the baseline condition ($M_{\text{control}} = 6.28$, SE = .06, $p < .001$; $M_{\text{knowledge}} = 6.11$, SE = .06, $p = .003$; $M_{\text{baseline}} = 5.81$, SE = .06), but investment of self had no effect on satisfaction ($M_{\text{investment}} = 5.80$, SE = .07, $p = .999$). That

investment of self increases customer loyalty while not affecting satisfaction suggests that psychological ownership of a room may motivate customer loyalty through a psychological mechanism independent of changes in satisfaction.

To test this further, we regressed customer loyalty on standardized psychological ownership of the hotel room while controlling for standardized satisfaction with the hotel stay. We used standardized variables across studies to improve the interpretability of the estimates and to address multicollinearity concerns (Marquardt, 1980). This analysis revealed a positive relationship between psychological ownership of the room and customer loyalty ($B = .26$, $SE = .03$, $t(799) = 8.20$, $p < .001$) independent from satisfaction with the hotel ($B = .67$, $SE = .03$, $t(799) = 21.36$, $p < .001$). This result provides additional evidence that psychological ownership of a room motivates customer loyalty through a process that need not involve satisfaction.

STUDY 4: A HYPER-PERSONALIZED HOTEL ROOM

In this study, we explore implications of our findings in context of hyper-personalization in hospitality. Many hotels enhance guest experience via personalizing how the room is set up to each guest's preferences. For example, Table 5 outlines the room personalization practices of five major U.S. hotel chains. Such personalization can be done by asking guests to indicate their preferences each time they book a stay (as done by Virgin Hotels, 2022), or by tracking guest profiles to automatically personalize the room based on each guest's preference history (as done by Marriott International, 2017). Although both methods effectively deliver the end result of more personalized guest experiences, we suggest that personalization that enhances guests' psychological ownership of their hotel room has a stronger impact on overall loyalty.

Table 5. Room personalization practices by five large U.S. hotel chains.

Hotel Chain	Personalization Offered	Specific Room Personalization Services Offered	Service Implementation Method
Hilton	Yes	Room location, room set up	Guest's choice at online check-in
Hyatt	Yes	Housekeeping services	Based on guest profile
Marriott	Yes	Room set up	Based on guest profile
IHG	Yes	Room location, room set up	Based on guest profile
Wyndham	Yes	Room type	Based on guest profile

Using scenarios that closely mirror actual practices in hospitality, Study 4 provides a stronger test of our effect by keeping the end result of customization constant. We manipulate perceived control using a high-control scenario in which participants directly indicate preferences before check-in and a low-control scenario where a hotel automatically personalizes the room based on preference data saved in guests' profiles. We predicted that the level of satisfaction from the personalized room outcome should be constant since both rooms reflect their custom preferences. Regardless, we expected having greater active control over how the room is set up will increase participants' psychological ownership of the room, which will further increase hotel loyalty.

Methods

Two hundred participants ($M_{\text{age}} = 36.40$, range: 19-78; 79 males, 6 non-binary) on Prolific participated in an online experiment in exchange for monetary payment. Participants were randomly assigned to one of two between-subjects conditions: Psychological Ownership high vs. low. We asked all participants to imagine that they had been planning to stay at a hotel by themselves for a few days and were now booking a room using the hotel's mobile application. In the high ownership condition, participants read that they could personalize their hotel room to their taste on an app. They then went through the experience of selecting a floor, a room on that floor, mini bar contents, the type of music that will play when entering the room, pillow softness,

a time for housekeeping visits, and room temperature and light settings (Figure 3). After making a series of choices, participants were led to a confirmation page where they were told they have successfully booked the room of their choice. In the low ownership condition, participants were told that the hotel stores and uses their guest information and previous hotel usage history data to personalize the room on their behalf. Participants were shown the same list of personalization items as in the high ownership condition, but they were told the hotel would automatically set these items to match their preferences before their arrival. They were then led to a confirmation page, indicating which room they were assigned to.

After the booking confirmation page, all participants imagined arriving to their hotel room after a long trip to see that everything, from the location of the room to the temperature, was set to their taste, as either they or the hotel's data-driven personalization system had specified. We then asked participants to write about how they would feel about the modifications made to their room during their stay to help them visualize their stay at the hotel. We next assessed participants' satisfaction with their room, loyalty to the hotel, and psychological ownership of their room using the same measures used in Study 2. As a manipulation check, participants indicated the extent to which they felt they had a control over how their hotel room was set-up on a scale of 1 (disagree strongly) to 7 (agree strongly).

