

# J.B.M.

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## Journal of Business and Management

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*National Chung Cheng University, Chiayi, Taiwan*

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# Editorial

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## Editorial Objective

*JBM* is a double-blind refereed journal addressing working or potential business and management theories or practices and emerging issues of interest to academics and practitioners. The primary editorial objective of the *JBM* is to provide a forum for disseminating theory and research in all areas of business, management, and organizational decisions. We invite research articles, comprehensive reviews, and case studies that provide insights into daily business phenomena. Authors of *JBM* are always encouraged to offer recommendations to readers exemplifying the applicability of their research findings.

## Research Articles

In this issue of *JBM*, we have included four research articles. First, J. S. McQuilkin and A. J. Stagliano co-author the first article, "A case study of tax inversion impacts on value creation." They challenge the assumption that reincorporation overseas creates additional shareholder value by lowering corporate taxes. In a case-level analysis of companies involved in U.S.-to-Ireland inversions, they assess these inverters' financial operating outcomes. The analysis is based on regulatory agency-reported data and assesses major financial metrics of value creation, including operating profit, net income, and return on total assets. Finally, they review all U.S. public company tax inversions in Ireland from 2010 to 2014 and find that inversions do not create additional value from operations.

The second article is "The moderating effects of product and consumer-brand relationship on type of rewards in consumer cocreation." Miao Zhao, Ruby Saine, Yimin Zhu, and Zhenzhu Wu examine the differential effectiveness of monetary and non-monetary rewards in motivating consumers to participate in co-creation during new product development. They conduct two studies to test the mediating role of product type and moderating role of consumer-brand relationship type in the relationship between reward type and willingness to participate in consumer cocreation. They find that the differential effectiveness of monetary and non-monetary rewards depends on product and consumer-brand relationship types. Monetary rewards motivate consumers to participate in the co-creation of utilitarian products, while non-monetary rewards work better in co-creating hedonic products.

Next, Leili Javadpour and Sacha Joseph-Mathews discuss a study, "An examination of alignment of hotel brand differentiation and customer priorities: A case study of three unique destinations." The study examines online hotel reviews of nine distinctive properties at three different destinations, namely, beach, big city, and eco-tourism locations. A text analysis model is generated to examine 25,579 hotel reviews across three destinations. Text processing and machine learning models were implemented to analyze the online reviews to find similarities and differences between the reviews of the selected distinct locations. The authors find that customers care more about service, room, and staff qualities despite the type of hotel at the destination.

In the last and fourth study, Zhuofan Zhang presents a study on "Validation of self-determination scale: An experiential consumption perspective." The author conducts two studies using young adults to develop and validate the adapted self-determination scale. The third study tests and confirms the hypothesis that self-determination, particularly the autonomy and competence dimensions, mediates the relationship between fear of missing out (FoMO) and purchase intentions regarding experiential products.

## **Acknowledgment**

This issue of *JBM* is the third issue officially published by the College of Management at National Chung Cheng University (CCU-COM) in Chiayi, Taiwan. The International Consortium for Electronic Business (ICEB) had authorized CCU-COM to be the publisher of *JBM* in September 2021. Furthermore, the journal is officially a Diamond Open Access journal licensed under Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0) since April 1, 2022.

For this issue of Vol. 28, No. 2, we thank the authors for sharing their knowledge through the research projects and the reviewers for taking their precious time to review the articles and offer constructive suggestions to the authors. In addition, special thanks go to the College of Management at CCU in Taiwan for the administrative support and the ICEB for being a partner in accepting *JBM* as its official publication since the issue of Vol. 26, No. 2 in September 2020.

The publication of *JBM* cannot sustain without institutional partners and contributing scholars. Please note that the views expressed in these articles belong to the authors, not the editors, editorial board, *JBM*, ICEB, and CCU. We hope the articles are interesting and beneficial to your future research. On behalf of the Editorial Board, I thank you dearly for your continuous support. Finally, we would like to take this opportunity to wish you all to be safe and healthy under the sustaining coronavirus epidemic. We hope the COVID-19 contagion ends soon, and we, the people, can get back to our healthy and normal lives.

**Reference** to this paper should be made as follows: Li, E.Y. & Chang, S.I. (2023). Editorial. *Journal of Business and Management*, 28(2), January, i-iv.



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Chang's research outcomes have contributed to both theoretical and practice. Based on the research areas, he authored/co-authored over 80 refereed journal articles (e.g., *Information & Management, Decision Support Systems, Journal of Information Systems, Information Systems Management, Communication of AIS, Journal of Global Information Management, Information System Frontiers*) and published ten textbooks.

# A Case Study of Tax Inversion Impacts on Value Creation

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## ***Abstract***

*Purpose – Over the past four decades, a small number of U.S. corporations have elected to reduce profit taxes by relocating their legal/corporate headquarters to a foreign country with lower tax rates and a territorial assessment system. Companies in the United States have minimized their net income taxes by engaging in "inversion" transactions. It is assumed that reincorporation overseas will increase shareholder value by cutting corporate taxes. This article challenges that assumption through a case-level examination of enterprises participating in US-to-Ireland inversions and an examination of their financial operating performance.*

*Method – The analysis involves a review of all U.S. public company reincorporation in Ireland from 2010 to 2014. During these years, seven U.S. public companies "moved" to Ireland. The period was selected to maintain access to financial data post-inversion and to avoid the inversion-dampening effect of the 2018 reduction in U.S. corporate tax rates by one-third. The analysis is based on regulatory agency-reported data and assesses major financial metrics of value creation, including operating profit, net income, and return on total assets.*

*Findings – This analysis discovered that inversions do not create additional value from operations based on a rigorous review of all U.S. public company tax inversions in Ireland from 2010 to 2014. Instead, almost every instance of reincorporation to escape high US tax rates lowered the basic financial indicators used to gauge corporate performance. Inversions do not improve management's value creation outcomes from an internal value creation standpoint.*

*Limitations – The paper has several limitations. Even though it is a case study, the size of the group analyzed is quite small. The time for study is limited and might well inhibit a definitive conclusion. The focus is on operating metrics alone and does not consider positive stockholding value changes that may have occurred outside the control of company management. The value might have been created for investors through these inversion events even if profitability was not impacted.*

**Implications** – *The research findings are useful and interesting to academics and U.S. corporations who are considering doing an overseas tax inversion when U.S. tax rates are increased again.*

**Originality** – *We are not aware of any papers that specifically have questioned the assumption that tax inversions create enhanced profitability for re-incorporation-to-Ireland transactions undertaken by U.S. companies before 2018.*

**Keywords:** tax inversion, tax-motivated reincorporation, corporate income tax, shareholder value creation

**Reference** to this paper should be made as follows: McQuilkin, J. S., & Stagliano, A. J. (2023). A case study of tax inversion impacts on value creation. *Journal of Business and Management*, 28(2), January, 1-42. DOI: 10.6347/JBM.202301\_28(2).0001.

## Introduction

Before the late 2017 Tax Cuts and Jobs Act (TCJA), the United States federal corporate income tax rate was the highest in the world. This can be seen from the Organization for Economic Cooperation and Development (OECD) compilation shown in Table 1. At 35 percent, it was the top rate among developed countries that levy a tax on net income at the business-entity level. In a search for greater profits, some U.S. firms seized the opportunity to escape from the U.S. federal tax by "inverting," relocating their legal domicile to a foreign tax jurisdiction with lower tax costs. This odd bit of locational gerrymandering does not entail changing the situation of business activity or operations. This act effectively reduces the tax burden by shifting from the higher U.S. tax regime to a lower tax domain elsewhere. While such a reincorporation event does not come without administrative costs, it usually results in a nearly transparent change that affects no one along the corporate value chain – not suppliers, employees, or customers – except the tax collector, a "silent partner" in businesses that extracts profit without effort.

The U.S. has seen several "waves" of tax inversion activity. Discovery by the fisc of the means used for this action always prompts – belatedly – new legislation to inhibit such a tax strategy. However, as soon as the law changes, new schemes are developed to skirt the altered rules. The cycle has occurred for over four decades, leading to the common belief that inversions are worthwhile and value-enhancing for shareholders. This proposition is investigated here by way of a tightly focused case-study analysis. The question is whether there is evidence that inversions are beneficial when viewed solely from the perspective of internal profit generation by the actors. Net income is indicative of managerial operating success. Can after-tax profits – value that is, in effect, owned by

stockholders – be bolstered by an artificial renaming of a firm's legal domicile? That is the notion investigated here. Moreover, the research conducted demonstrates this to be a false promise. Tax inversion transactions do not create value.

Table 1. Corporate Tax Rates for Major Countries

<b>Corporate Tax Rates OECD Countries, 2017</b>	
<b>Country</b>	<b>Tax Rate</b>
United States	35%
France	34.43%
Belgium	33%
Australia	30%
Mexico	30%
Greece	29%
New Zealand	28%
Portugal	28%
Italy	27.50%
AT, IL, NL, NO, E.S.	25.%
Data retrieved from OECD.org	

## **Background**

### **A Historical Perspective on Tax Inversion Activity**

McDermott International instigated the first successful U.S.-firm tax inversion in 1982. McDermott was a company based in Panama and wholly owned by McDermott, Inc., a U.S. corporation. Under U.S. tax law at that time, income tax was usually deferred for controlled foreign corporation profits until repatriated to U.S. shareholders as dividends. When the time came for McDermott International, the Panamanian subsidiary, to distribute its profit upstream to its U.S. corporate owner, that would have to pay tax on this income, and the corporate tax managers had a better idea. Cleverly, the quite small controlled foreign entity issued stock to the shareholders of its parent in exchange for their stock in McDermott, Inc. This transaction effectively reversed the parent-subsidiary relationship. Stockholders, of course, were pleased since they now received dividend income without its having been stripped of federal corporate income taxes. For owners, this innocuous and seemingly transparent transaction certainly appeared to create value for them. Quite a fair bit of tax gimmickry . . . and the door was opened for other companies to try this novel relocation technique.

In a direct but rather belated response to the McDermott action, the U.S. Congress enacted Section 1248 of the tax code (Rao, 2015). This provision forced corporate

shareholders to realize ordinary income – in the form of dividends – on any exchange or sale of a subsidiary in which the owner/parent possessed a 10 percent or greater control. Such realization of income was capped at the number of accumulated earnings of the controlled foreign corporation. That law changes completely removed any incentive to replicate this exact strategy for avoiding taxes, but it fell short of wholly terminating inversion events (Baker Tilly, 2013).

The next significant inversion, probably the most famous from a historical perspective, was accomplished more than a decade later in 1994. Helen of Troy reincorporated itself in Bermuda to reduce U.S. taxes. Helen of Troy's transaction is the prototype of inversions seen since that time: a merger of two corporations in which a U.S. target entity combines with a non-domestic entity to form a new foreign corporation. The de novo non-U.S. corporation would inherit tax domicile from the foreign counterparty, even if that non-domestic entity were newly formed to affect the subsequent inversion event.

In reaction to Helen of Troy, Congress attempted to prevent more cases of this new tax avoidance type by enacting Internal Revenue Code (IRC) Section 367. This additional IRC provision allowed for no more than 50 percent U.S. ownership in the new foreign corporation by officers or significant shareholders of the original U.S. target when considering the tax domain (Hayes, 2013). The revised law would not hinder inversion events for corporations in which the majority of U.S. shareholders owned less than 5 percent of the U.S. target or if the shareholders were "predominantly" foreign-domiciled. Even after two rounds of reactionary tax-law writing, there remained a huge loophole unaddressed by the new Code section—for in virtually all large U.S. publicly traded corporations, most stockholders are de minimis owners.

The obvious inadequacy of Section 367 allowed for the continued growth of inversions into the early 2000s, with more than two dozen inversions occurring between 1999 and 2005 (Bloomberg, 2017). This wave of inversions was addressed by Congress – again by reactive-mode legislative rule-making—with a more stringent tax-law provision, IRC Section 7874. This new legal requirement significantly limited the practicality and effectiveness of inversions. It provided that when a "new" combined corporation results in shareholders of the original U.S. corporation owning between 60 and 80 percent of entity control, there would be a tax on "inversion gains" recognized by a transfer or license of any property related to the transaction. To prevent inter-jurisdictional transfer pricing manipulation, operating losses could not be used to offset this gain. Furthermore, greater than 80 percent ownership resulted in the new organization being recognized as a U.S.-domiciled entity, so there would be no tax benefits from the inversion activity (Wood, 2016).

With these strictures in place, the optimal ownership position for shareholders of a former U.S. corporation is between 50 and 60 percent. Corporations have targeted this

so-called "sweet-spot" ownership range by matching themselves with slightly smaller foreign corporations that are just the right size to avoid the impact of Section 7874. Some firms have become serial inverters: companies create the perfect size relative to their targeted counterpart by undergoing multiple mergers. The IRS has sought new rules in which recently completed mergers would be ignored when considering ownership (Rubin, 2016). Furthermore, the IRS issued a notice in 2014 proposing to ignore passive intangible assets that inflate the value of the foreign parent in the merger ("Fact Sheet: Treasury Issues," 2016).

Since 2001, a major tax haven for U.S. corporations has been Ireland. According to the compilers of "Tracking Tax Runaways" (Bloomberg, 2017), 85 successful expatriation events have occurred since inversions first appeared in 1982. Twenty-two expatriated entities were reincorporated in Ireland. This large proportionate share is due to Ireland's extraordinarily low 12.5 percent corporate net income tax rate and that country's territorial tax assessment system.

Recent developments regarding the European Union's investigations regarding tax irregularities have serious implications for U.S. tax benefits that might obtain for corporate entities domiciled in Ireland. A new competition policy authorizes the European Union to assess the fairness of tax benefits granted to corporations in member countries. The U.S. claim that this policy infringes on U.S. regulation and tax code impacts for U.S. corporations has generated a significant controversy between the two governmental bodies. Under competition law, all tax benefits are investigated for "state aid attacks." The U.S. asserts that the E.U. has diverged from its established case law in recent state-aid decisions by enforcing competition law, not tax law (Keegan, 2016). In the largest competition-related investigation to date, the European Union ordered Ireland to collect an additional \$14.5 billion in taxes from Apple by deeming the untaxed dollars an unfair trade benefit granted through Ireland's lenient tax policies and low tax rate (Kanter and Scott, 2016).

The magnitude of inversions and the significant controversy surrounding Ireland in recent years is intriguing. Can firms create more value for their shareholders by saving income taxes through an inversion? The current research applies a specific case-study focus directly to every Irish inversion consummated during the five years from 2010 through 2014.

### **Literature on Tax Inversions**

There is an unusual paucity of academic literature directed specifically at corporate tax inversions. Whether this scarcity of study comes from the legal domain in which these events reside or the ever-changing nature of the legislative and government administrative rules constraining tax avoidance in general and inversion activity, in particular, is unclear. Certainly, the isolated nature (i.e., fewer than 100 occurrences over

40 years) and extraordinary complexity of these transactions do not create fertile ground for academicians to find fertile research territory. Even the professional literature is rather sparse, and that surely is because of the very limited applicability of tax inversion schemes. From a practical standpoint, there is little usefulness to studying or commenting on tax manipulations that cannot possibly impact any but the tiniest number – albeit the very largest – of U.S. business entities.

Taking the popular press and professional literature first, the pattern adopted usually is sensational disclosures about U.S. companies "moving off-shore" in some unpatriotic action to deprive the U.S. Treasury of its due. "[W]hen companies walk out on America," trumpeted then-candidate Hillary Clinton, "they will pay the price" (dailycaller.com, 2016). "A small but growing group of big corporations are fleeing the country to get out of paying taxes," said then-President Barack Obama (huffingtonpost.com, 2014). When Burger King Corporation, domiciled in the United States, decided to acquire the small Canadian firm Tim Hortons and reincorporate in Canada, the Americans for Tax Fairness political advocacy group dubbed it, certainly with pun intended, "A Whopper of a Tax Dodge" (Americans for Tax Fairness, 2014). Even former President Donald Trump, while a candidate for the presidency, hopped on the bandwagon to berate corporate location-shifters: "Nabisco, they make Oreos. They are moving to Mexico. I am never eating another Oreo again." (factcheck.org, 2015). Stories like these, mainly sensationalism to grab an audience, appeared when Walgreens floated a proposal to move to the E.U. (Sachdev and Frost, 2014), at the time Medtronic offered to acquire Covidien (Gelles, 2014a), after news of the merger between Salix and Cosmo broke (Bennett and Wayne, 2014), as the odd combination of drug-maker Hospira and French food-products giant Danone slowly progressed to consummation (Gelles, 2014b). These examples should suffice to show that authentic and substantive discussions of inversion actions were not the order of the day in popular press reporting about inversions.

Moving to the academic literature, it is wise at the outset to be mindful of the strong conclusion reached by Hwang (2015, page 856) about such research efforts: "While inversions have gained significant attention from policymakers and the press, they have received little attention in the academic literature." Why is that the case? The principal attention of economists who venture into the realm of tax policy often tends to focus on efficiency, equity, and growth outcomes. However, results in these three areas rarely enter into the discussions about what Harrington (2016) once tagged as the "Faustian bargain" of the tax-haven business. On one side of the opposing bodies is the fisc in sovereign nations, typically bent on preserving access to corporate profits as a base for taxation. On the other side are corporate managers with a vested financial interest in maximizing returns for the risk-takers who have provided capital to business enterprises. That pitched battle rarely creates an arena into which academic researchers venture with anticipation of making intellectual contributions in their scholarly attempts to extend knowledge.



Notwithstanding an expectancy that there will be relatively low levels of academic interest in the topic, a modicum of quite substantive conceptual and empirical work on inversions has appeared in the literature. Arguably, the formative piece came from Hines (1991) at a time when, according to most knowledgeable commentators, just two tax inversions had been consummated in the U.S. Long before the inversion technique became "popular," Hines concluded (page 477) that the reason for U.S. government aversion to off-shore relocation had more to do with the preservation of national prestige than the loss of tax revenues. This idea may well have come from Slemrod's (1990) intriguing questioning of the government's seeming indifference to the residence location of U.S. multinational firms. No doubt, though, the conclusion of Collins and Shackelford (1995) that higher effective income tax rates—among highly developed countries—certainly impacted locational decision-making when it came to corporate-level investment decisions.

The economic literature that has grown around the issue of U.S. corporate income taxation of multinational entities is concentrated on the foundational dichotomy between two types of tax structures: residence-based (or worldwide) versus territorial. This literature, both the theoretical and empirical streams, basically is intended to motivate change in government tax policy or substantiate/validate the extant scheme. As Gravelle (2012) pointed out, outcomes from the conceptual debate vary widely, and the empirical study results shed little light on the preferred form of tax base constitution. Most of the argument, whether from 30 years ago (see, for example, Feldstein, Hines, and Hubbard, 1995) or the post-TCJA era (here, the Marples and Gravelle recent report to the U.S. Congress in 2021 stands as the definitive summary on the matter), centers on the matter of locational decisions being triggered by a driving management objective to reduce distributions of profits to governments. Managers have a very strong self-interest in maintaining the net economic consequences of their efforts: profits are indicative of managerial decision-making successes which easily can lead to enhanced compensation for them; residual amounts from operations are available for reinvestment to grow the enterprise; accounting profits when turned into cash can be distributed to corporate owners; profit is a signal to the outside market that the firm is a value-creating entity whose ownership interest (i.e., common stock) is a valuable commodity worthy of possessing.