Results

Manipulation check. Confirming our manipulation of psychological ownership via control, participants in the high (vs. low) ownership condition indeed felt they had greater control over how their hotel room was prepared ($M_{\text{high}} = 6.38$, $SE = .09$; $M_{\text{low}} = 4.96$, $SE = .16$; $t(198) = 7.78$, $p < .001$, $d = 1.10$, 95% CI = [.80, 1.40]) and perceived greater psychological

ownership of the room ($M_{\text{high}} = 5.00$, $SE = .17$; $M_{\text{low}} = 4.51$, $SE = .16$; $t(198) = 2.08$, $p = .038$, $d = .29$, 95% CI = [.02, .57]).

Figure 3. Depiction of high control manipulation in Study 3.

Panel A. Choice of a floor, room, and music

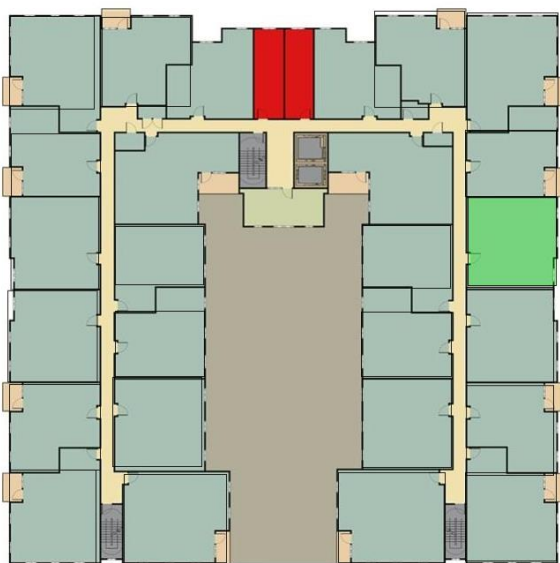
Let's pick a room first.
Please choose a floor of your preference.

Choose a floor

4th Floor
9th Floor
16th Floor

Please choose a room you prefer the most.

Choose your room
9th Floor | Standard King Bed



Choose the type of music that plays when you enter the room.

Classic	New Age	Jazz	Pop	Other (please indicate)
---------	---------	------	-----	-------------------------

Panel B. Choice of mini bar selection, pillows, housekeeping time, temperature and lighting

Now, please indicate your room preference.

Choose what you would like in your mini bar

Sparkling water	Champaign
San Pellegrino	Belgian beers
Mexican Coke	Two bags of macadamia
Diet Coke	Chocolate chip cookies
Sprite	Shortbread cookies
Sparkling rosé	

Choose the softness of your pillows.

soft	soft-medium	medium	medium-firm	firm
------	-------------	--------	-------------	------

Choose a time for when housekeeping will come every day to freshen the room.

early morning	late morning	early afternoon	late afternoon
---------------	--------------	-----------------	----------------

Set your room temperature.

50 60 70 80

Set to

Choose your light settings.

dim	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	bright
cool color	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	warm color

Note. (an online demonstration of this manipulation can be found at: <https://tinyurl.com/hctrl>).

Of note, participants in the high ownership condition also spent longer time to complete the study ($M_{\text{high}} = 325.34$ seconds, $SE =$; $M_{\text{low}} = 268.71$ seconds, $SE =$; $t(198) = 2.36, p = .019$) as they had an extra task of making a series of choices about the room and therefore may have felt more invested in their room. Although both raw and log-transformed time duration did not predict psychological ownership of the room ($ps \geq .45$), we still note that any effect of greater investment of self would not alter our prediction that the high ownership condition will elicit greater psychological ownership of the room.

Dependent variables. The average of the three items assessing loyalty ($\alpha = .82$) showed that participants in the high ownership condition indicated significantly greater intention to engage in loyalty behaviors than the ones in the low ownership condition ($M_{\text{high}} = 6.36, SE = .07$; $M_{\text{low}} = 6.03, SE = 1.17$; $t(198) = 2.38, p = .018, d = .34, 95\% \text{ CI} = [.06, .62]$). Further, consistent with our prediction, the level of satisfaction with the hotel stay was high in both conditions and did not meaningfully differ ($M_{\text{high}} = 6.57, SE = .09$; $M_{\text{low}} = 6.29, SE = .11$; $t(198) = 1.94, p = .054$).