From a functional standpoint, two features make a country an attractive location for tax domiciliary: a low corporate tax rate and a territorial system (i.e., one that does not tax foreign source income). Debate among economists and policymakers has not much addressed the first of these questions simply because national-level budgetary decision-making occurs nearly exclusively in the political realm. Yet, it is precisely this low rate matter that motivates a considerable amount of the location decisions (Hines, 1996). Therefore, much of the inversion activity that occurred prior to the TCJA was simply based on rates (Morgan, 2018), while the type of tax system in place plays a lesser role (see, for an extended discussion on this matter, Altshuler and Grubert, 2001) in the

locational decision. Whether that will continue to be the case going forward is subject to some conjecture, as McBride (2014) pointed out before the U.S. corporate rate was abruptly lowered by one-third starting in 2018.

## **Scope and Method of Study**

Companies are incentivized to alter their legal/corporate home to a foreign country with lower tax rates (and, it should be added, those with a territorial-based assessment system) because avoiding the corporate tax is expected to create value for shareholders. Put simply; money is not sent to the government as taxes might be distributed, instead, to corporate owners. Taxes on net income, far from being an authentic business expense from which value will be generated, actually are distributions of net operating profits to the fisc. No actual economic benefits are identifiable from the payment of these deadweight monetary exactions. This, of course, is the gospel according to inversion enthusiasts who argue, qua Adam Smith, that the tax mechanism itself promotes inefficiency in basic corporate decision-making (Hines, 1999) when, in fact, it ought to be neutral in that respect.

An alternative view promoted, for example, by Bybee (2016) claims that the 35 percent (pre-2018) corporate tax rate largely is a myth, challenging the idea that inversions generate significant tax savings. He cites a Citizens for Tax Justice report that estimated the effective U.S. tax rate for 288 profitable corporations between 2008 and 2012 to be only 19.4 percent. This somewhat unconventional but financially realistic way of looking at tax payments would rank the U.S. as the eighth lowest among advanced nations rather than the country with the highest pre-2018 marginal corporate tax rate. Such thinking directly challenges the assertion that inversions add value for shareholders. So this, too, is part of the proposition investigated in this research.

Specifically, the scope of this case-level research focuses on the seven U.S.-to-Ireland tax inversions that occurred in the five-year time period between 2010 and 2014. While there were other inversions during these and earlier years, the attention here is on a single time period and single country. The U.S. Treasury and the U.S. Congress were concerned with migrations to Ireland, so tax jurisdiction is a good one for the study of inversions. Ireland's low tax rate (see Table 1) provided robust incentives for American firms to consider relocation. The time for analysis is truncated simply because U.S. corporate tax rates under the former Trump Administration declined, with the passage of the TCJA, from 35 percent to 21 percent. As a consequence, inversions have become nearly non-existent after 2017.

This research provides a case-level analysis of value creation over a five-year time period by assessing corporate return on total assets (ROA) as a measure of the profit created by management's actions. ROA, a financial ratio based on reported accounting data, is the most robust indicator of management's effectiveness in creating value from

the total capital over which investors have been granted control (Helfert, 2007). Several collateral metrics also are considered, but the principal attention here is on the return created from the assets under management's command.

Return on assets is the broadest measure of internal value creation. It is wholly abstracted from considerations outside the dominion of managers—i.e., stock valuation in trading markets. Additionally, and of high significance, ROA is independent of entity capitalization choices, so it is truly an indicator of asset management itself. Importantly for this study, return on tangible assets was examined. This allowed control for the impact of the accounting artifact of goodwill. This new asset is added to the balance sheet after any merger event to reconcile the difference between the acquisition price paid and the book value of the acquiree's assets. Since the meaningfulness of the financial metrics is relevant at the time the inversion occurred, a distinct period was selected for each case ranging from two years prior to inversion through two years after the inversion (when two years of reporting data were available). For example, if an inversion occurred in 2011, the value-creation assessment is based on the range from 2009 to 2013. This method normalized the timeline so that all the cases studied could be analyzed in a consistent manner.

As noted earlier, the research is based entirely on Irish inversions that occurred during the years 2010 to 2014. The choice of study domain, while injecting a significant research limitation, is intentional. Obviously, years after 2017 had to be avoided because of the intervention of the TCJA major rate reduction. Thus, the scope was selected so as to be both recent and relevant while maintaining accessibility to financial data post-inversion. Choosing to examine the impact of the lowest tax rate venue among developed countries provides a high likelihood of finding value accretion if it was created as a consequence of tax avoidance. All other factors aside, taxes not required to be paid will flow directly to net income that can be shared by stockholders. As a consequence, the return on assets metric ought to increase. One final point regarding the scope selected for this analysis: An investigation focused on a single foreign country also obviates complications caused by possible inter-nation discontinuities in tax law and tax base construction. This study-construction attribute, while creating a major limitation to extending the results to other jurisdictions, enhances the strength of the empirical outcomes.

Contemporary inversions, as can be seen from the earlier historical background provided, have evolved over time. Gravelle (2021) proposed that inversions occur through three different paths: "naked inversions" that follow a substantial business presence (by a foreign subsidiary) route, a U.S. firm merger with a larger foreign-based firm, and the "swallowing" of a large U.S. entity by a significantly smaller foreign company. The actual techniques used to invert—stock-for-stock swaps, asset transfers, or drop-down transactions with newly created foreign units—are equally applicable to the three types of inversion identified by Gravelle.

Most U.S. inversions have involved a foreign holding company acquiring a U.S. corporation. The current research looks at corporate governance structures in Ireland that also evolved in response to tax-law changes. These transactions are extraordinarily complex. Whenever available, explanatory diagrams from the Securities and Exchange Commission Form S-4 have been extracted and reproduced below to clarify the studied cases. If the registrants did not provide a corporate re-structuring schematic, diagrams were created to clarify how the inversion was actually affected. These graphical visualizations should provide an understandable view, from a corporate governance perspective, of the transformation that occurred in the inversion transaction.

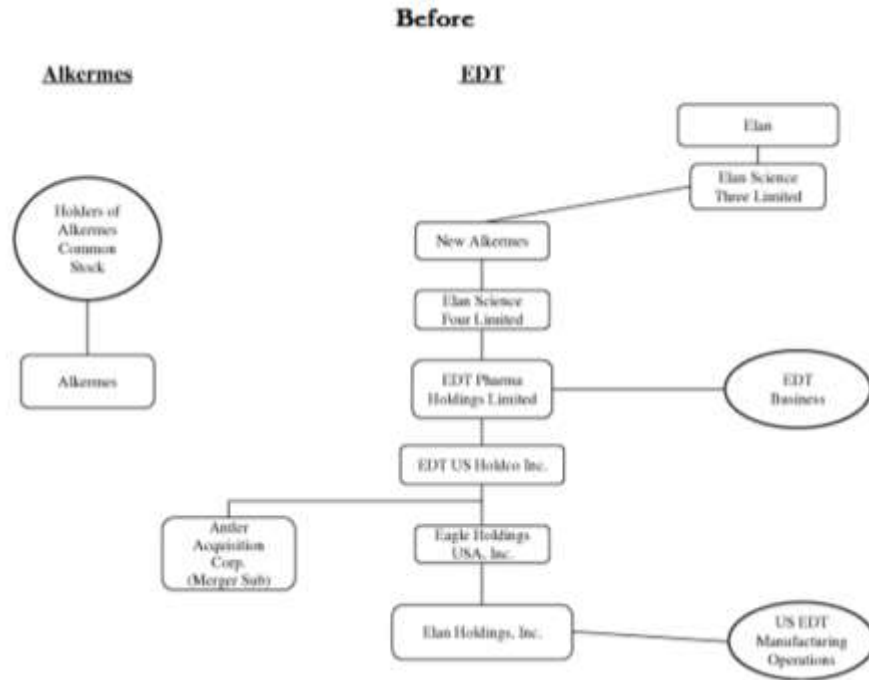
Now to the empirical study – the actual inversion transaction details for the seven cases. In each of these explanations, the financial data, pre- and post-inversion ROA ratios, are given for the relevant U.S. company. Following the seven separate descriptions and analyses, a summary is provided so that a conclusion can be drawn with regard to the initial question posed: Do tax inversions lead to value creation?

### **U.S. Target: Alkermes Inc.**

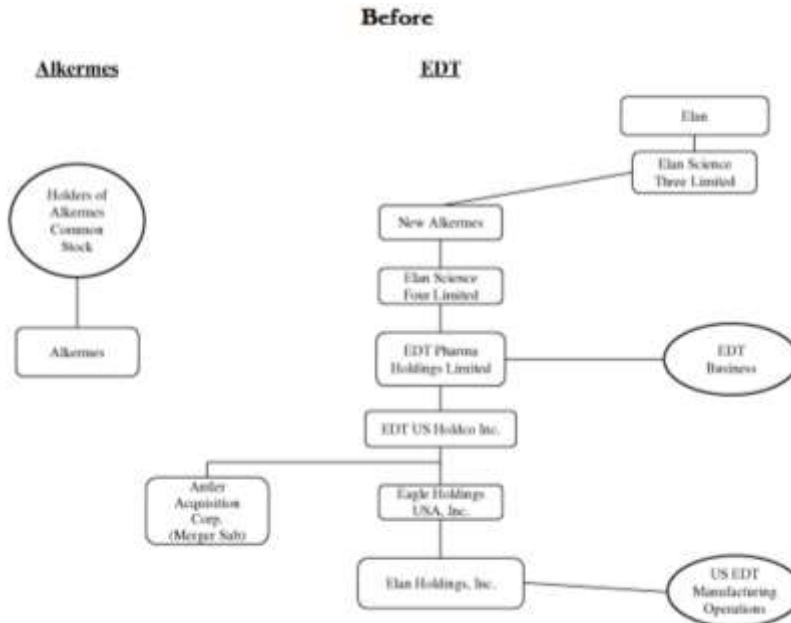
Alkermes Inc. was a Massachusetts biotechnology company originally founded in 1987. In the year prior to its inversion, the company was best known for manufacturing the prescription medication Vivitrol, a pharmaceutical that assists patients suffering from alcohol abuse, and the drug Risperdal Constra, a chemical treatment for long-term sufferers of bipolar disorder. At the time of the inversion, the company brought to market Bydureon, a new treatment for Type 2 diabetes. For context, it should be noted that the firm's market valuation in September 2009 was \$850 million (Alkermes Inc. 2010 Form 10-K).

In May of 2011 Alkermes Inc., the U.S. entity, completed a business combination agreement with Elan Corporation plc of Ireland. An Irish holding company named New Alkermes was created, formally known as Alkermes plc. Elan carved out its subsidiary, called EDT, and transferred full EDT ownership to New Alkermes. Antler Acquisition Corporation was created. EDT directly and wholly owned this entity (and, therefore, indirectly wholly owned by New Alkermes), having been created for the sole purpose of merging with Alkermes Inc. Elan Corporation plc was given 31,900 shares of New Alkermes. Alkermes Inc. shares were canceled, and the shareholders were granted an appropriate number of shares in New Alkermes. Due to these machinations, former shareholders of Alkermes Inc. owned 75 percent of Alkermes plc, and the shareholders of the merger partner Elan owned 25 percent of the new Irish holding company (Antler Science Two PLC Form S-4, 2011).

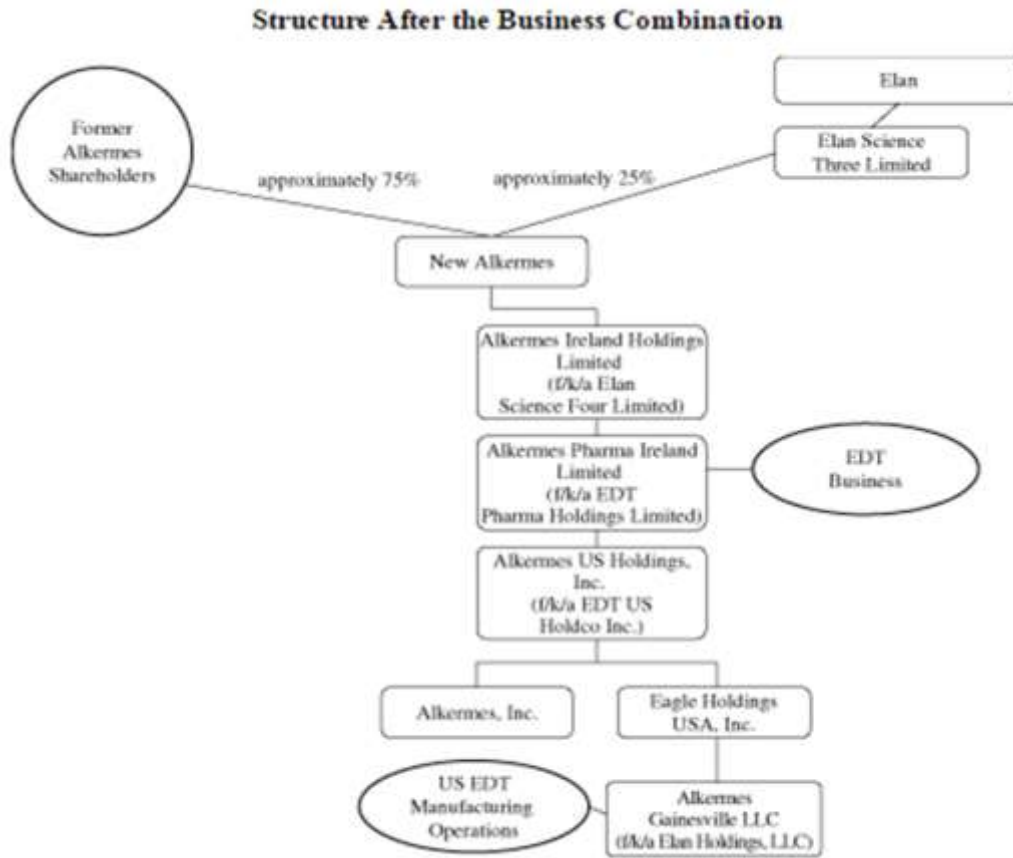
The graphics shown in the three panels of Figure 1, all of which were extracted directly from the Antler Science Form S-4, provide a visual portrayal of how this complicated inversion occurred.



Source: Antler Science Two plc 2011 Form S-4  
Figure 1. Alkermes/Elan Merger  
Panel A – Pre-Inversion Structure



Source: Antler Science Two plc 2011 Form S-4  
Figure 1. Alkermes/Elan Merger  
Panel B – Merger Transaction



Source: Antler Science Two plc 2011 Form S-4

Figure 1. Alkermes/Elan Merger  
Panel C – Post-Inversion Structure

The graph in Figure 2 below provides the financial metrics for Alkermes centered around the inversion date. From these data, several conclusions can be drawn. First of all, the operating margin declined over the five-year period. For the purposes here, operating margin, a standard financial analysis measure, is defined as the profitability or performance ratio that reflects the percentage of profit a company produces from its operations before subtracting taxes and interest charges. It is calculated by dividing the operating profit by total revenue and expressing it as a percentage. In the inversion year, there was a spike in all four returns on assets metrics. This was due, in part, to increased operating profit, although other financial elements such as interest income and utilization of deferred tax assets certainly contributed to this upsurge. None of these financial factors was related to a lower statutory tax rate after moving to Ireland.

Overall, it is not evident that Alkermes benefited from the inversion transaction. Operating return on assets declined partly due to a reduction in operating margin. Consequently, this drove the ROA metrics down. Furthermore, there is a lack of

significant evidence of any improvement in operating income retention. Holding the ratio's denominator constant, the graph displays a very clear divergence of operating income and net income.

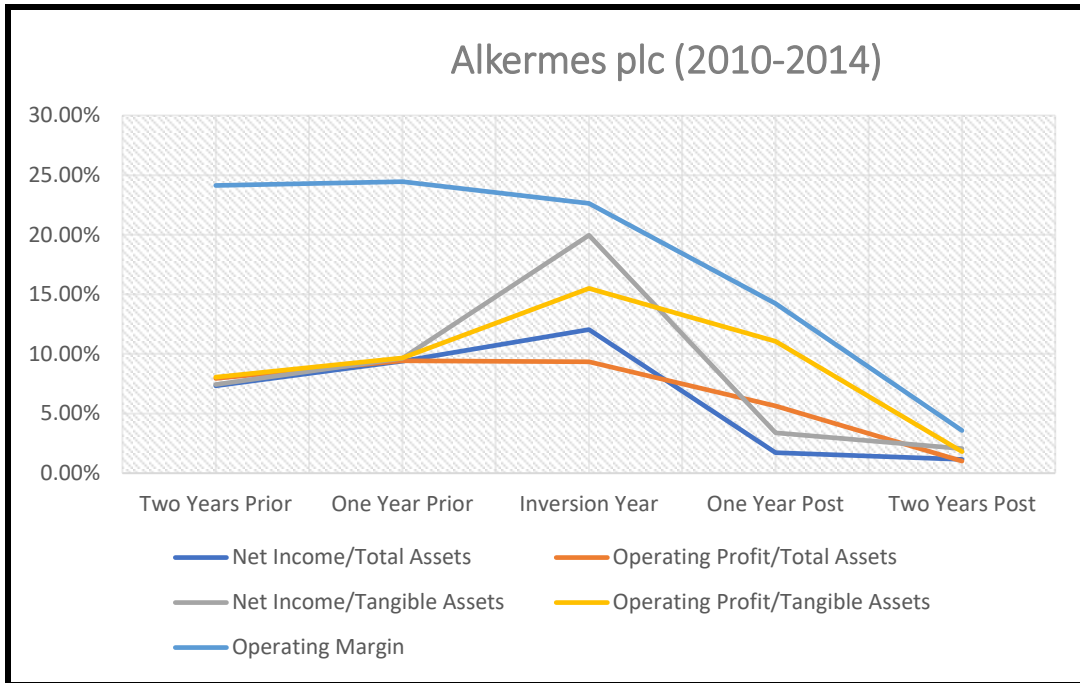


Figure 2: Alkermes Financial Measures, 2010-2014

### U.S. Target: Jazz Pharmaceuticals Inc.

Jazz Pharmaceuticals Inc. was a major drug company founded in 2003 and based in Palo Alto, California. By 2010, the company's biggest successes came from developing Xyrem and Luvox C.R. Xyrem treats cataplexy and narcolepsy; Luvox C.R. is used by those with obsessive-compulsive disorder. At the time of inversion, 84 percent of the company's sales could be attributed to Xyrem. The company's aggregate market value as of June 30, 2010, was \$146 million (Azur Pharma plc 2010 Form 10-K).

In September 2011, Jazz Pharmaceuticals Inc. entered into a merger agreement with Azur Pharma (Ireland). This very complex, multi-tiered transaction entailed Azur changing its name to Jazz Pharmaceuticals plc and creating a wholly-owned U.S. subsidiary, Jaguar Merger Sub Inc., for the sole purpose of merging with Jazz Pharmaceutical Inc. After Jazz Pharmaceutical Inc. merged with Jaguar Merger Sub Inc., it survived as a wholly owned subsidiary of Jazz Pharmaceutical plc. Jazz Pharmaceutical Inc. shares were swapped, on a one-for-one basis, for Jazz Pharmaceutical plc shares. In the end, 78 percent of the shareholders of the Irish holding company were former shareholders of Jazz Pharmaceutical Inc., and 22 percent were former Azur Pharma owners (Azur Pharma plc 2011 Form S-4).

The three "pieces" to this inversion are given in the panels of Figure 3.

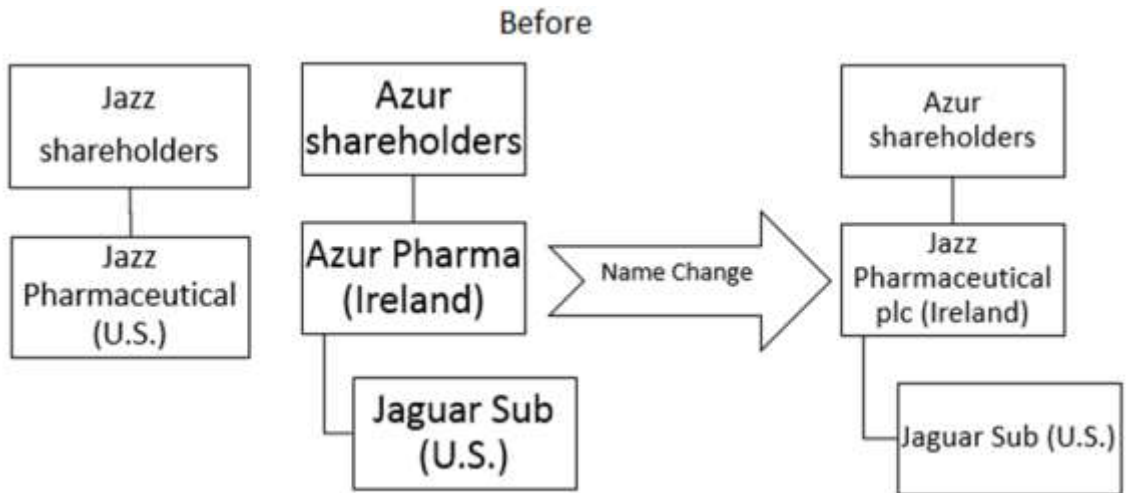


Figure 3: Jazz / Azur Merger  
Panel A – Pre-Inversion Structure

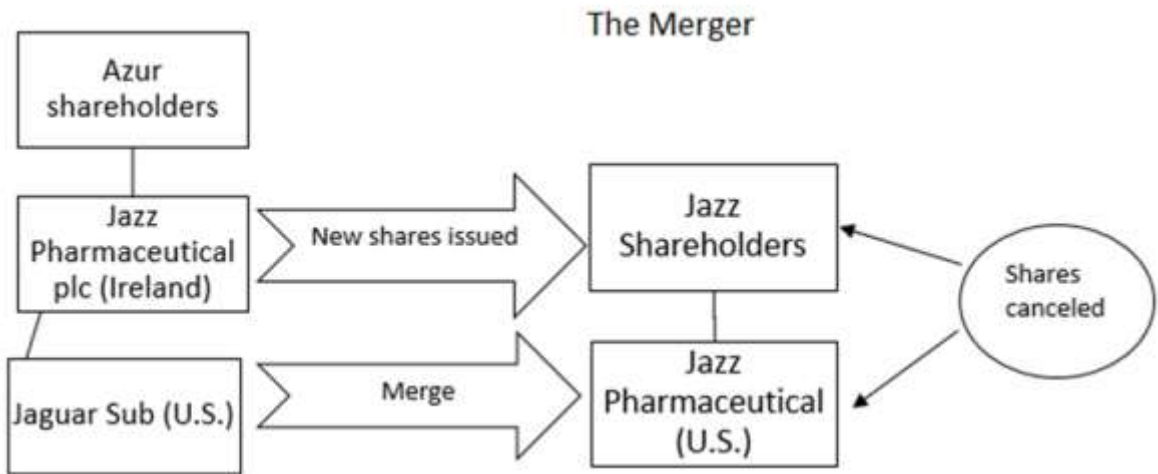


Figure 3: Jazz / Azur Merger  
Panel B – Merger Transaction



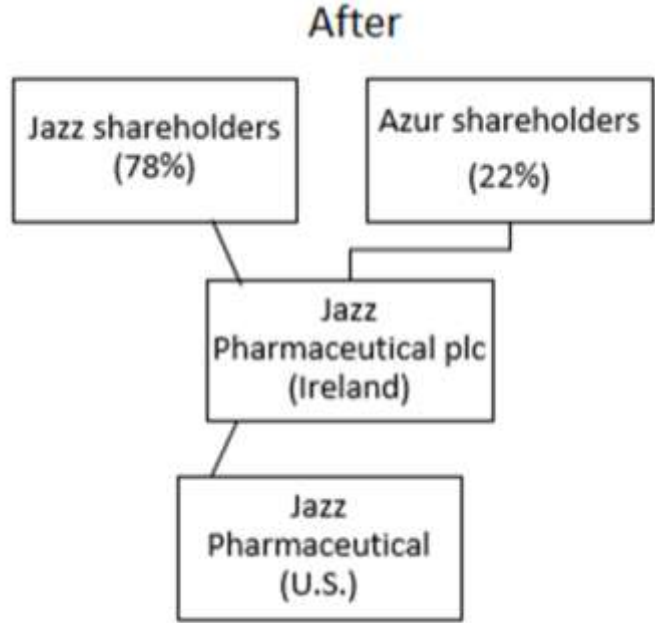


Figure 3: Jazz / Azur Merger  
Panel C – Post-Inversion Structure

Figure 4, below, captures in graphical format the financial metrics covering the five years from the time before the inversion combination through the two fiscal periods after the Jazz-Azur merger. Since the inversion was agreed upon in the fourth quarter of 2011, and because the goodwill asset was added to the balance sheet in 2012, the "inversion year" actually was determined to be 2012 for the purposes of this analysis.

Unlike in the first case shown earlier for the Alkermes merger, Jazz Pharmaceuticals did not evidence a decline in operating margins over its five-year timeline, although the increase is a very slight one indeed.

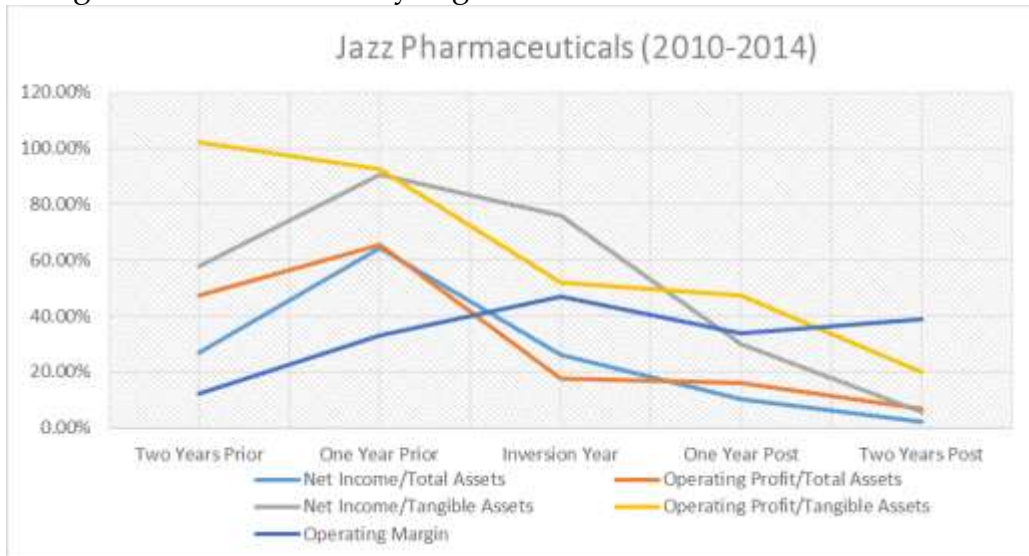


Figure 4: Jazz Pharmaceuticals Financial Measures, 2010-2014

The high rate of return on assets in the two years prior to the inversion can be attributed to the significant rise in the sales of the drug Xyrem (this drug costs more than \$6,000 for a month's supply). During 2010 and 2011, prior to the inversion, Xyrem sales were \$143 and \$233 million, respectively. In contrast, Xyrem's earlier-year sales amounted to only \$54 million in 2009. This tremendous yearly sales increase was accomplished with no significant addition to assets. Most striking, though, is the fact that in 2014, two years after the inversion, Xyrem sales skyrocketed to \$779 million, but the return on assets was substantially lower than in the prior years. Evidently, management became less efficient with its asset deployment when comparing post-inversion to pre-inversion. That is certainly not the outcome expected from a value-enhancing transaction.

In the inversion year (2012), a large dollar amount of intangible assets and goodwill was booked from the merger transaction. This could mean that the total asset return decline might be attributed in part to a larger denominator. Were that to be the case, the prior comment regarding post-inversion managerial inefficiency might be modified. On closer analysis, though, the return on tangible asset measure also declined in the year of the inversion, leading to a dismissal of the amelioration speculation. The ROA metric never returned to the same level as in the pre-inversion period. Applying return on assets as the deciding criterion, it is not apparent that value was created from this inversion.

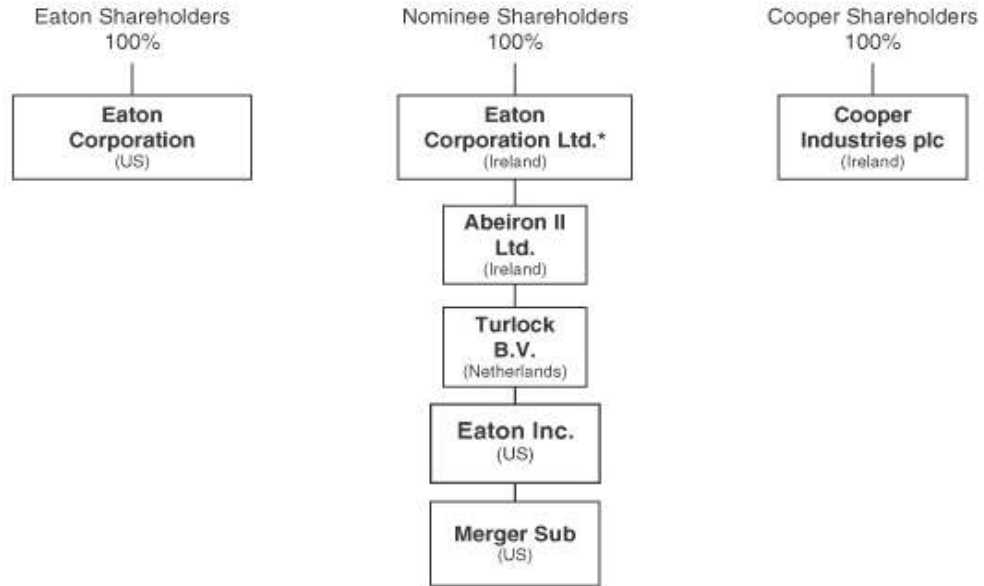
### **U.S. Target: Eaton Corporation**

Eaton Corporation was a diversified power management company founded more than a century ago (1911) in Bloomfield, New Jersey. The company's operating units were Electrical Americas, Electrical Rest of World, Hydraulics, Aerospace, and Truck and Automotive. By 2011, the company had achieved \$16 billion in annual net sales. The market value was \$17.5 billion at the end of June of that year (Eaton Corporation 2011 Form 10-K).

In May 2012, Eaton Corporation and Cooper Industries plc (Ireland) engaged in a merger transaction. Under the combination agreement, Eaton Corporation plc was formed as a holding company to acquire Eaton Corporation and Cooper. Merger Sub, wholly owned by Eaton Corporation plc, was incorporated in the United States to merge with Eaton Corporation. After the merger, Eaton Corporation shares were canceled via a straightforward conversion to shares of Eaton Corporation plc. Simultaneously, Eaton Corporation plc acquired Cooper Industries by exchanging each holding company share for 0.77 Cooper shares and \$39.15 in cash. These transactions resulted in former Eaton Corporation shareholders owning 73 percent and former Cooper Industries plc shareholders owning 27 percent of the new Eaton Corporation plc (Eaton Corporation Limited 2012 Form S-4).

The diagrams in the separate panels of Figure 5 were extracted from the Eaton Corporation S-4 filing. They show how the inversion event transformed the corporate structures.

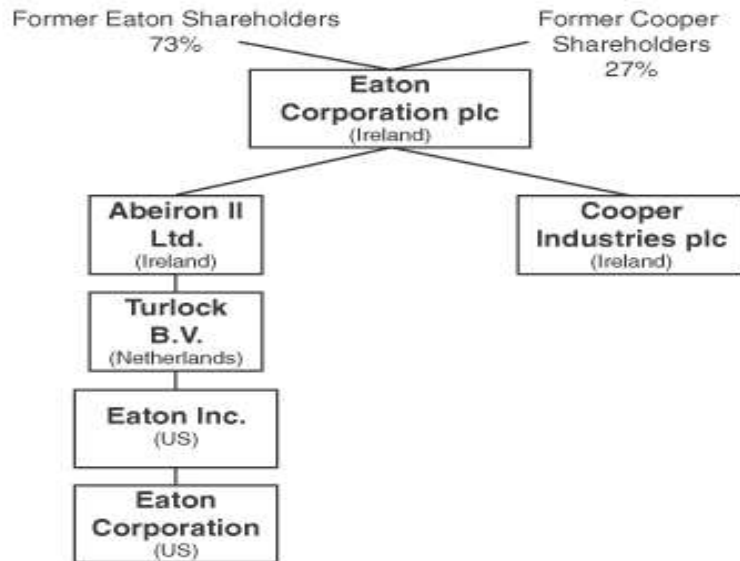
Pre-Acquisition Structure



Source: Eaton Corporation Limited 2012 Form S-4

Figure 5: Eaton/Cooper Merger  
Panel A – Pre-Inversion Structure

Post-Transaction Structure



Source: Eaton Corporation Limited 2012 Form S-4

Figure 5: Eaton/Cooper Merger  
Panel B – Post-Inversion Structure

Figure 6 below displays financial metrics for Eaton Corporation before and after the inversion transaction. Operating return on assets and operating margin on sales both were relatively steady for Eaton over this complete five-year timeline. During the inversion year, the company recognized a small dip in the operating profit over the tangible assets' ratio.

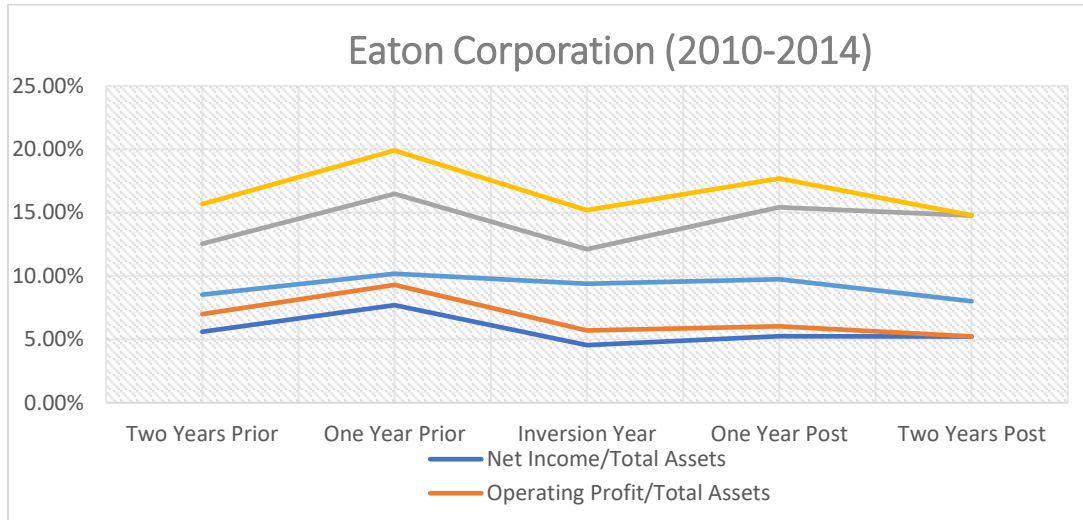


Figure 6: Eaton Corporation Financial Measures, 2010-2014

Delving a bit deeper into the aggregated data, there appears to be *some* evidence for value creation that is related to tax avoidance alone. A comparison of the ratio of operating profit over net income change through this time period shows signs of an improvement in the retention of operating income. That analytic ratio was 80 percent in 2010, 85 percent in 2011, 93 percent in 2012, 90 percent in 2013, and 97 percent in 2014. Furthermore, the effective tax rate declined at the time of the inversion and continued to decline in the post-inversion period displayed. The effective tax rate was 9.5 percent in 2010, 12.9 percent in 2011, 2.4 percent in 2012, only 0.6 percent in 2013, and -2.4 percent in 2014. Taken together, all of this evidence points towards a successful inversion with respect to income tax costs, but that appears to have occurred at the expense of a marginal reduction in operating efficiency.

**U.S. Target: Questcor Pharmaceuticals Inc.**

Questcor Pharmaceuticals Inc. was a U.S. biopharmaceutical company with focused pharma-chemical research on difficult-to-treat autoimmune and inflammatory disorders. The firm was founded in 1990 in Anaheim Hills, California. A company with extensive production facilities, it also provided manufacturing services to others in the pharmaceutical industry all over the globe. As of January 30, 2013, the company had a market valuation of \$1.8 billion (Questcor Pharmaceuticals Inc. 2013 Form 10-K).

In May of 2014, Covidien (Ireland) and Questcor consummated a merger transaction. Under the agreement, a new company, Mallinckrodt plc, was formed as an

Irish holding company that would acquire both Covidien and Questcor and remains the surviving entity. Covidien shareholders received one Mallinckrodt share for every eight Covidien shares held. Quincy Merger Sub, Inc., wholly owned by Mallinckrodt, was created to merge with Questcor Pharmaceuticals Inc. At the time of the merger, each share of Questcor stock was converted into 0.88 shares of Mallinckrodt stock; shareholders also received a value-equalizing \$30 cash payment. These transactions resulted in former Covidien shareholders owning 50.5 percent of Mallinckrodt shares and prior Questcor shareholders holding the residual 49.5 percent of Mallinckrodt (Mallinckrodt plc 2014 Form S-4). This was a complicated multi-phase inversion. The diagrams shown in the three Figure 7 panels show how it occurred.