We also regressed customer loyalty on standardized psychological ownership of a room and satisfaction with the hotel. As in Study 2, psychological ownership of the room was positively related to customer loyalty ($B = .27, SE = .05, t(197) = 5.84, p < .001$) while controlling for satisfaction with the hotel ($B = .62, SE = .05, t(197) = 13.18, p < .001$).

Using scenarios derived from real room personalization practices in the hospitality industry, Study 4 provided further evidence that increasing psychological ownership of a hotel room increases loyalty behavior intentions, even without any significant alterations to guests' experiences and their satisfaction with the room. While room customization leads to high satisfaction regardless of its implementation, seemingly minor strategic differences in the

implementation of customization can increase psychological ownership of the room and significantly increase loyalty to the hotel itself.

General Discussion

In an industry as service-oriented as hospitality, where high guest satisfaction is almost universal throughout, increasing loyalty by making a leap in already high guest satisfaction levels could be a challenge, especially considering that the impact of marginal increases in satisfaction on loyalty plateaus upon reaching a satisfaction threshold (Finn, 2012; Ngobo, 1999). Compared to common practices serving this goal, such as providing luxurious treatments, activity programs, and fine amenities, encouraging customers to feel greater ownership of their hotel room may not seem like the most obvious path to increasing loyalty. Our research, however, finds that small adjustments in guest experiences that increase guests' psychological ownership of a hotel room can be a cost-effective way to increase loyalty to the overall hotel. Four studies, using a range of methods such as an analysis of web scraped online hotel reviews, a naturalistic field experiment in a hotel, and controlled lab simulation studies, jointly suggest that increasing guests' psychological ownership of a hotel room increases loyalty for the hotel, even if a change results in minimal or no enhancement in satisfaction.

Our research contributes to the literature in several ways. First, while prior research has primarily focused on how psychological ownership enhances stewardship towards the target object, our studies expand on this by demonstrating that psychological ownership of a hotel room does more than just increase stewardship towards the target (i.e., measured by cleanliness of a room in Study 2) since it also increases loyalty towards the overall hotel, as measured by the amount of effort guests exerted in writing a review (endorsing the hotel; Study 1), and intentions

to return to the hotel, write positive reviews, and spread positive word-of-mouth about the hotel (Studies 2-4).

Second, while most of existing research tests the effect of psychological ownership on loyalty through survey-based measures of both constructs (see Table 1), our research provides evidence from a multi-method approach. We not only observe psychological ownership by analyzing the language used in online reviews (Study 1) but also manipulate it using scenarios, simulations, and an intervention in the field. In assessing loyalty, we measure both loyalty behavior intentions and actual loyalty behavior, the latter operationalized as the effort put into writing online reviews. Overall, our multi-method studies offer high external and ecological validity and generalizes the effect of psychological ownership of a hotel room on loyalty across different measurements and hospitality contexts.

Third, our focus on the effect of psychological ownership of a target on loyalty for the brand is able to show effects independent of changes in guest satisfaction, as the effect persisted when the manipulation of psychological ownership had only marginal (Studies 2 and 4) or no (Study 3; the investment of self condition) impact on customer satisfaction. Collectively, these findings provide evidence that psychological ownership influences loyalty through a mechanism that operates independently of satisfaction.

Beyond theoretical contributions, our research offers practical, cost-effective insights for hospitality firms looking to increase guest loyalty when guests' satisfaction levels are already high. In the hospitality industry, where high guest satisfaction is crucial, firms might hesitate to alter their guest experience strategies especially when their current strategy already meets satisfaction benchmarks. Yet, our results indicate that low-cost and simple interventions at check-in—such as allowing guests to choose their rooms from a floor plan—can significantly

enhance loyalty without substantially changing the overall guest experience or necessitating major investments or overhauls. Notably, the interventions we document in our empirical studies led to increased loyalty while preserving high satisfaction across all study conditions. Hospitality firms may thus be able to improve loyalty from implementing interventions that stimulate any of the three psychological ownership antecedents even if such interventions might not substantially increase satisfaction. Overall, insights from our observational and empirical studies provide firms with evidence-based strategies to design guest experiences that effectively foster loyalty.

Limitations and Future Research

We tested our effect across multiple measurements and settings. However, we highlight considerations for the generalizability of these findings and suggest avenues for future research. First, investigating the boundary conditions of the antecedents of psychological ownership and their effects on loyalty remains an area for exploration. Understanding the contexts or conditions under which these antecedents influence loyalty provide deeper insights into designing interventions to increase psychological ownership of a room and loyalty to a hotel. Future research could also illuminate whether perceived control, investment of self, and intimate knowledge differentially impact loyalty across different customer segments or hospitality settings. Additionally, we note that our exploration of how intimate knowledge and investment of self may be activated within the hospitality context is confined to Study 3. Future research could develop and test novel approaches to manipulate these antecedents in hospitality settings.