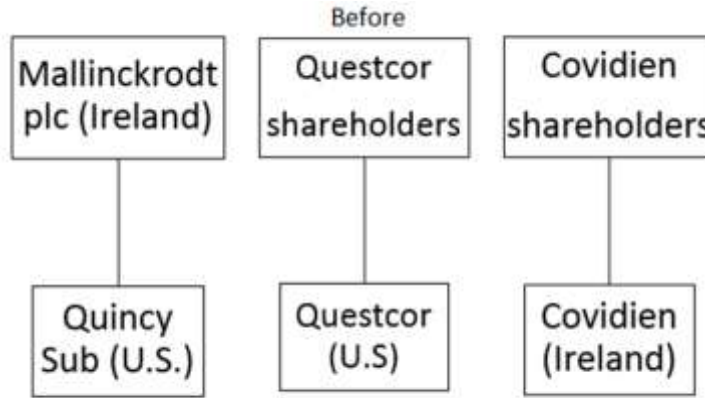


Figure 7: Questcor/Covidien Merger  
Panel A – Pre-Inversion Structure

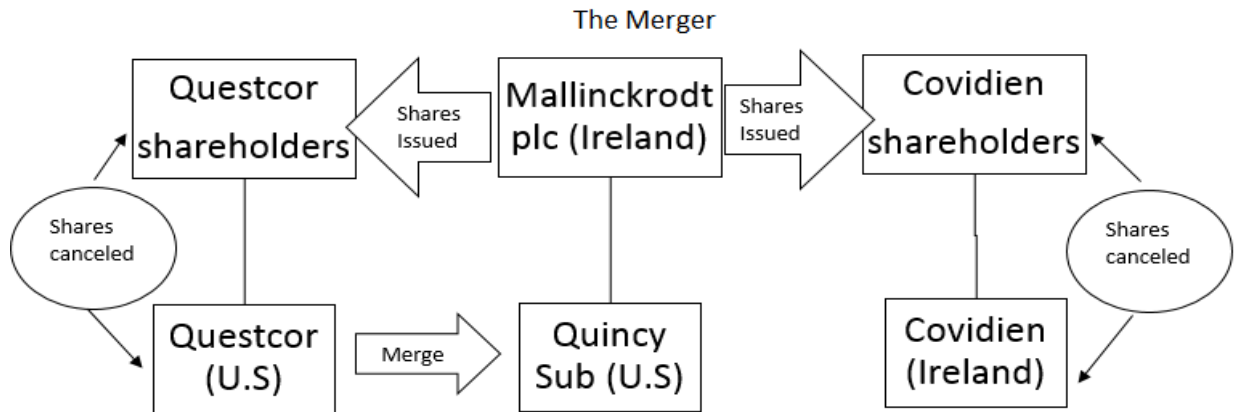


Figure 7: Questcor/Covidien Merger  
Panel C – Post-Inversion Structure

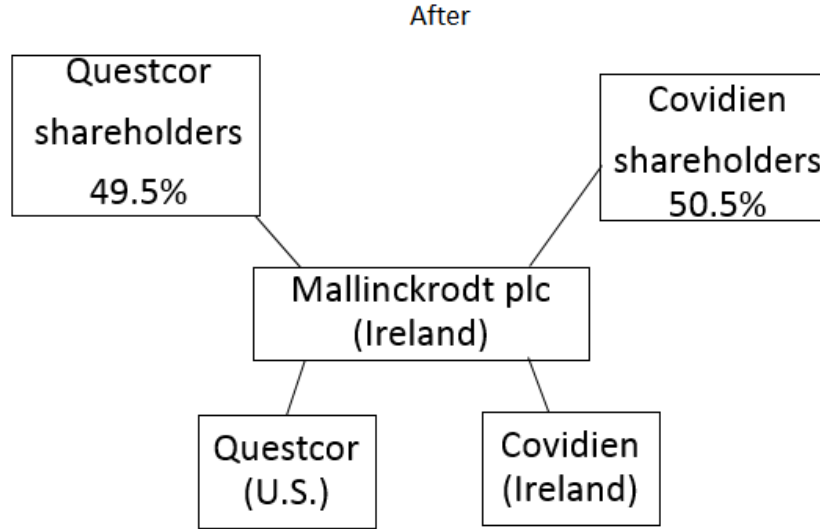


Figure 7: Questcor/Covidien Merger  
Panel C – Post-Inversion Structure

Figure 8 displays financial metrics for Mallinckrodt plc before and after the inversion. In the inversion year, the return on assets was negative, indicative of a net accounting loss for the period. One year after inversion, though, the company reported a substantial increase in return on assets. This was due almost exclusively to a deferred tax benefit of \$188.3 million that was realized when the company released its valuation allowance on certain deferred tax assets. This benefit is not connected in any way to the lower statutory tax rate; rather, it relates to an expectation of future tax benefits. There are no significant signs of improved retention of operating income, as can be seen by the consistent gap between net income and operating income.

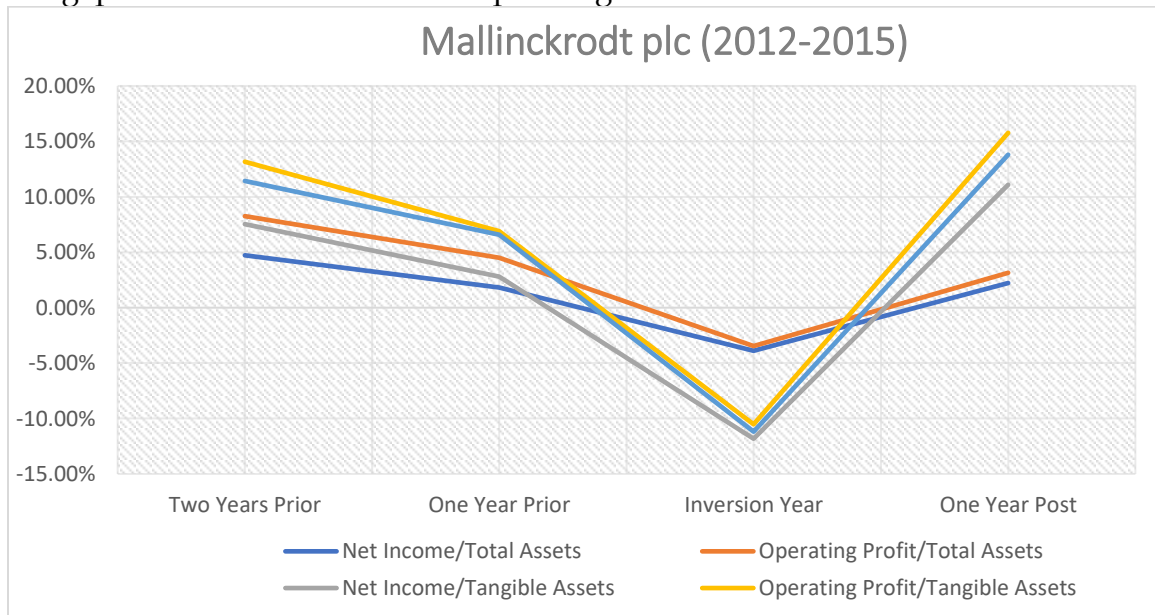


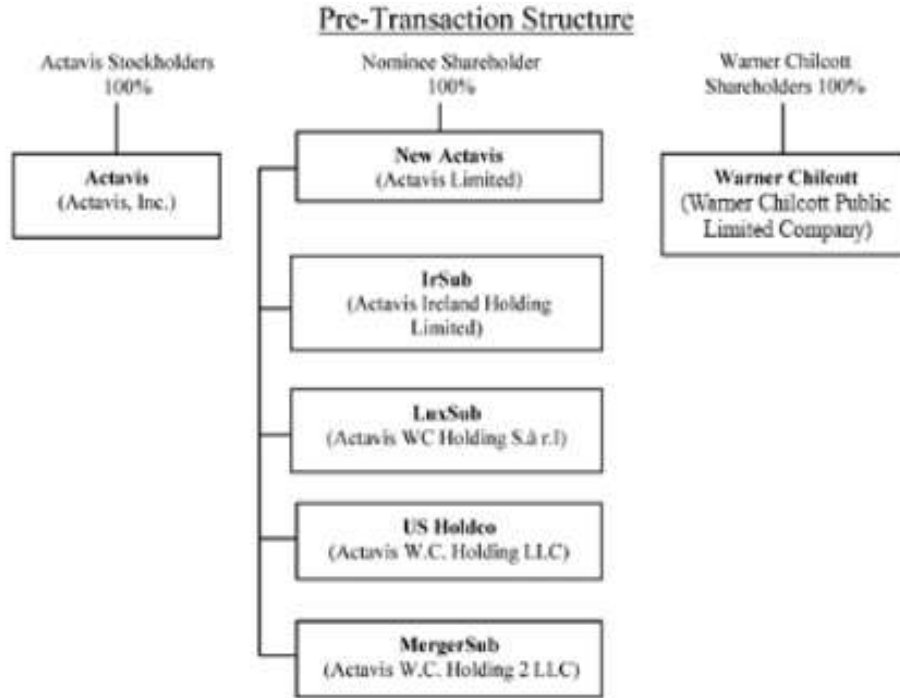
Figure 8: Mallinckrodt plc Financial Measures, 2012-2015

What is most peculiar about the Mallinckrodt case is that the company booked \$356 million in impairment losses in the inversion year. This means that the company overvalued the intangible assets acquired in connection with the merger, and it cost the shareholders dearly. Obviously, the valuation process that occurs in transactions of this type is yet another factor that can have an impact on reported profitability after an inversion occurrence.

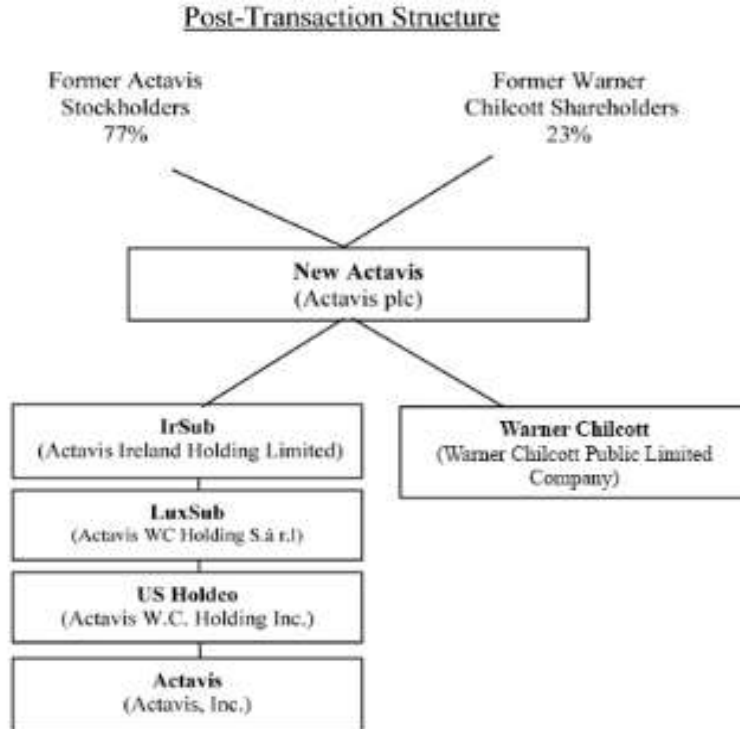
### **U.S. Target: Actavis Inc.**

Watson Pharmaceuticals, Inc. was founded in 1985, and its headquarters location is in Corona, California. Actavis Group was a multinational pharmaceutical company founded in 1956 with a headquarters location in Parsippany-Troy Hills, New Jersey. In May of 2012, Watson acquired Actavis Group, renaming itself Actavis Inc. This merged company was engaged in all of the market spaces in the pharmaceutical sector, including development, manufacturing, marketing, and generics production. At the time of the inversion, the company sold more than 250 generic drugs and 40 branded pharmaceuticals. It operated in over 60 countries around the globe, with a market valuation of \$9.4 billion on June 30, 2012 (Actavis Inc. 2012 Form 10-K).

Just a year after the Watson-Actavis combination, Actavis Inc. entered into a merger agreement with Warner Chilcott plc (Ireland), leading some commentators to suggest that this subsequent inversion was planned in 2011 before the first U.S. merger occurred (McKinnon and Thurm, 2012). According to the May 2013 agreement, New Actavis, formally known as Actavis plc, was formed for the purpose of acquiring and holding Warner Chilcott and Actavis Inc. Warner Chilcott shares were exchanged at a rate of 0.16 shares for every New Actavis share. At the same time, Actavis W.C. Holding 2 LLC, a wholly owned indirect subsidiary of New Actavis, merged with Actavis Inc., resulting in Actavis Inc. surviving the merger. Actavis shares were canceled through conversion into New Actavis shares. These activities resulted in Warner Chilcott shareholders owning 23 percent and Actavis shareholders holding 77 percent of Actavis plc (Actavis Limited 2013 Form S-4). Actavis later changed its corporate name to Allergan.



Source: Actavis Limited 2013 Form S-4  
 Figure 9: Watson/ Actavis Merger  
 Panel A – Pre-Inversion Structure



Source: Actavis Limited 2013 Form S-4  
 Figure 9: Watson/ Actavis Merger  
 Panel B – Post-Inversion Structure



The images in Figure 9 were extracted from the Actavis Limited Form S-4 and show the before and after corporate structures.

The obvious continuing trend revealed by Allergan (using the "final" name of the combined, inverted Irish entity) financial data graph in Figure 10 is a significant decline in operating efficiency. Return on tangible assets and operating margin fell during this five-year period.

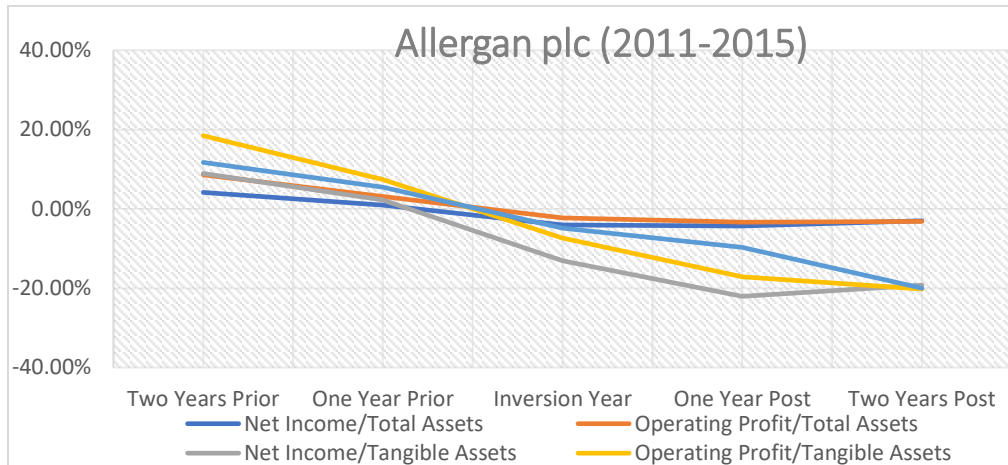


Figure 10: Allergan plc Financial Measures, 2011-2015

Notably, with the impact shown in 2015, Allergan sold its Global Generics business – the biggest piece of activity from the original Warner (U.S.) company – to Teva Pharmaceutical Industries Limited, the largest U.S. generics manufacturer. This created an enormous difference between the operating loss and net income (technically, the disposed of subsidiary results are denoted as income and gain from discontinued operations). The net operating loss was \$3 billion, while net income, bolstered by the sale of the huge generic drug division, was \$3.7 billion, with a \$6.8 billion gain on the Teva transaction making up the bulk of the swing from large operating loss to large net profit. To make sense of the inversion outcome, net income – after tax – from *continuing operations* was used for this analysis instead of total net income.

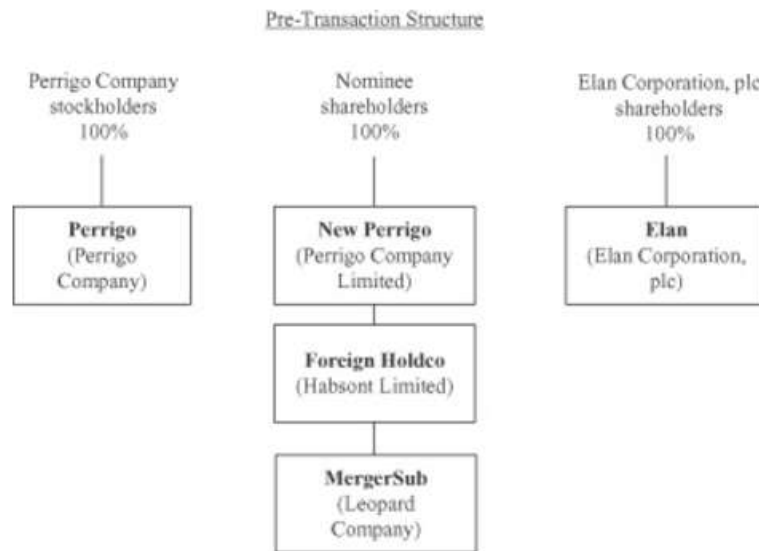
On the surface, it appears that there might have been a tax benefit from the inversion. The gap between net income and operating profit converged, with tax costs being one of many factors involved. However, on closer examination, it appears that the overall decline in return on tangible assets suggests more correctly that, here again, the inversion did not create value for shareholders when standard financial metrics are considered.

### U.S. Target: Perrigo Company

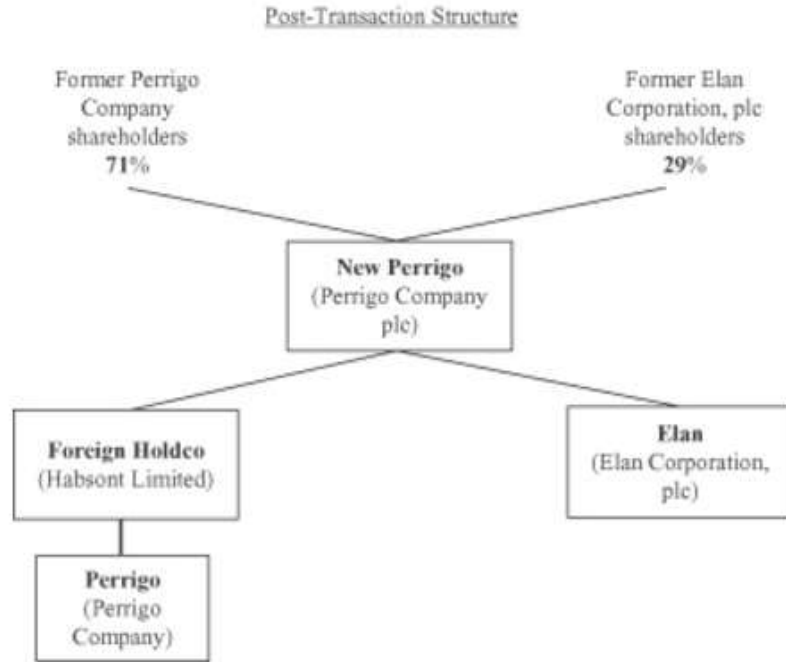
Perrigo Company was founded in 1887 in Allegan, Michigan, and for more than 75 years was a small, local proprietorship selling patent medicines to regional grocery stores in the American Mid-West. The company transformed itself over several decades into a vast global manufacturer and distributor of a full line of pharmaceutical products. Its consumer healthcare segment manufactured dozens of over-the-counter pharmaceuticals. The nutritional segment developed infant products, vitamins, minerals, and dietary supplements. The Rx segment created "extended topical" generics, including creams, ointments, lotions, gels, shampoos, foams, and similar products. The active pharmaceutical ingredients division of the firm segment specialized in synthesizing fewer common molecules for use in drug formulations that were used by other multinational drug companies. At the year-end of 2011, the company was valued in the marketplace at \$8.4 billion (Perrigo Company 2012 Form 10-K).

In July 2013, Perrigo Company and Elan plc (Ireland) engaged in a merger. New Perrigo was formed as an Irish holding company to own both Perrigo and Elan. Elan shares were exchanged for \$6.25 in cash and 0.08 shares of New Perrigo. Leopard Company, an indirect subsidiary of New Perrigo, merged into Perrigo Inc., with Perrigo as the merger survivor. Perrigo Company shares were canceled and converted on a one-for-one basis into shares of New Perrigo (\$0.01 cash per share also went to exchanging stockholders). New Perrigo was officially named Perrigo plc. This transaction resulted in 29 percent ownership by former Elan shareholders and 71 percent ownership by former Perrigo shareholders in Perrigo plc (Perrigo Limited 2013 Form S-4).

Extracted directly from the Perrigo Limited 2013 Form S-4, the diagrams in Figure 11 portray the pre- and post-transaction structures of the entities involved in the inversion transaction.



Source: Perrigo Limited 2013 Form S-4  
 Figure 11: Perrigo/Elan Merger  
 Panel A – Pre-Inversion Structure



Source: Perrigo Limited 2013 Form S-4

Figure 11: Perrigo/Elan Merger  
Panel B – Post-Inversion Structure

The analysis for Perrigo Company is based on the graph shown in Figure 12, with data ranging from two years before the inversion through a year post-inversion. As in other cases previously described, Perrigo Company added significant intangible assets to its balance sheet in the inversion year. These assets were recognized on the balance sheet in 2014. Consequently, the return on total assets declined rather significantly. Because operating margin and return on tangible assets declined in the inversion year, and these metrics remained lower post-inversion than pre-inversion, it is not unreasonable to conclude that the indicated reduction in operating efficiency was not due to the large addition of intangible assets but, rather, to the diminished profitability.

Looking at the tax metrics, there are no clear tax benefits evident in the post-inversion period. In the first three years of this period, the effective tax rates were 23.24 percent, 27.28 percent, and 24.69 percent in 2012, 2013, and 2014, respectively. The effective tax rate in 2015 (a year post-inversion) was actually negative. That is because the company realized a loss before income tax when interest expense and other income were included in the calculation. In the same year, the company benefited from deferred tax assets, resulting in a positive net income and a negative effective tax rate. Overall, then, there is rather weak/limited evidence of benefit from the lower statutory Irish tax rate and quite strong evidence for an overall major decline in operating efficiency.

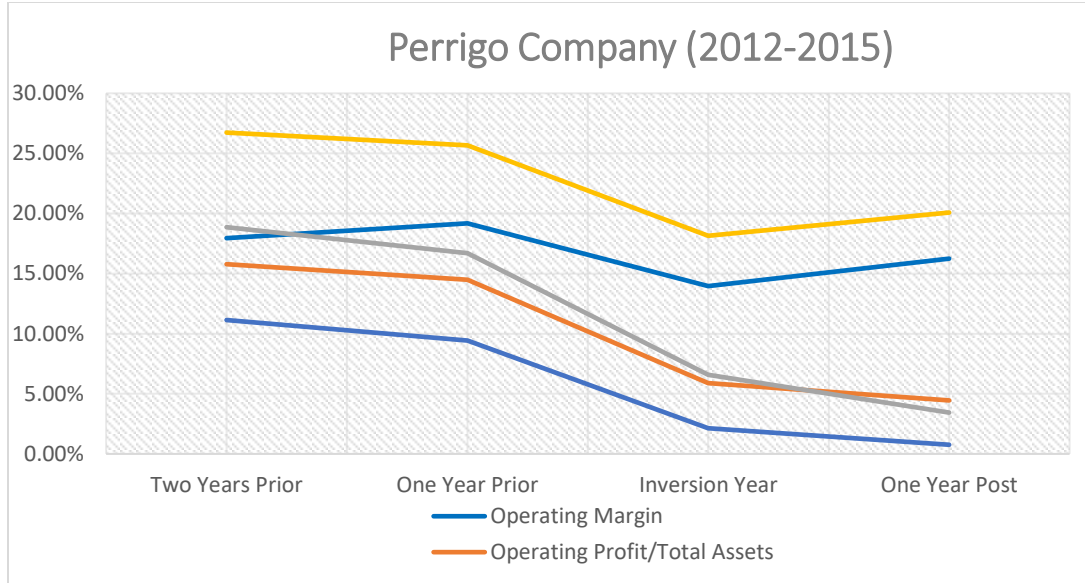


Figure 12: Perrigo Company Financial Measures, 2012-2015

### U.S. Target: Pentair Company

Pentair Company was founded in 1966 in Arden Hills, Minnesota. The company operated in two major segments – the Water & Fluid Solutions division specialized in the movement, storage, treatment, and consumption of water; the Technical Products unit, certainly a nonhomogeneous one, which designed protective enclosures for sensitive electronics. As of July 2011, the company's stock was worth \$3.9 billion (Pentair Company 2011 Form 10-K).

To begin a somewhat contorted series of transactions that generated the tax inversion, in May of 2012, Pentair Inc. and Tyco International Ltd. (Switzerland) entered into a merger agreement. Tyco Flow Control Business (TFCB) was spun off from Tyco International. Freed from Tyco, this company was incorporated in Switzerland as New Pentair and was formally known as Pentair Ltd. Pantho Merger Sub, a merger subsidiary wholly owned by New Pentair, merged with the American firm Pentair Company. New Pentair shares were exchanged on a one-for-one basis for Pentair Company shares. Tyco then distributed New Pentair shares to its own shareholders on a special formula – purported to equalize valuations – calculated as the product of the number of Pentair shares multiplied by 1.11 divided by the number of Tyco shares. After this transaction was completed, former Pentair Company shareholders owned 47.5 percent, and Tyco shareholders owned 52.5 percent of Pentair Ltd. (Tyco Control Business 2012 Form S-4). Later, in April of 2014, Pentair Ltd., the Swiss firm, merged with Pentair plc (Ireland) to move the legal tax jurisdiction to Ireland ("Pentair Ltd. and Pentair plc," 2014).

The diagrams in the four panels of Figure 13 show how this extraordinarily complex and somewhat drawn-out "double" inversion occurred.

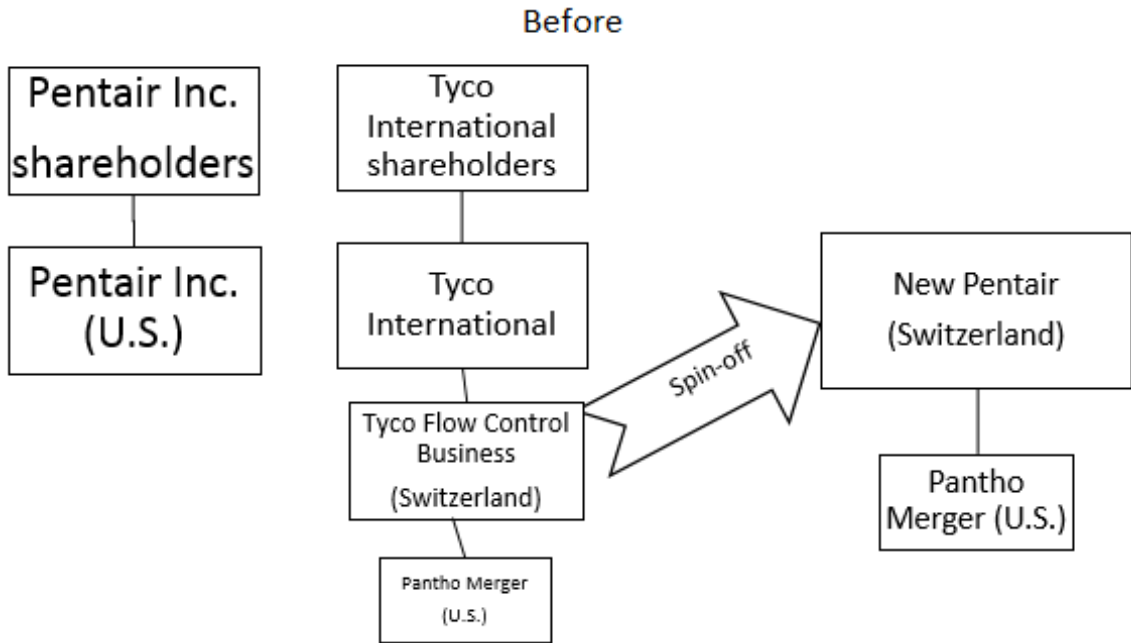


Figure 13: Pentair/Tyco Merger  
Panel A – Initial Pre-Inversion Structure

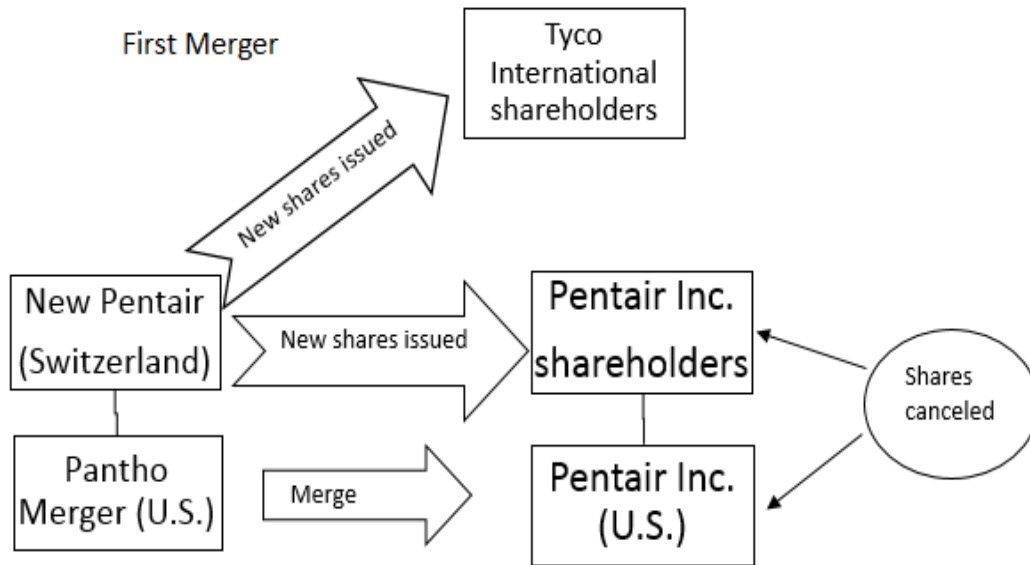
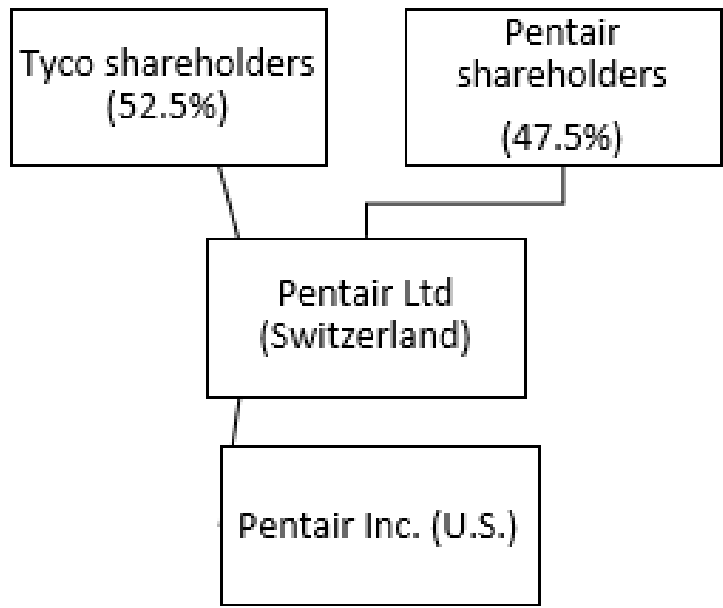


Figure 13: Pentair/Tyco Merger  
Panel B – First Merger Event and Altered Pre-Inversion Structure

### After First Merger (2012)



### Second Merger

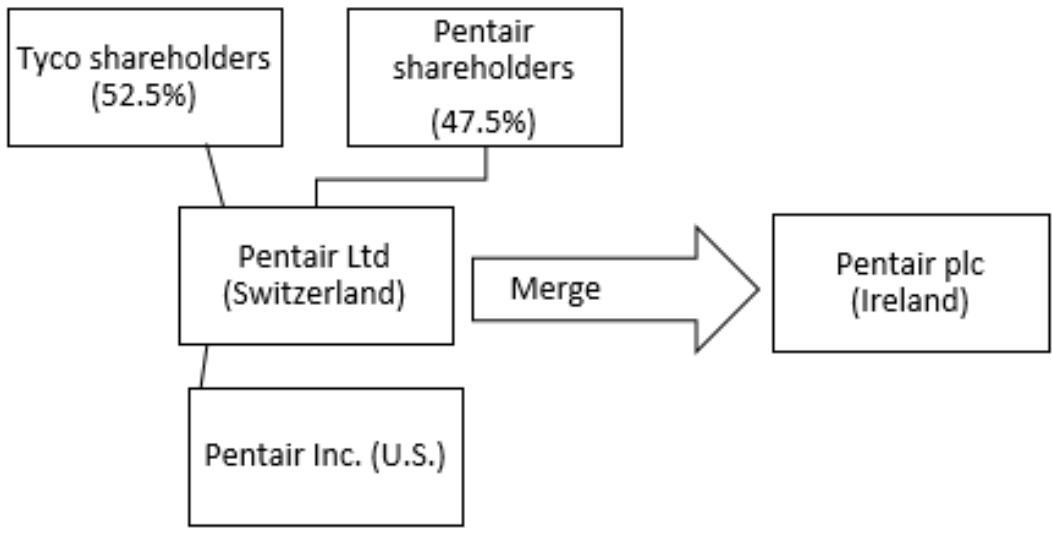


Figure 13: Pentair/Tyco Merger  
Panel C – Second Merger Transaction

## After second Merger (2014)

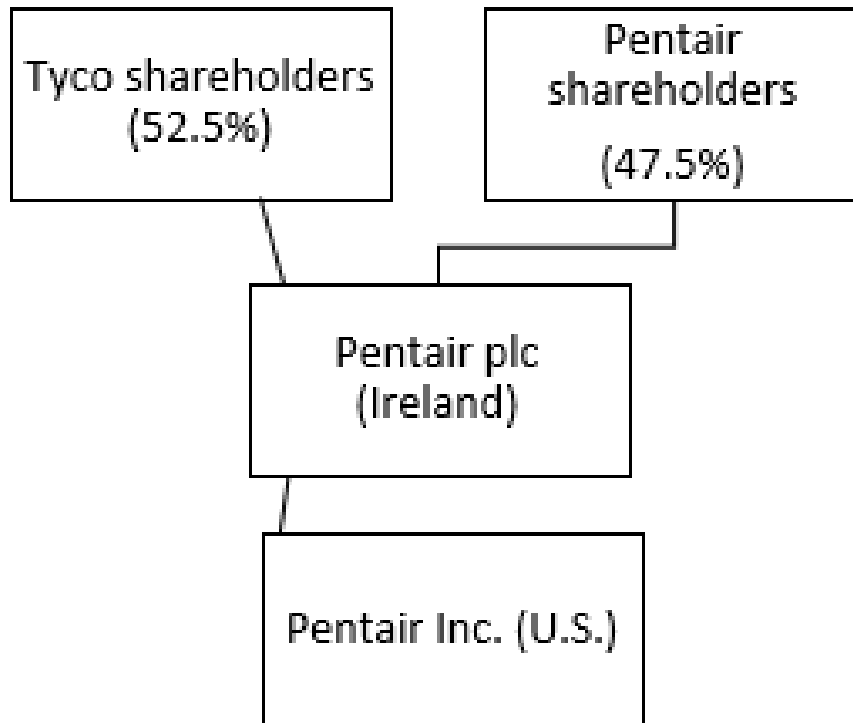


Figure 13: Pentair/Tyco Merger  
Panel D – Post-Inversion Structure

The timeline of graphical data in Figure 14 displays Pentair's financial metrics over five years, with the initial inversion in the year that coincided with the company's move to Switzerland. There was a subsequent inversion to Ireland in 2014.

For Pentair, the most appropriate approach to assessing value creation is to examine the return on tangible assets. The company added significant goodwill to its balance sheet in the year of the first inversion (2012), and that asset recordation strongly skews the return on total assets metric. The company's operating return was considerably impacted by a goodwill impairment charge (discussed below). In the two years after inversion, it seems that Pentair "recovered" from the inversion impact rather quickly, improving its operating return on tangible assets in a substantial manner. Since operating return appears to improve after the inversion, there is a need to analyze the tax impact. The company saw a decrease in the effective tax rate during this period. The effective tax rate was 32.4 percent in 2010, 65.5 percent in 2011, 43.1 percent in 2012, 25.3 percent in 2013, and 22.6 percent in 2014. Therefore, it does appear that there was an authentic tax benefit garnered from the lower effective rate.

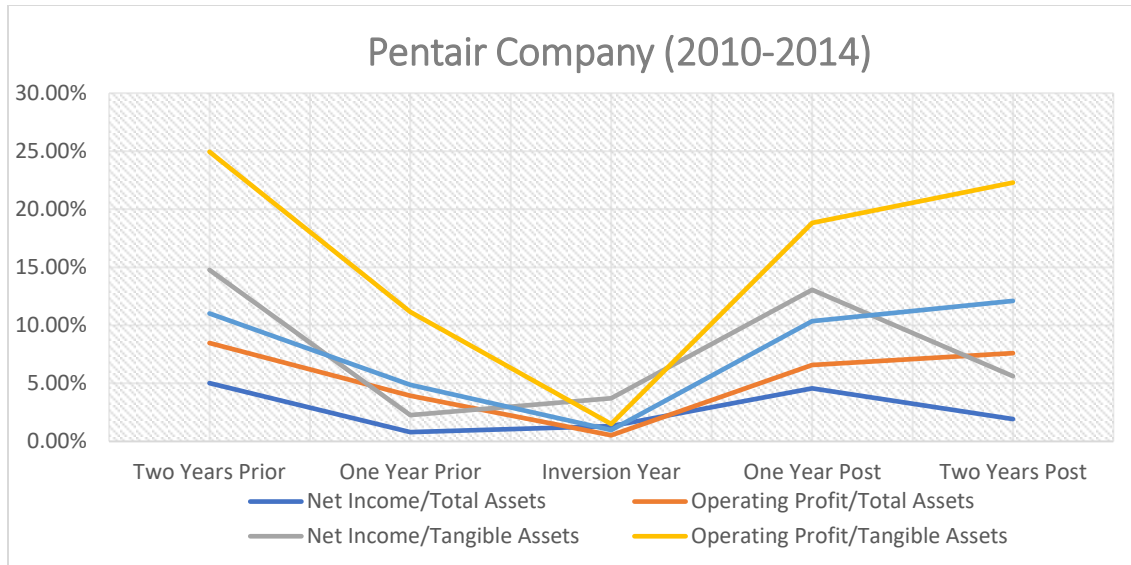


Figure 14: Pentair Company Financial Measures, 2010-2014

As Mallinckrodt previously discussed, Pentair Company's operating profit was impacted in a significant way by a large goodwill impairment charge. One year before the inversion, the company recorded a \$200 million write-down on intangible assets; as a result, there was a much lower operating profit. The impairment, it should be noted, was related to a previous acquisition that Pentair made. However, all impairments should be incorporated into the analysis since every acquisition was part of an apparent overall serial-inversion strategy. Not shown in this graph (Figure 14), but also important, the company recognized a \$555 million impairment for 2015 that occurred three years post inversion. As a result, between 2014 and 2015 return on tangible assets declined from a healthy 12.1 percent to a paltry 2.7 percent.

While Pentair did appear to benefit from a lower effective tax rate post-inversion, the tradeoff was the loss on impairment realized, first in the inversion year and then three years after the inversion. It is not unreasonable to conclude that this long, drawn-out serial inversion activity, no matter how carefully it might have been planned, did not lead to any significant enhancement in the value-creation attempts by company management.

### Discussion of the Seven-Case Value Creation Analysis

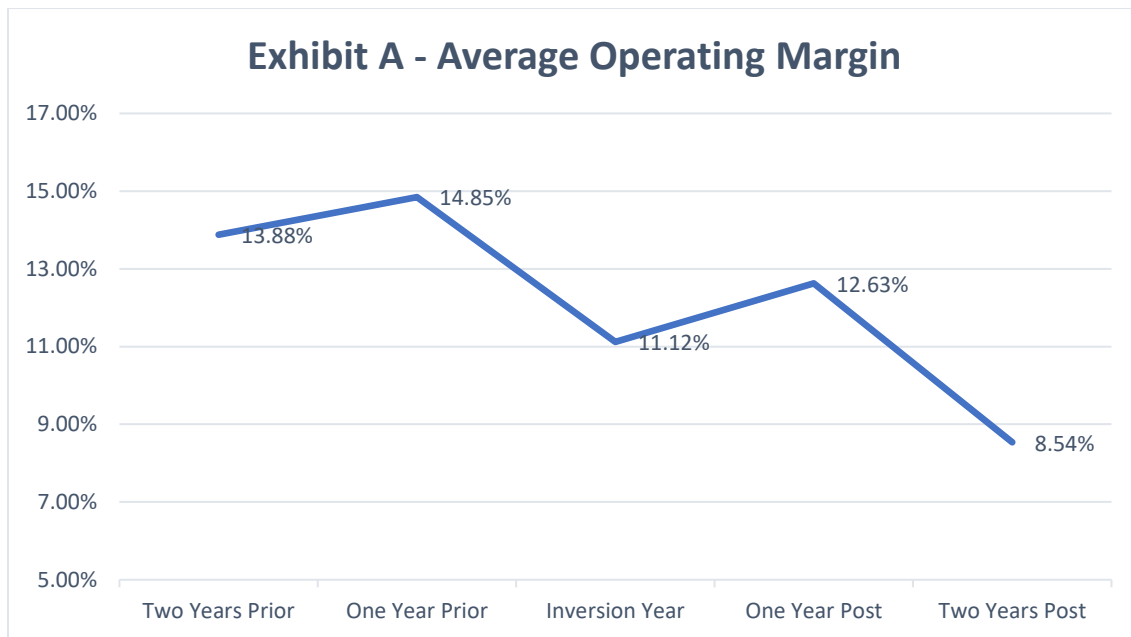
To further the investigation begun above with respect to these seven separate inversion events, the financial metrics from each firm were averaged and placed on the same timeline. For example, all the ratios from the year prior to inversion were averaged. The end result of this process is a timeline graphic displaying the average financial measures for years before an inversion, for the inversion year, and the years after the inversion was consummated. If the inversions added or destroyed value, this normalized timeline will show evidence of a discrepancy in metrics before and after the transaction.