To demonstrate the generalizability of our findings, we tested the effect using online reviews, scenarios, a simulation of hotel application check-in, as well as in the field. We note, however, that we focused on U.S. samples, including online participants and hotel guests. Future research could examine whether this effect applies more broadly by testing the effect outside the

U.S. context and with other populations. For example, research suggests that customer engagement in word-of-mouth varies across cultures (Chung & Darke, 2006; Lam et al., 2009); our effects may thus be moderated by cultural differences.

A further limitation of our empirical work is the insufficient data available to thoroughly capture the distinct attributes of guest experience influencing satisfaction, including elements like surprise, delight, service quality, and social interactions with hotel staff. We thus encourage future research to identify which specific aspects of the guest experience are most affected by psychological ownership. Exploring how psychological ownership influences various different dimensions of the guest experience could provide deeper understanding of its relationship with loyalty and satisfaction.

References

- About Tripadvisor. (2024). *MediaRoom*. <https://tripadvisor.mediaroom.com/US-about-us>.
- Asatryan, V. S., & Oh, H. (2008). Psychological ownership theory: An exploratory application in the restaurant industry. *Journal of Hospitality & Tourism Research*, 32(3), 363-386.
- Auh, S., & Menguc, T. B. (2005). Balancing exploration and exploitation: The moderating role of competitive intensity. *Journal of Business Research*, 58, 1652-1661.
- Beggan, J. K. (1992). On the social nature of nonsocial perception: The mere ownership effect. *Journal of Personality and Social Psychology*, 62(2), 229.
- Beggan, J. K., & Brown, E. M. (1994). Association as a psychological justification for ownership. *Journal of Psychology*, 128(4), 365-380.
- Belk, R. W. (1988). Possessions and the Extended Self. *Journal of Consumer Research*, 139-168.
- Belk, R. W. (2013). Extended self in a digital world. *Journal of Consumer Research*, 40(3), 477-500.
- Chen, P. Y., Dhanasobhon, S., & Smith, M. D. (2008). All reviews are not created equal: The disaggregate impact of reviews and reviewers at amazon. com. *Com (May 2008)*.
- Chung, C. M., & Darke, P. R. (2006). The consumer as advocate: Self-relevance, culture, and word-of-mouth. *Marketing Letters*, 17, 269-279.
- Coelho, P. S., & Henseler, J. (2012). Creating customer loyalty through service customization. *European Journal of Marketing*, 46(3/4), 331-356.
- Dogru, T., Hanks, L., Mody, M., Suess, C., & Sirakaya-Turk, E. (2020). The effects of Airbnb on hotel performance: Evidence from cities beyond the United States. *Tourism Management*, 79, 104090.

- Dommer, S. L., & Swaminathan, V. (2013). Explaining the endowment effect through ownership: The role of identity, gender, and self-threat. *Journal of Consumer Research*, 39(5), 1034-1050.
- Finn, A. (2012). Customer delight: distinct construct or zone of nonlinear response to customer satisfaction?. *Journal of Service Research*, 15(1), 99-110.
- Fuchs, C., Prandelli, E., & Schreier, M. (2010). The Psychological Effects of Empowerment Strategies on Consumers' Product Demand. *Journal of Marketing*, 74(1), 65-79.
- Garbarino, E., & Johnson, M. S. (1999). A idea in the development of relationship. *Journal of Marketing*, 63, 70-87.
- Gawronski, B., Bodenhausen, G. V., & Becker, A. P. (2007). I like it, because I like myself: Associative self-anchoring and post-decisional change of implicit evaluations. *Journal of Experimental Social Psychology*, 43(2), 221-232.
- Han, H., & Ryu, K. (2012). Key factors driving customers' word-of-mouth intentions in full-service restaurants: The moderating role of switching costs. *Cornell Hospitality Quarterly*, 53(2), 96-109.
- Kandampully, J., & Hu, H. (2007). Do hoteliers need to manage image to retain loyal customers?. *International Journal of Contemporary Hospitality Management*, 19(6), 435-443.
- Kanngiesser, P., Gjersoe, N., & Hood, B. M. (2010). Transfer of property ownership following creative labour in preschool children and adults. *Psychological Science*, 21, 1236-1241.
- Kim, K., & Johnson, M. K. (2015). Distinct neural networks support the mere ownership effect under different motivational contexts. *Social Neuroscience*, 10(4), 376-390.