Analyzing the data in this aggregated form makes it possible to detect trends emerging from the seven separate case examples that were described in detail above.

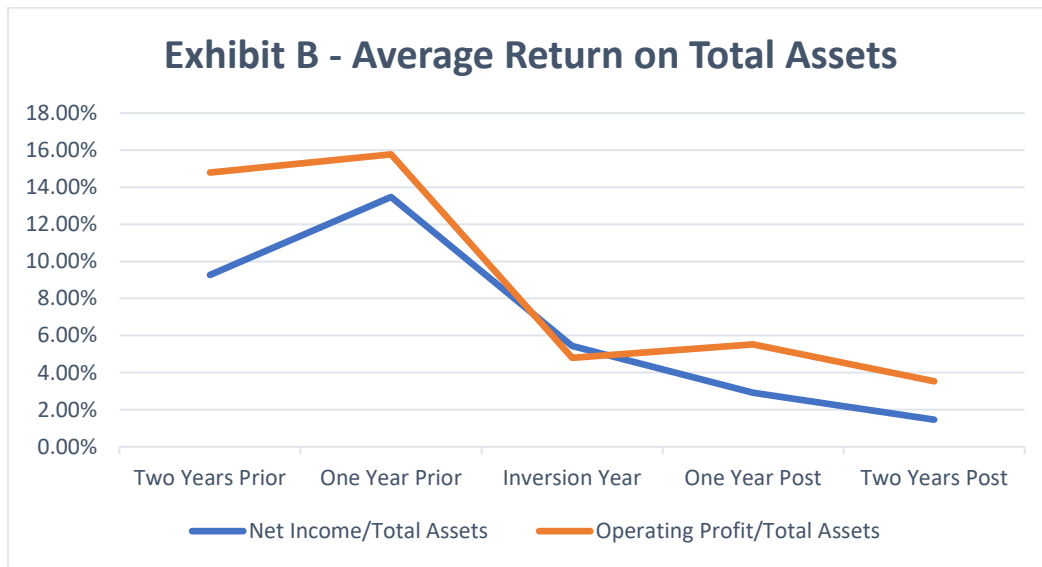
A further point about applying this unique aggregation method is needed to demonstrate its usefulness. Since the actual date ranges varied due to different inversion years, the data are protected from macroeconomic biases in any particular year.

To begin with, the operating margin was analyzed over the normalized timeline to gauge whether operating efficiency was sacrificed to obtain tax avoidance. Exhibit A below displays the operating margin over the normalized timeline. The graph reveals a decidedly negative movement for operating margin as time elapsed subsequent to the inversion event. In the year prior to each inversion, these companies averaged 14.85 percent for an operating margin. This metric declined to 11.12 percent during the year of inversion. It never rebounded to the level attained prior to the inversion transaction. This outcome appears to confirm that mergers instigated for tax reasons may cause a decline in net revenue retention.



The data plotted in Exhibit A show a decline in operating profit relative to revenue. While this implies that there was a reduction in efficiency after the inversion-inducing merger, the decline in operating margin is of insufficient absolute size to conclude that inversions *cannot* create value. To gather further insight, given this seemingly inconclusive initial finding, the return on assets metric was analyzed to assess overall operating efficiency. In addition, operating return on assets and net income return on assets were compared to assess the below-the-line impact of taxation more directly.

Exhibit B depicts a comparison between these two metrics. The major takeaway from this graph is that operating returns declined dramatically in the two years after the inversion. As a result, the net income ROA measure fell as well. This is even more telling: The variance between net profit rate and operating return did not improve after inversion. That conclusion is egregiously counterintuitive as an outcome of transactions that are expected to create a wider gap between the intermediate profit indicator of operating margin and the bottom line after-tax indicator of return on sales. By all these indications, inversions do not appear to enhance the value that might be available for shareholder distributions.



With so few observations generating these two data series, it is possible that an extreme value (or two) might divert the outcome from its "true" path. For example, Jazz Pharmaceutical realized far more extreme swings in its metrics than any of the other six merged entities described above. Jazz's general trend may align with the overall view seen in this graph (i.e., Exhibit B), but the aggregated data surely are skewed, in one direction or the other and over time, by this outlier firm. Yet even an arbitrary exclusion of the Jazz data will not change the generalized result that is portrayed in the data series.

Another *potential* misleading factor in Exhibit B is the impact of goodwill. Goodwill is added to the balance sheet after a merger/acquisition to incorporate acquired intangible assets that are not indicated by the net book value of the acquired entity. Goodwill is, supposedly, a sign of inherent (although unbooked, or off-balance sheet) value-creating efficiencies. This means that actual booking of goodwill, as is done to given recognition to the merger event, should have a positive effect on profit, the accounting measure indicating efficiency. But, when goodwill is added to the merged-entity balance sheet, the return on total assets calculation is impacted after the inversion because of a significantly larger ratio denominator. To avoid this bias, which cannot be adjusted for using accounting data, operating return on tangible assets has been

compared to net income return on tangible assets. Given the nature of the merger transactions described here, this is a very important reframing of the analytical viewpoint.

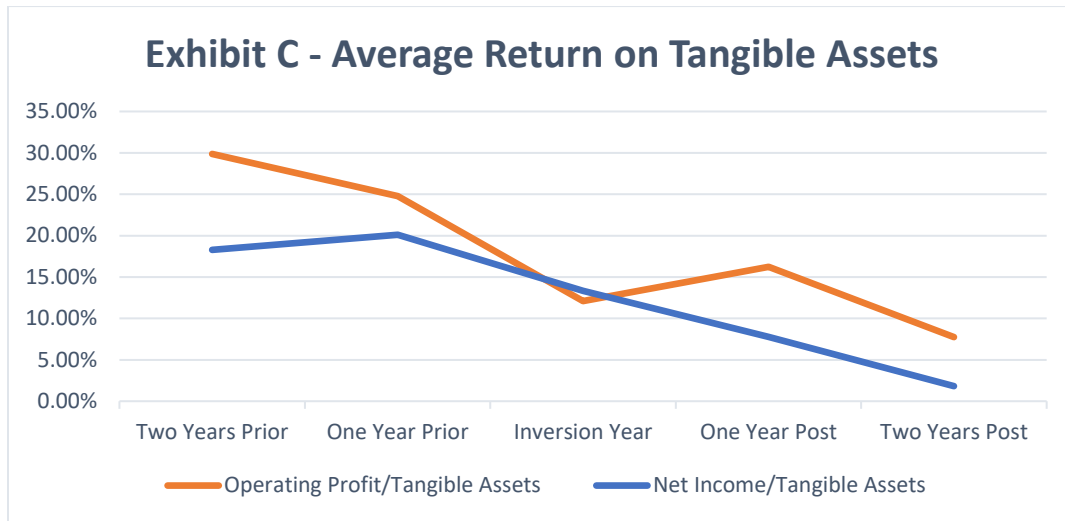


Exhibit C is a fair measurement of efficiency because it is free of the bias introduced by bolstering the balance sheet with acquired intangibles and the book-balancing goodwill asset. Exhibit B shows a significant variance in operating return on assets and net income return on assets before and after the inversion occurrence. For the inversion year, average net income actually exceeded operating income. This, in itself, is a seriously misleading result because Jazz Pharmaceutical, Alkermes, and Penair all saw financial factors wholly unconnected with taxation create an increase in bottom-line net income. Jazz Pharmaceutical was the most significant influencer in this outcome because of its extreme return rates. Nonetheless, the operating return on tangible assets declined by 11.77 percent in the year of the inversion, and the metric remained significantly lower in the two years after the merger event.

Importantly, no significant evidence exists that more operating profit was retained after the inversion events. The average operating income over net income ratio was 61.2 percent two years before the inversion, 81.2 percent one year before the inversion, 110.5 percent for the inversion year, 47.9 percent one year after the inversion, and 23.5 percent two years after the inversion. This indicates a surprising reduction in the retention of operating income that coincided specifically with the inversion period. Except in the inversion year, when net income exceeded operating profit, there are very few signs of measurable bottom-line benefits from the inversions examined here.

Table 2 shows an overall summarization of all five financial measures and each of the seven inversions included in this case study. The original issue posed for resolution was whether these transactions appeared to create value. The table was created to show all 35 measurement points in a way that this straightforward question can be answered

in a binomial fashion. In just six instances – and half of these were generated by the Questcor-Covidien merger – does it seem that the accounting measures of value creation moved in a positive way from two years before the inversion to two years after the transaction? It seems not inappropriate to say that for the companies and times studied here, the intervention of an inversion transaction was not value-enhancing.

Table 2: Pre- and Post-Inversion Directional Comparison of Acquiring Firms' Profit Measure

Earnings Metric	Change in Earnings Metric from Pre- to Post-Inversion Period						
	Alkermes	Jazz	Eaton	Questcor	Actavis	Perrigo	Pentair
Net Income/Total Assets	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
Net Income/Tangible Assets	Decrease	Decrease	<b>Increase</b>	<b>Increase</b>	Decrease	Decrease	Decrease
Operating Income/Total Asset	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
Operating Income/Tangible A	Decrease	Decrease	Decrease	<b>Increase</b>	Decrease	Decrease	Decrease
Operating Income/Net Sales	Decrease	<b>Increase</b>	Decrease	<b>Increase</b>	Decrease	<b>Increase</b>	Decrease

Pre-inversion = second year *prior* to inversion

Post-inversion = second year *after* inversion

One last, possibly tangential, item requires short discussion and recognition before the conclusions are drawn. Deferred tax was a significant factor in its impact on net income available to shareholders. Unfortunately, little information is provided in the Form 10-Ks regarding the composition of the deferred tax account. Theoretically, a decline in deferred tax liabilities previously booked that is related to the change in jurisdiction should explain the below-the-line inversion benefits. Contrary to this conceptual view, though, is the actual fact that most companies claimed to be releasing their valuation allowance in the year of inversion, and such a reason for the valuation change certainly is not connected in any direct way to the tax jurisdiction choice for which an inversion is expected to have been undertaken. So, the deferred tax change impact that was discovered remains a conundrum for the companies and time periods studied here and, therefore, must be left for detailed investigative study by future researchers.

### Limitations of this Study

The sample size of seven is an obvious limiting factor in this research. More inversion cases will have to be analyzed to demonstrate the statistical significance of the

metrics described in this paper. Essential control in the analysis, though, will be lost were that to occur. Specifically, the single-country focus will disappear if other inversions are to be considered. The added complication of multiple tax regimes could well enhance realism and generalizability but at the great cost of injecting a myriad of potentially conflicting tax system operational factors. No two countries have the same procedural development of either tax base or tax liability. It is entirely uncertain that conclusions from a similar study involving U.S. company inversions in multiple tax jurisdictions can lead to clear and unequivocal outcomes, as when just one tax regime is the exclusive focal study domain.

This inquiry about inversion outcomes compared operating income to net income. Other factors, in addition to taxes on profit, can influence discrepancies in the behavior of operating income and net income. As a means to isolate the impact of taxes on income, a better comparison may be pre-tax income to net income. Even so, it is operating profit that is the best choice to examine the impact of an inversion on management's effectiveness in dealing with a company's internal value creation.

This research analyzed value creation utilizing accounting statement data from a purely internal perspective. It did not consider the impact of investment returns based on the market valuation of shares. Certainly, that would be a useful extension of this study. However, such an alternative view does not in any way obviate the fact that management's objective must remain internal value creation through the effective and efficient deployment and usage of the resources placed in their charge.

Finally, the study was limited to a five-year timeline, with only two years of post-inversion data observed. This project provided great insight into the short-term impacts of an inversion. Assessing these companies for a greater number of years, or observing inversions from earlier periods, might provide a better understanding of longer-term consequences. Data and model specification limits, along with significant subsequent changes in the U.S. tax laws, effectively precluded taking such a broader point of view.

## **Conclusions**

The prominence of pharmaceutical firms' inversions is unmistakable in this research. Five of the seven U.S. targets were pharmaceutical corporations. These companies' most critical assets are their intangibles—resources such as patents and trademarks. Since intangible assets can be easily transferred across national borders, it remains unremarkable that inversions in the pharmaceutical industry would be facilitated based on their general asset composition. Foreign revenues compose a significant portion of total sales for pharmaceutical companies. This international revenue generates significant tax avoidance with a low-tax-rate Irish headquarters location (Rockoff, 2014).

In every case studied here, a U.S. merger subsidiary was formed to combine with the U.S. target, and that target survived the merger. This is often referred to as a "reverse triangular merger." The other two major types of mergers are "direct" and "forward triangular." The direct merger occurs when the target becomes a blended part of the purchaser. The target corporation does not survive the combination in a forward triangular merger. The advantages of a reverse triangular merger over a forward triangular merger include contract continuity, faster execution, separation of liabilities, and ease of sale ("Benefits of Reverse Triangular Merger," 2013). On the other hand, direct mergers pose consolidation complications and offer few advantages. The advantages of a reverse triangular merger surely outweigh its disadvantages.

In most cases studied here, the two parties agreed to form a holding company to acquire domestic and foreign entities. Many business benefits regarding holding companies exist, including additional tax advantages, access to new resources, higher transparency, parent flexibility, the neutrality of parents, flat hierarchies, and reduction of control cost (Eicke, 2008). There is fundamental reasoning behind the choice of the corporate structures observed in this research. As predicted by the background research, the former shareholders of the U.S. corporation always owned less than 80 percent of the new corporation and, except in two cases, held more than 50 percent so as to maintain control. All of this argues that tax effects simply might not drive the inversions observed. That conclusion is important given that basic value enhancement was not observed.

It was evident from the research results that operating margin and operating efficiency declined at a time that coincided with the inversion event. However, the research showed that the companies attempted to avoid these losses by harnessing a horizontal combinatorial strategy. They went to great lengths to find counterparts in the same line of business. For example, Tyco International spun off Tyco Flow Control Business because it was a part of the same niche water industry as its merger partner Pentair. There was a pursuit for synergies that could justify these strategic partnerships. So, maybe "value" in the context of inversions can have different meanings to the actors involved. That being said, possibly the "hunger" for lower relative tax payments via reduced tax rates is not the principal or overriding rationale for these cross-border mergers.

Nonetheless, the companies realized a decline in operating efficiencies during and after the inversion. Furthermore, as examples, Pentair Company and Mallinckrodt realized significant impairment losses related to the merger event itself. Therefore, partnering with the right company would seem crucial to implementing continuing profit and a successful inversion.

While the current research did not provide significant evidence of value creation from a financial analysis perspective, further research needs to be completed to determine if these inversions added value to shareholders through the market valuation of shares.

A market-based focus can assist in a broader determination of the usefulness of inversions as a tactic.

Two giants, the United States, and the European Union will determine the future of inversions and the low-rate tax regime in Ireland. Both are battling to control the regulation of U.S. corporations' outreach. The IRS asserted plans to curtail U.S. corporate inversions decades ago by not recognizing serial inversions and ignoring passive assets during the valuation of acquired companies. The European Union has drastically changed its approach to identifying what constitutes state aid, presumably changing the incentive for Irish tax benefits. Moreover, now there is significant and serious worldwide recognition that taxes make a difference in international trade and that some minimum rate of income taxation may be required among developed nations to "level the playing field."

Corporate tax-centered inversions are like cockroaches, a species that never seems to perish regardless of the eradication remedy applied. This has been true for inversions in general over the past four decades. Now, European-country inversions will face the wrath of two powerful governmental bodies, which will determine the viability of this technique for adjusting corporate legal domiciliary for tax purposes. Still, if inversions are not value-creating events, they may "die" alone.

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# The Moderating Effects of Product and Consumer-Brand Relationship on Type of Rewards in Consumer Cocreation

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## **Abstract**

*Purpose – The main objective of this paper is to examine the differential effectiveness of monetary and non-monetary rewards in motivating consumers to participate in co-creation during the process of new product development.*

*Method – Three pre-tests and two experimental design studies were conducted to test the conceptual framework. Study 1 involves a 2 (reward type: monetary vs. non-monetary rewards) X 2 (product type: utilitarian vs. hedonic products) between-subject factorial design to test the moderating role of product type in reward type – WPCC (willingness to participate in consumer co-creation) relationship. Study 2 tests the moderating role of the consumer-brand relationship type in reward type – WPCC relationship. A 2 (reward type: monetary vs. non-monetary rewards) X 2 (consumer-brand relationship type: exchange relationship vs. communal relationship) between-subject factorial design is conducted.*

*Findings – Results of our studies provide empirical evidence that the differential effectiveness of monetary and non-monetary rewards depends on product type and consumer-brand relationship type. Specifically, consumers are more motivated by monetary rewards when they are engaged in the co-creation of utilitarian products; consumers are more attracted by non-monetary rewards when helping develop hedonic products. Moreover, the relationships between consumers and products (in either an exchange relationship or a communal relationship) will also affect the effects of monetary vs. non-monetary rewards on consumer co-creation. In other words, monetary rewards work better in motivating consumers to participate in co-creation when there is an exchange relationship between consumers and products, while non-monetary rewards motivate consumers in a communal relationship better.*

*Limitations – Since our research used student samples, future research could use non-student samples to corroborate the generalization of current research. Moreover, we only*

*tested product type and consumer-brand relationship type as moderators. It is plausible that other relevant factors such as cultural differences may play a role in the link between reward type and consumer co-creation performance.*

*Implications – Our research provides important practical implications to marketers and brands that both product type and consumer-brand relationship type should be taken into consideration when brands design their consumer co-creation rewarding mechanism. Companies should use different rewards to promote consumer participation in new product development. Companies, in addition, would benefit by knowing that their existing relationship type with a consumer (exchange or communal) affects the impact of monetary vs non-monetary rewards on consumer co-creation.*

*Originality – This is the first research in marketing, as far as we know, that examines how the two novel but relevant constructs - product type and consumer-brand relationship - may moderate the effects of monetary vs. non-monetary rewards on consumers' willingness to participate in consumer co-creation.*

**Keywords:** consumer co-creation, new product development, reward type, product type, consumer-brand relationship type

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## Introduction

Since the introduction of service-dominant (S-D) logic (Vargo & Lusch, 2004, 2008), consumer co-creation has been gaining popularity in marketing research and with marketers (Hoyer et al., 2010; Leung et al., 2019; Read et al., 2019; Xie & Jia, 2016). Consumer co-creation refers to “a collaborative new product development activity in which consumers actively contribute and select various elements of a new product offering” (O’Hern & Rindfleisch, 2009, p. 4). It advocates collaborative creation (Prahalad & Ramaswamy, 2000) and marks a shift away from a company-centric view. In a co-creation process, consumers provide knowledge and communicate ideas with brands to develop new products or to improve existing products (Ernst et al., 2010) in an easy and cost-effective way (Hoyer et al., 2010; Xie & Jia, 2016).

The benefits of doing so are abundant such as involving consumers in co-creation allows brands to better understand consumer needs, improve customer satisfaction, increase product development efficiency and effectiveness, gain advantages over competitors, and decrease the likelihood of new product failure (Hauser, Tellis, & Griffin,

2006; Hoyer et al., 2010; Leung et al., 2019; Prahalad & Ramaswamy, 2004; Xie & Jia, 2016). Given such benefits, brands have developed programs to motivate consumers to participate in the co-creation process. In these programs, consumers are offered either monetary rewards (e.g., cash awards, coupons, vouchers, etc.) or non-monetary rewards (e.g., recognitions, VIP status, etc.) when their contributions are adopted.

For example, on Lego Ideas, Lego's online community, consumers are able to submit their ideas/designs for new sets. Once a new set idea receives 10,000 votes, Lego reviews the design which, if approved, will be produced, and sold worldwide. The creator (consumer) will be rewarded a certain percentage of sales (monetary reward) and recognition as the creator on all packages (non-monetary reward) (Milbrath, 2016). Lego Ideas has proven to be a powerhouse fueling the brand's continuous innovations and competitive advantages.

After conducting a meta-analysis, Chang and Taylor (2016) summarized four categories of factors that affect the effectiveness of consumer participation in a co-creation process: contextual factors, relationship factors, organizational support factors, and consumer participation design factors. Previous research has been evolving separately, studying individual constructs belonging to the four categories. For example, Franke, Keinz, and Klausberger (2013) studied reward type in the context of consumer co-creation, one of the consumer participation design factors. Witell, Gustafsson, and Johnson (2014) studied product type, one of the contextual factors. Athaide, Stump, and Joshi (2003) studied the consumer-brand relationship, which is one of the relationship factors. However, little research has examined the interaction effects of these factors to date. We hope to fill this gap in the literature. This is important because none of these factors are likely to work exclusively for others. To the best of our knowledge, no research has ever empirically investigated consumer co-creation in the contexts of those variables.

Moreover, most of the participation motive research examined brand community members and focused on the impacts on the effectiveness of consumer co-creation. Franke, Keinz, and Klausberger (2013) called for more research on consumers' initial decision to participate. Our research addresses such issues by examining the impact of reward type, especially the effects of monetary versus non-monetary rewards on consumers' willingness to participate in consumer co-creation (WPCC). In this study, we further propose two moderators, product type and consumer-brand relationship type, and examine their effects on the link between reward type and WPCC.

Our research offers important theoretical and practical value. Our experiments extend the existing marketing literature on consumer co-creation and introduce two important moderators in the relationship between reward type and WPCC. Practically, our results suggest that companies should use different rewards to promote consumer participation in new product development. Companies, in addition, would benefit by

knowing that their existing relationship type with a consumer (exchange or communal) affects the impact of monetary vs non-monetary rewards on consumer co-creation.

## **Literature Review and Hypotheses**

### **Reward Type**

Marketing literature on consumer co-creation motives mainly focuses on identifying different motivations (i.e., Xie & Jia, 2016), and discussing factors that affect the effectiveness of consumer co-creation (Chang & Taylor, 2016; Franke, Keinz, & Klausberger, 2013). Literature shows that consumers are motivated to participate in the co-creation process for two reasons: (1) intrinsic motivations such as curiosity, feeling of self-achievement, dissatisfaction with current products, interest in innovation, and altruism (Fuller, Faullant, & Matzler, 2010; Hars & Ou, 2002; Nambisan & Baron, 2009; Xie & Jia, 2016) and (2) extrinsic incentives such as monetary rewards, future return expectation, and the recognition by the corporates and the public (Fuller, Faullant, & Matzler, 2010; Hars & Ou, 2002; Jeppesen & Frederiksen, 2006; Oreg & Nov, 2003; Xie & Jia, 2016).

Consumers are intrinsically motivated if they have an inherent need to feel capable and self-determined (Deci, 1975) and they participate in co-creation for its own sake (Fuller, Faullant, & Matzler, 2010). Consumers are extrinsically motivated if the participation originates from the environment and is driven by rewards (Hars & Ou, 2002). Due to the lack of adequate research in the domain of extrinsic incentives in the context of consumer co-creation, we decided to limit our research to examine the impacts of two types of extrinsic motivations, monetary versus non-monetary rewards.

The rewards consumers receive play a critical role in attracting them to participate (Keh & Lee, 2006). Using rewards consumers do not always necessarily appreciate leads to their hesitation to join the programs (Ruzeviciute & Kamleitner, 2017). Thus, companies need to understand which type of reward can motivate consumers.

There are two types of extrinsic rewards: monetary rewards (e.g., cash awards, coupons, vouchers, etc.) and non-monetary rewards (e.g., recognitions, VIP status, etc.; Franke, Keinz, & Klausberger, 2013) mainly adopted by the companies. Generally, monetary rewards provide “economic benefits” while non-monetary rewards focus more on “experiential or relation-oriented benefits” (Ruzeviciute & Kamleitner, 2017, p. 114).

Researchers have examined monetary versus non-monetary incentives in different contexts. For example, Ruzeviciute and Kamleitner (2017) found that monetary referral rewards are better than non-monetary referral rewards in loyalty programs across various industries. Monetary rewards are valued (Furinto et al., 2009) because of their



utilitarian benefits (Ruzeviciute & Kamleitner, 2017) and attention-grabbing (Hubner & Schlosser, 2010), thus they are a better motivator (Hammermann & Mohnen, 2014).

Among the very limited research on the differential effectiveness of monetary vs. non-monetary rewards in a consumer co-creation process, researchers came to different conclusions. For example, monetary rewards, in general, seem to produce better performance than non-monetary rewards, but non-monetary rewards may not incentive everybody to the same degree, due to objective numeracy, or the ability to understand or use mathematical concepts (Svensson, 2019). In addition, Herstatt and Von Hippel (1992) argued that economic benefits were the major reason why consumers were involved in consumer co-creation; while Fuller et al. (2006) indicated that non-monetary rewards had a bigger impact on consumer involvement in co-creation when motivating lead users of BMW automobile accessories. Similarly, exploratory research done by Franke, Keinz, and Klausberger (2013) indicated that featuring the winning consumer's name on the product is one of the most effective ways to increase consumers' willingness to participate through fairness perception of the co-creation process.

## **WPCC**

Consumer participation in co-creation refers to a consumer's involvement in the company's new product development process (Fang, 2008). Since involving consumers in the early ideation stage has a higher impact on new product financial performance than in the later launch stage and the development stage (Chang & Taylor, 2016), our research focuses on consumer participation in the early ideation stage. Most of the research on participation motives uses samples (i.e., brand communities' members) who have already shown interest in participating and focus on the impacts of motivations on the effectiveness and efficiency of co-creation. Franke, Keinz, and Klausberger (2013) posited the importance of more research on willingness to participate in consumer co-creation for two reasons: 1) brand communities need to attract new members constantly due to their "volatile and loose nature" (Franke, Keinz, & Klausberger, 2013, p. 1497) and 2) more consumers are needed since many more companies will launch co-creation programs. Therefore, our research particularly focuses on the effects of WPCC.

Since previous work examining the differential effectiveness of monetary and non-monetary incentives in the consumer co-creation process has shown mixed results, we propose two moderators, product type and consumer-brand relationship type (Chang & Taylor, 2016), which affect reward type - WPCC relationship.

### **Moderator #1: Product Type**

Strahilevitz and Myers (1998) classified products into two types: utilitarian products and hedonic products. Utilitarian products refer to the products purchased to "fill a basic need or to accomplish a functional task" while hedonic products are defined

as something for “sensual pleasure, fantasy, and fun” (Strahilevitz & Myers, 1998, p. 436). Both utilitarian and hedonic products rely on consumer co-creation for new product ideas. Using as an example of utilitarian products, DEWALT, a leading manufacturer of power tools (utilitarian products), gathered invention submissions from its insight community with more than 10,000 members (Milbrath, 2016). Lego is an example of a hedonic product using co-creation.

According to the exchange theory framework (Ryu & Feick, 2007), whether consumers are willing to participate in co-creation depends on the perceived benefits and costs of the exchange. The perceived benefits or motivations for participating in co-creation include intrinsic benefits such as the feeling of self-achievement and altruism (Fuller, Faullant, & Matzler, 2010), and extrinsic benefits such as monetary rewards and non-monetary rewards (Fuller et al., 2006). Participating in consumer co-creation also involves costs such as time and effort (Ryu & Feick, 2007) contributing to the co-creation and the potential ego risk if the submission is not accepted.

Chandon, Wansink, and Laurent (2000) developed a benefit congruency framework, arguing that the effectiveness of a sales promotion depends on the congruency between the benefits provided by the sales promotion (utilitarian benefits such as savings vs. hedonic benefits such as opportunities for value expression) and its promoted products (utilitarian vs. hedonic). They further empirically proved that monetary promotions delivered more utilitarian benefits, and thus worked better for utilitarian products than hedonic products while non-monetary promotions were preferred for hedonic products. Based on the benefit congruency framework, we argue that a similar relationship exists in a consumer co-creation process – monetary rewards deliver more utilitarian benefits (Ruzeviciute & Kamleitner, 2017) and work better for utilitarian products; non-monetary rewards deliver more hedonic benefits and work better for hedonic products. On the cost side, we argue that perceived costs would be the same for utilitarian and hedonic products. Therefore, we propose the following hypotheses.

*H1a: For utilitarian products, monetary rewards are more effective in enhancing consumers' WPCC than non-monetary rewards.*

*H1b: For hedonic products, non-monetary rewards are more effective in enhancing consumers' WPCC than monetary rewards.*

## **Moderator #2: Consumer-brand Relationship Type**

Aggarwal (2004, p. 87) examined two relationships that consumers could form with brands: an exchange relationship in which “benefits are given to others to get something back” and a communal relationship in which “benefits are given to show concern for other's needs”. As argued by Aggarwal (2004), consumers' evaluations rely

on whether brands adhere to or violate the norms of relationships between consumers and brands. As proposed by Clark and Mills (1993) and empirically tested by Aggarwal (2004), exchange relationship norms require prompt, comparable, and monetary benefits in return; however, communal relationship norms expect non-immediate, non-comparable, and non-monetary benefits since it is based on the concerns for consumers' genuine needs rather than simply quid pro quo. Thus, monetary rewards are more effective for an exchange relationship while non-monetary rewards work better for a communal relationship. On the cost side, the perceived costs of consumer participation are not influenced by the consumer-brand relationship. Following the exchange theory framework (Ryu & Feick, 2007), we argue that when consumers are in an exchange relationship with a brand, they will be more willing to participate in a co-creation process if monetary rewards are offered; in a communal relationship, consumers will prefer non-monetary rewards. Therefore, we propose the following hypotheses.

*H2a: When consumers have an exchange relationship with a brand, monetary rewards are more effective in enhancing consumers' WPCC than non-monetary rewards.*

*H2b: When consumers have a communal relationship with a brand, non-monetary rewards are more effective in enhancing consumers' WPCC than monetary rewards.*

Figure 1 illustrates the conceptual framework of this research.

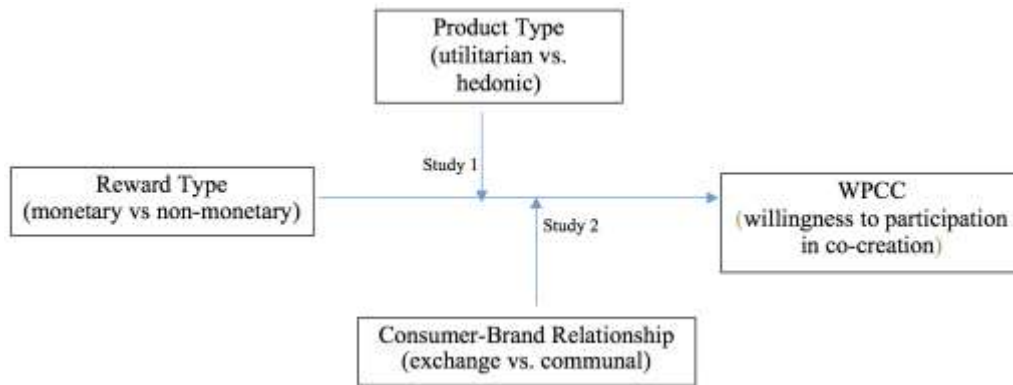


Figure 1: Conceptual Framework

## Literature Review and Hypotheses

### Pretests

Three pretests were conducted. Ten students in a university were randomly selected and interviewed in Pretest 1. The interviewees were asked to talk about the products they were interested in and willing to get involved in the co-creation process, and the ten most frequently mentioned products were identified.

Then in Pretest 2, another 20 students from the same university were recruited to answer an online survey. After being given the definitions of utilitarian products and hedonic products (Strahilevitz & Myers, 1998), the participants were asked to rate the ten products identified in the first pretest on a 7-point Likert scale (1 = it is definitely a utilitarian product; 7 = it is definitely a hedonic product). Moreover, the attractiveness (Khan and Dhar 2010) of the ten products was also measured. After examining the ratings of all ten products, T-shirts were chosen as utilitarian products ( $M_{\text{T-shirts}} = 2.55$ ) and cameras as hedonic products ( $M_{\text{cameras}} = 4.65$ ). A repeated measures ANOVA with a Greenhouse-Geisser correction indicated mean product type differed significantly between the two products ( $F(1,19) = 24.72, p < .001$ ). There was no significant difference between the two products in their attractiveness ( $M_{\text{T-shirts}} = 4.75, M_{\text{cameras}} = 5.55; F(1,19) = 3.51, p = .08$ ). Therefore, T-shirts and cameras were chosen as stimuli used in the following Study 1. Moreover, Pretest 2 identified books as neither a utilitarian nor a hedonic product ( $M_{\text{books}} = 3.70$ ) and showed an acceptable level of attractiveness ( $M = 4.15$ ). Therefore, we chose a bookstore as the stimulus used in Study 2.

Pretest 3 tested the manipulations of two types of consumer-brand relationships – exchange relationship and communal relationship used in Study 2. Following the manipulations of consumers' relationships with a bank (Aggarwal, 2004, p. 91), we revised the scenario descriptions to manipulate consumers' exchange and communal relationships with a bookstore.

*Exchange Relationship Scenario Description.* You have been visiting Bookstore X for the last three years. You have used the bookstore quite extensively and have been very happy with their efficiency and the quality of their services. The bookstore has a variety of books and you can easily locate the books you want. The bookstore also periodically holds author events and book clubs, in which you may share your thoughts with authors and other readers. In the past, whenever you have gone to the bookstore you have gotten your work done very fast – they respect your time and get the job done fast. Overall your experience with Bookstore X has been excellent.

*Communal Relationship Scenario Description.* You have been visiting Bookstore X for the last three years. You have used the bookstore quite extensively and have been very happy with the quality of their services. You still remember how thrilled you were when you visited the bookstore for the first time. You have always associated the bookstore with positive feelings since you often visit the bookstore. The bookstore has always treated you well. Over the past few years, whenever you have visited the bookstore you have had a very pleasant and warm interaction. They seem to be taking a personal interest in you and have often taken the initiative to suggest new books in which you are interested in. Overall your experience with Bookstore X has been memorable.

Thirty participants were randomly assigned to one of the two consumer relationship types. After they read the bookstore description, participants answered 10

questions on the consumer-bookstore relationship to form a Net Communality Score by averaging the ratings of the 10 questions (Aggarwal, 2004). The manipulation check showed that the two relationship types were manipulated successfully ( $M_{\text{exchange}} = 3.74$ ,  $M_{\text{communal}} = 4.81$ ;  $F(1,28) = 20.27$ ,  $p < .001$ ).

## Study 1

A 2 (reward type: monetary vs. non-monetary rewards)  $\times$  2 (product type: utilitarian vs. hedonic products) between-subject factorial design was conducted to test the moderating role of product type in reward type - WPCC relationship. One hundred and thirty-two university students (53% female) were recruited and randomly assigned to the four conditions.

Participants were exposed to a description of the scenario: After buying a (T-shirt/camera) from company A, you are satisfied with the product. Currently, company A would like to invite you to design a product with a new pattern, color, or shape. Your design/idea will be evaluated by the company. The top three ranked consumers will receive *certain financial rewards or become company A's VIP consumers as the reward*. After reading the description, participants answered the degree to which they were willing to participate in consumer co-creation on a 3-item 7-point Likert scale. The measure of WPCC was adapted from Nambisan and Baron (2009) and was calculated by averaging the ratings on the following three questions (1 = strongly disagree; 7 = strongly agree): I am willing to participate in the company's creation activity; I am willing to submit my design and ideas to the company; I am willing to positively respond to and help other consumers' creation activities ( $\alpha = 0.84$ ). Demographics were also collected. An ANOVA results showed that cameras ( $M_{\text{cameras}} = 5.14$ ) were rated more hedonic than T-shirts ( $M_{\text{shirts}} = 3.29$ ,  $F(1,130) = 54.43$ ,  $p < .001$ ). Therefore, the product type was successfully manipulated.

A 2  $\times$  2 ANOVA was performed to test the impacts of product type and reward type on WPCC. Neither the main effect of reward type ( $M_{\text{monetary}} = 4.08$ ,  $M_{\text{nonmonetary}} = 3.88$ ;  $F(1,128) = .02$ ,  $p = .92$ ) nor that of product type ( $M_{\text{utilitarian}} = 3.84$ ,  $M_{\text{hedonic}} = 4.12$ ;  $F(1,128) = .04$ ,  $p = .88$ ) was statistically significant. As predicted by H1a and H1b, a significant interaction effect of reward type and product type on WPCC was identified ( $F(1,128) = 58.27$ ,  $p < .001$ ).

The results showed that participants were more likely to be motivated to participate in co-creating utilitarian products by monetary rewards ( $M_{\text{monetary}} = 4.67$ ) than non-monetary rewards ( $M_{\text{nonmonetary}} = 3.02$ ,  $F(1,64) = 70.76$ ,  $p < .001$ ); for hedonic products, non-monetary rewards ( $M_{\text{nonmonetary}} = 4.75$ ) worked better than monetary rewards ( $M_{\text{monetary}} = 3.48$ ,  $F(1,64) = 14.92$ ,  $p < .001$ ). Therefore, H1a and H1b were supported.