- Kirk, C. P., Peck, J., & Swain, S. D. (2018). Property lines in the mind: Consumers' psychological ownership and their territorial responses. *Journal of Consumer Research*, 45(1), 148-168.
- Kirk, C. P., Swain, S. D., & Gaskin, J. E. (2015). I'm proud of it: Consumer technology appropriation and psychological ownership. *Journal of Marketing Theory and Practice*, 23(2), 166-184.
- Kou, Y., & Powpaka, S. (2021). Pseudo-ownership advertising appeal creates brand psychological ownership: the role of self-construal and customer type. *Journal of Product & Brand Management*, 30(2), 215-230.
- Kwortnik Jr, R. J., & Han, X. (2011). The influence of guest perceptions of service fairness on lodging loyalty in China. *Cornell Hospitality Quarterly*, 52(3), 321-332.
- Lam, D., Lee, A., & Mizerski, R. (2009). The effects of cultural values in word-of-mouth communication. *Journal of International Marketing*, 17(3), 55-70.
- Lee, Y., & Chen, A. N. (2011). Usability design and psychological ownership of a virtual world. *Journal of Management Information Systems*, 28(3), 269-308.
- Lee, K. Y., Huang, H. L., & Hsu, Y. C. (2007). Trust, Satisfaction and Commitment-On Loyalty to International Retail Service Brands. *Asia Pacific Management Review*, 12(3), 161-169.
- Lee, H., Yang, S. B., & Koo, C. (2019). Exploring the effect of Airbnb hosts' attachment and psychological ownership in the sharing economy. *Tourism Management*, 70, 284-294.
- Li, J. J., Poppo, L., & Zhou, K. Z. (2008). Do managerial ties in China always produce value? Competition, uncertainty, and domestic vs. foreign firms. *Strategic Management Journal*, 29(4), 383-400.

- Liat, C., Mansori, S., & Huei, C. (2014). The associations between service quality, corporate image, customer satisfaction, and loyalty: Evidence from the Malaysian hotel industry. *Journal of Hospitality Marketing & Management*, 23(3), 314-326.
- Liu, Y., Qu, Z., Meng, Z., & Kou, Y. (2022). Environmentally responsible behavior of residents in tourist destinations: the mediating role of psychological ownership. *Journal of Sustainable Tourism*, 30(4), 807-823.
- Locke, J. (1690). *Two Treatises of Government*. Oxford: Oxford University Press.
- Marquardt, D. W. (1980). You should standardize the predictor variables in your regression models. *Journal of the American Statistical Association*, 75, 87-91.
- Marriott International. (2017). *Marriott International Teams with Samsung and Legrand to Unveil Hospitality Industry's IoT Hotel Room of the Future, Enabling the Company to Deepen Personalized Guest Experience*. Retrieved from <https://tinyurl.com/marriott171114>
- Mattila, A. S. (2006). How affective commitment boosts guest loyalty (and promotes frequent-guest programs). *Cornell Hotel and Restaurant Administration Quarterly*, 47(2), 174-181.
- Morewedge, C. K., Monga, A., Palmatier, R. W., Shu, S. B., & Small, D. A. (2021). Evolution of consumption: A psychological ownership framework. *Journal of Marketing*, 85(1), 196-218.
- Mudambi, S. M., & Schuff, D. (2010). What Makes a Helpful Review? A Study of Customer Reviews on Amazon. com. *MIS Quarterly*, 34(1), 185-200.
- Nancekivell, S. E., & Friedman, O. (2014). Mine, yours, no one's: Children's understanding of how ownership affects object use. *Developmental Psychology*, 50(7), 1845.

- Neary, K. R., Friedman, O., & Burnstein, C. L. (2009). Preschoolers infer ownership from “control of permission”. *Developmental Psychology*, 45(3), 873.
- Ngobo, P. V. (1999). Decreasing returns in customer loyalty: does it really matter to delight the customers?. *ACR North American Advances*.
- Peck, J., Barger, V. A., & Webb, A. (2013). In search of a surrogate for touch: The effect of haptic imagery on perceived ownership. *Journal of Consumer Psychology*, 23(2), 189-196.
- Peck, J., Kirk, C. P., Luangrath, A. W., & Shu, S. B. (2021). Caring for the commons: Using psychological ownership to enhance stewardship behavior for public goods. *Journal of Marketing*, 85(2), 33-49.
- Peck, J., & Luangrath, A. W. (2023). A review and future avenues for psychological ownership in consumer research. *Consumer Psychology Review*, 6(1), 52-74.
- Peck, J., & Shu, S. B. (2009). The effect of mere touch on perceived ownership. *Journal of Consumer Research*, 36(3), 434-447.
- Peck, J., & Shu, S. B. (2018). *Psychological Ownership and Consumer Behavior*. Springer.
- Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological Aspects of Natural Language Use: Our Words, Our Selves. *Annual Review of Psychology*, 54(1), 547-577.
- Pierce, J. L., Kostova, T., & Dirks, K. T. (2001). Toward a theory of psychological ownership in organizations. *Academy of Management. The Academy of Management Review*, 26(2), 298.
- Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology*.

- Pino, G., Nieto-García, M., & Zhang, C. X. (2022). “My place is your place”-Understanding how psychological ownership influences peer-to-peer service experiences. *Psychology & Marketing*, 39(2), 390-401.
- Pyo, T. H., Kwon, J., Gruca, T., & Nayakankuppam, D. (2021). Contagious endowment effects across transactions. *European Journal of Marketing*, 55(8), 2122-2145.
- Qu, Z., Cao, X., Ge, H., & Liu, Y. (2021). How does national image affect tourists’ civilized tourism behavior? The mediating role of psychological ownership. *Journal of Hospitality and Tourism Management*, 47, 468-475.
- Rudmin, F. W., & Berry, J. W. (1987). Semantics of ownership: A free-recall study of property. *The Psychological Record*, 37(2), 257-268.
- Scarpi, D. (2024). Strangers or friends? Examining chatbot adoption in tourism through psychological ownership. *Tourism Management*, 102, 104873.
- Shi, Z., Zhou, A., Han, W., & Liu, P. (2011). Effects of ownership expressed by the first-person possessive pronoun. *Consciousness and Cognition*, 20(3), 951-955.
- Shu, S. B., & Peck, J. (2011). Psychological ownership and affective reaction: Emotional attachment process variables and the endowment effect. *Journal of Consumer Psychology*, 21(4), 439-452.
- So, K. K. F., King, C., Sparks, B. A., & Wang, Y. (2013). The influence of customer brand identification on hotel brand evaluation and loyalty development. *International Journal of Hospitality Management*, 34, 31-41.
- So, K. K. F., King, C., Sparks, B. A., & Wang, Y. (2016). The role of customer engagement in building consumer loyalty to tourism brands. *Journal of Travel Research*, 55(1), 64-78.

- Stoner, J. L., Loken, B., & Stadler Blank, A. (2018). The name game: How naming products increases psychological ownership and subsequent consumer evaluations. *Journal of Consumer Psychology*, 28(1), 130-137.
- Tanford, S. (2013). The impact of tier level on attitudinal and behavioral loyalty of hotel reward program members. *International Journal of Hospitality Management*, 34, 285-294.
- Tepeci, M. (1999). Increasing brand loyalty in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 11(5), 223-229.
- Um, S., Chon, K. K. S., & Ro, Y. H. (2006). Antecedents of revisit intention. *Annals of Tourism Research*, 33(4), 1141-1158.
- Van Dyne, L., & Pierce, J. L. (2004). Psychological ownership and feelings of possession: Three field studies predicting employee attitudes and organizational citizenship behavior. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(4), 439-459.
- Virgin Hotels. (2022) *The Know*. Retrieved from <https://virginhotels.com/the-know/>
- Walls, A., Okumus, F., Wang, Y., & Kwun, D. J. W. (2011). Understanding the consumer experience: An exploratory study of luxury hotels. *Journal of Hospitality Marketing & Management*, 20(2), 166-197.
- Weiss, L., & Johar, G. V. (2013). Egocentric categorization and product judgment: Seeing your traits in what you own (and their opposite in what you don't). *Journal of Consumer Research*, 40(1), 185-201.
- Yin, D., Bond, S. D., & Zhang, H. (2014). Anxious or angry? Effects of discrete emotions on the perceived helpfulness of online reviews. *MIS quarterly*, 38(2), 539-560.

- Zhang, J. Y., Nie, M., Yan, B. S., & Wang, X. D. (2014). Effect of network embeddedness on brand-related behavior intentions: Mediating effects of psychological ownership. *Social Behavior and Personality: An International Journal*, 42(5), 721-730.
- Zervas, G., Proserpio, D., & Byers, J. W. (2017). The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Journal of Marketing Research*, 54(5), 687-705.