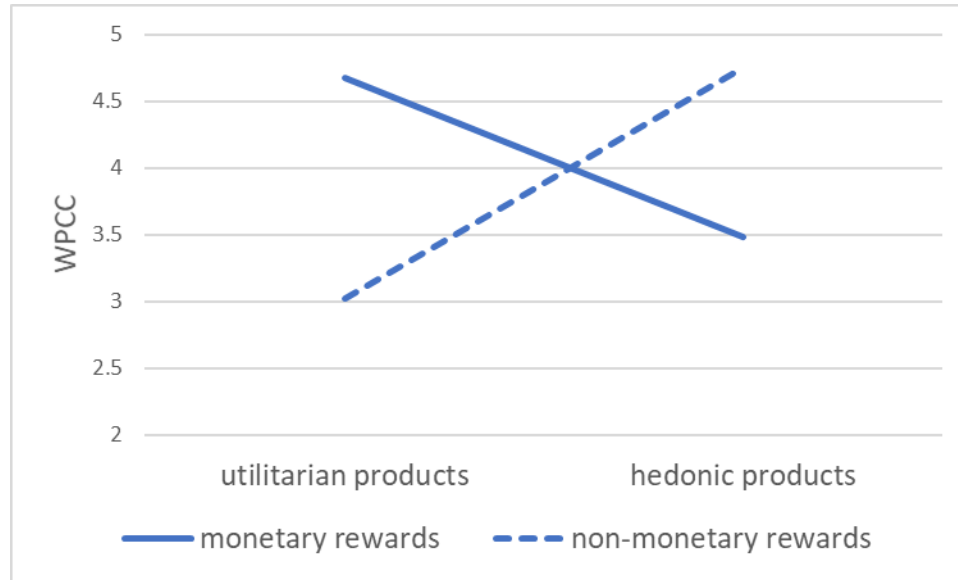


Figure 2: The Moderating Effect of Product Type in Reward Type - WPCC Relationship

## Study 2

The second study tested the moderating role of the consumer-brand relationship type in reward type - WPCC relationship. A 2 (reward type: monetary vs. non-monetary rewards) × 2 (consumer-brand relationship type: exchange relationship vs. communal relationship) between-subject factorial design was conducted. One hundred and thirty-three participants were recruited and randomly assigned to the four conditions. After removing seven incomplete questionnaires, a total of 126 (58.7% female) effective surveys from university students were included for further analyses. Consumer-brand relationship type was manipulated as in Pretest 3 and reward type was same as in Study 1.

After participants read the description of the consumer relationship with Bookstore X (exchange relationship vs. communal relationship), they were told: You are invited to participate in designing a newly expanded area of Bookstore X with book selections, store displays, and store layout. Your design/idea will be evaluated by the bookstore. The top three ranked consumers will receive *certain financial rewards (monetary reward)* or *become Bookstore X's VIP consumers as the reward (non-monetary reward)*. Then participants answered the questions of the 10-item consumer relationship measure ( $\alpha = 0.86$ ), the 3-item consumers' WPCC measure ( $\alpha = 0.77$ ), and demographics. Exchange relationship consumers ( $M_{\text{exchange}} = 3.65$ ) showed a significantly lower communality score than communal relationship consumers ( $M_{\text{communal}} = 4.97$ ,  $F(1,124) = 79.19$ ,  $p < .001$ ). Therefore, consumer relationship type was successfully manipulated in Study 2.

A  $2 \times 2$  ANOVA was performed to test the hypotheses. None of the main effects was statistically significant (reward type:  $M_{\text{monetary}} = 4.79$ ,  $M_{\text{nonmonetary}} = 4.72$ ,  $F(1,122) = .01$ ,  $p = .95$ ; consumer-brand relationship type:  $M_{\text{exchange}} = 4.85$ ,  $M_{\text{communal}} = 4.66$ ,  $F(1,122) = .05$ ,  $p = .86$ ). A significant interaction effect of reward type and consumer relationship type on WPCC was identified ( $F(1, 122) = 14.50$ ,  $p < .001$ ). When participants had an exchange relationship with the bookstore, monetary rewards ( $M_{\text{monetary}} = 5.24$ ) worked better than non-monetary rewards ( $M_{\text{nonmonetary}} = 4.41$ ,  $F(1,61) = 8.62$ ,  $p < .05$ ) in motivating consumers to participate in co-creation process; while under the communal relationship, non-monetary rewards ( $M_{\text{nonmonetary}} = 5.01$ ) had a bigger impact than monetary rewards ( $M_{\text{monetary}} = 4.30$ ,  $F(1,61) = 6.03$ ,  $p < .05$ ). Therefore, H2a and H2b were supported.

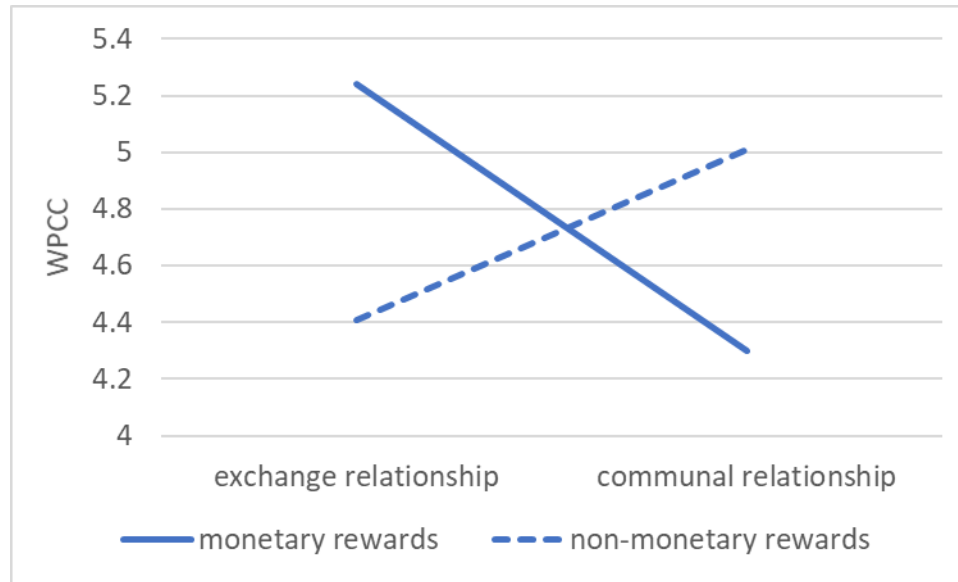


Figure 3: The Moderating Effect of Consumer-brand Relationship Type in Reward Type - WPCC relationship

## Discussion and Conclusion

This research tests the differential effectiveness of reward type (monetary versus non-monetary) on consumers' willingness to participate in a co-creation process (i.e., WPCC). We further examine the two factors moderating the effect of reward type on WPCC: product type and consumer-brand relationship.

Study 1 finds that the differential effectiveness of monetary and non-monetary rewards on WPCC exists as a function of product type (utilitarian products and hedonic products). Since monetary rewards provide more utilitarian benefits than hedonic benefits, consumers are more motivated by the monetary rewards when they are co-creating utilitarian products; while non-monetary rewards deliver more hedonic benefits than utilitarian benefits, consumers are more attracted by the non-monetary rewards when helping develop hedonic products. Moreover, the results of Study 2 show that the

relationship between consumers and a brand – exchange or communal – also affects the effect of monetary vs. non-monetary rewards in consumer co-creation. Exchange relationship norms favor monetary rewards in return when consumers offer help, therefore, monetary rewards work better in motivating consumers to participate in co-creation when there is an exchange relationship between consumers and companies. Communal relationship norms prefer non-monetary rewards, which motivate consumers in the communal relationship better.

The results of our studies provide important implications for managers. First, we inform brands that need to choose between monetary and non-monetary rewards by motivating consumers in a co-creation process. Different from either Herstatt and Von Hippel (1992) or Fuller et al. (2006), our results indicate monetary and non-monetary rewards showed no difference in affecting cocreation willingness. Given the inconsistent results in the literature, the performance of consumer co-creation depends on various moderators such as market, consumer, and product characteristics (Chang & Taylor, 2016).

Second, brands can increase consumers' participation in co-creation by matching the type of reward with the type of product. If brands would like to invite consumers to co-create utilitarian products, money is a better way to reward consumers; if brands try to motivate consumers to co-develop hedonic products, non-monetary incentives such as recognitions and honors should be provided. Finally, brands should also match the type of reward with the type of consumer-brand relationship when increasing consumers' participation in co-creation: monetary rewards work better for consumers in the exchange relationship; non-monetary rewards are better for consumers in the communal relationship.

In sum, our research suggests that both product type and consumer-brand relationship type should be taken into consideration when brands design their consumer co-creation rewarding mechanism. Since our research used student samples, future research should use non-student samples to enhance the generalization of current studies. Moreover, we only tested two moderators, product type and consumer-brand relationship type. Future research should propose and test the moderating roles of other factors such as cultural differences in the link between reward type and consumer co-creation performance.

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# An Examination of Alignment of Hotel Brand Differentiation and Customer Priorities: A Case Study of Three Unique Destinations

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## **Abstract**

*Purpose – Marketers spend millions to distinguish their properties from the competition via varying marketing paraphernalia; however, online hotel reviews may trump these marketing efforts and create reputational inferences for potential visitors that can run counter to existing corporate branding and positioning. This research has three objectives: 1. To examine the alignment of hotel brand differentiation and customers' perspective through online reviews. 2. To explore whether online reviews are typically general in nature or alternatively, match the uniqueness of the hotels being reviewed. 3. To examine the types of hotels that successfully maintain distinctiveness in online reviews.*

*Method – This study examines online hotel reviews of nine distinctive properties for three different destinations, namely, beach, big city, and eco-tourism locations. The text analysis model is generated to examine 25,579 hotel reviews across three destinations. Text processing and machine learning models were implemented to analyse the online reviews to find similarities and differences between the reviews of the selected distinct locations. The supervised machine learning method is created to predict the correct hotel category based on the text of the review.*

*Findings – The study finding suggests that despite the destination of type of hotel, customers care more about concepts such as 'service', 'room', and 'staff'. Big city luxury hotels were the only contradiction as they focused on their location and customers echoed that in their reviews, but the eco and beach resorts do not offer online reviews that are distinctive from each other.*

*Limitations – As far as limitations are concerned, we only selected the top 5 hotels in each category, and the findings might be biased toward more expensive hotels. For future studies, we would like to use the same methodology on different hotel prices in the same category and see if the results are the same or not.*

**Implications** – *The study provides evidence into the evolving status of ethical funds. The growing acceptance and popularity of such funds coincide with significantly greater cash inflows into the funds, which may continue to impact the volatility behavior of such assets. Furthermore, the growing worldwide attraction and acceptance of ethical funds may generate sufficient cash inflows so that these funds behave the same way as non-ethical funds in the future.*

**Originality** – *This research contributes to the literature as it uniquely uses processing and machine learning techniques to compare User-generated Content (UGC) such as online reviews to corporate marketing messaging and brand positioning across three different types of hotels and destinations. Additionally, a new theoretical model of User-generated Content Influence (UGCI) is proposed.*

**Keywords:** user-generated content, branding, online reviews, hotels and tourism, natural language processing, machine learning

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## Introduction

In today's "brand-centric" marketplace, brand managers have become obsessed with finding ways to differentiate their products and/or services from competitors. Customer feedback is a significant component of this differentiation, and online reviews have become the "go-to" tool for many consumers as they attempt to distinguish between competitive offerings in their decision-making process (Browning, et al. 2013; Piramanayagam and Kumar 2020; Chen and Xie 2008; Nguyen et al. 2020; Tran and Vu 2019). Nowhere is this more apparent than in the hotel and tourism sector as one hotel industry survey found that 81% of potential guests consider online reviews to be important, 95% had read an online review before taking their most recent trip, and 49% of potential guests will not make a reservation with a hotel that doesn't have online reviews (Ady and Quadri-Felitti 2015). Hoteliers and tourism professionals also recognize the impact of online reviews, and they often utilize user-generated content (UGC) to formulate strategies that can ultimately improve service quality, customer satisfaction levels, hotel occupancy rates, and overall profitability (Berezina, et al. 2015; Piramanayagam and Kumar 2020; Hu and Trivedi 2020; Tran et al. 2022).

With so many 'would-be consumers' seeking out hotel reviews, invariably brand reputation will be influenced by this form of user-generated content-UGC (Chakraborty



and Bhat 2018; Xun, 2014). One study reported that 90% of travelers will avoid booking hotels labeled as “dirty” in online reviews (ReviewPro 2011) and a 2022 BrightLocal.com study found that only 3% of consumers said they would consider using a business with an average star rating of two or fewer stars (Pittman 2022). Reviews allow customers to reduce the risk associated with service and experiential consumption based solely on advertising (Xiang and Gretzel 2010; Zhang et al. 2010). This notion of brand confirmation and/or disconfirmation is at the heart of our research study. We examine the congruency between how consumers depict a brand in online reviews and the corporate messaging hotel brands place in the marketplace. Extant literature points to the salience of online reviews and their resulting impact on brand profitability (Liu and Zhang 2020). At the same time, researchers also point out the ability of UGC to influence the information industry professionals to communicate on their websites and via marketing paraphernalia (Casaló, et al. 2015). If these two messages are completely different, existing research suggests that consumers are more likely to believe the customer review and less likely to believe the corporate branding, thereby further eroding the potential impact of corporate branding in the marketplace (Bae and Lee 2011; Southern 2018). Alternatively, if there is a synergy between the messaging communicated on corporate websites and that present in existing UGC, this in turn lends itself to more credibility for corporate branding and positioning.

We explore the similarities between UGC via online reviews and the actual brand messaging that hotels have used on their websites. Using reviews from TripAdvisor.com, we utilize text processing techniques to analyze reviews of 15 hotels across 3 different types of destinations (namely beach, big city, and eco), with the specific goal of investigating the synergy between online reviews given by the consumer and website branding offered by individual hotels. To date, there has been limited work that focused on the impact of online reviews and customer priorities on corporate branding and the reciprocal relationship between the two (Tran et al. 2022). This study contributes to the existing body of research by exploring the connection and congruency in the language used in the character development of a hotel’s brand positioning as seen from its website versus identified customer priorities and supporting/contradicting character dimensions discussed in online reviews.

## **Literature Review**

### **Online Reviews**

According to socialtoaster.com, user-generated content (UGC) is important to consumers and businesses alike. Online reviews are a popular form of UGC and have become an important source of information for both potential tourists and industry professionals alike (Godes et al. 2005; Liu and Zhang 2020). According to one study, eighty-four percent of Millennials say UGC influences their purchase behavior, and 70% of consumers, in general, say they consult UGC before purchasing a brand (Austen 2018).

The trends are the same within the tourism industry where most potential travelers surf the web for hotel reviews before clicking the “Book Now” button. In 2017 alone Trip Advisor reviews and scores influenced around \$546 billion in travel spending (Oxford Economics 2017). Hospitality professionals know that hotel reviews can affect click-through rates, hotel occupancy, and revenue generation (Hotelnewsresource.com 2018).

Findings from the 2021 Trip Advisor annual statistics study found that 87% of TripAdvisor users feel more confident in their decision when they read the reviews, and 98% say they find them “accurate of the actual experience” (Hawkins 2021). Yet online reviews are more than just an opinion on a product/service’s performance. They speak to satisfaction with a brand and act as a proxy for how much a potential consumer can trust corporate advertising and branding. Consumers today are 12 times more likely to trust an online review than corporate marketing, and 79% of consumers trust online reviews just as much as personal recommendations (Hawkins 2021), with consumers valuing these reviews more than the opinions of industry experts (Gavilan et al. 2018). These reviews are an easy way for consumers to share with others information about how they perceive confirmation or disconfirmation between what they expected from a brand in terms of product quality and what they received from that brand (Chatterjee 2001; Hu et al. 2017).

Consumers often utilize online reviews as they engage in the consumer decision-making process because reviews offer information above and beyond what is available via corporate marketing (Lee et al. 2008; Moriuchi 2016; 2018; Tran et al. 2022). Extant research tells us that consumers are willing to pay up to 20% more for services with a five-star rating compared to those with a four-star rating (Comscore.com 2017), indicating that online reviews and other forms of UGC are being used as a way of narrowing the playing field (Gavilan et al. 2018; Nguyen et al. 2020; Tran & Vu 2019) which adds to the salience of using UGC in the development of marketing strategy (Crowdriff.com 2017).

The reliance on reviews is so entrenched that companies are now willing to offer compensation to individuals who post fake reviews (both favorable reviews about their hotel and unfavorable ones against their competition) to bolster their brand reputation (Choi et al. 2017; Hawkins 2021). This has led the Federal Trade Commission (FTC) to issue notices to over 700 companies in 2021 warning them about using fake reviews and advising them that the penalty for such offenses runs upward of \$47,000 in fines (FTC.gov 2021). The FTC estimates that about 8% of Yelp reviews and a quarter of Google reviews are fake (Hawkins 2021), suggesting that companies understand the direct influence of online reviews on their brand reputation, credibility, positioning, and ultimately bottom line.

## **Brand Positioning**

Today's marketplace is cluttered and complex. To simplify the decision-making process, consumers often will organize products/services into specific categories thereby relating them to each other and offering a unique positioning for each of these product/service offerings in their minds (Kotler and Armstrong 2020). According to Alzate et al. (2022), positioning is the process of designing an organization's offering and image to occupy a distinctive place in the consumer's market's mind. It is formed "by a complex set of consumer perceptions, images, and emotions associated with the brand's products and how they compare with competing products. Therefore, to position a product, companies need to understand how consumers perceive products in its category" (p.1).

Brand positioning is driven primarily by marketing activities, integrated marketing communications (IMC), and the marketing mix (Kotler and Armstrong 2020). Brand elements such as brand names, logos, packaging, and symbols help to develop this positioning and maintain certain key associations in the marketplace (Keller and Lehmann 2006). Brand associations that evoke positive affect, as well as cognitive considerations of benefits, provide consumers with reasons for buying a brand or product (Henderson et al. 1998), and extant literature has linked favorable perceptions of brand images and attitudes to positive purchase intentions (Baksi and Panda 2018; Kudeshia and Kumar 2017).

A unique brand positioning is critical for brands, particularly in the hospitality sector, and can offer multiple benefits to the firm such as higher occupancy, repeat visits, increased service patronage, and even relative economic resiliency during a down industry cycle (Hu and Trivedi 2020).

Integrated Marketing Communications (IMC) refers to the combination of marketing activities designed to work in tandem with each other to create a specific brand image and identity (Kotler and Armstrong 2020). Today, traditional marketing activities and the marketing mix are both helped and hindered by the prevalence of social media (Kaur and Kumar 2021). Consumers often use social media platforms to weigh in on whether they believe a company is following through on its customer promise. At the same time, customers are also quick to showcase brands they believe fail to deliver on their promise to consumers.

eWOM and other forms of UGC have become vital pieces of IMC and marketing mix offerings of brands. The proliferation of online reviews has created an environment where the future survival of brands is dependent on how reliable a company is in delivering a compelling brand promise (Azate et al. 2022; Balducci and Marinova 2018; Kübler et al. 2019). Consumers seem vested in the notion that it is part of their responsibility as a brand user to educate other potential users about the sincerity and authenticity of the brand promise and are using their voice to essentially co-create brand messaging along corporate entities (Veloutsou and Delgado-Ballester 2018).

As consumers become more invested emotionally and financially with brands, their desire to co-create brand identities increases and brands are also seeing the value in this co-creation process (Azate et al. 2022). Plumeyer et al. (2017) argue that it is necessary to examine the hotel brand positioning from a consumer's perspective and in doing so, the performance of various competing hotels must also be considered. This paper examines the connections between corporate brand associations (via their websites) and consumer brand associations (via online reviews) to explore the congruency between these two elements, as well as how these variations can impact a brand's competitiveness in the marketplace.

### **The Link between Customer Priorities and Marketing Strategy**

In an excerpt from a 2022 McKinsey podcast, a McKinsey Senior expert Chauncey Holder said it best "If you're a consumer and your choice is to either put more weight on a signal that the marketer is giving you or more weight on the signals that actual consumers who are using the products are giving you, well, which one do we think most consumers will eventually default to? And we are absolutely seeing that" (p. 2 Fedewa and Holder 2022). Online reviews have now completely changed the game. According to Fedewa in today's marketplace, it's purely a matter of "ratings and reviews". (p. 2 Fedewa and Holder 2022).

In a hyper-competitive, post-pandemic era, Holder and Fedewa make the case that the most successful corporations will be the ones that actively solicit reviews for their products and services and then are very responsive to said reviews (Fedewa and Holder 2022). We know from past research that businesses that are responsive to reviews earn at least 35% more revenue than those that are not (Womply Research 2018). These statistics and others have demonstrated that the market has evolved from a producer-driven market to a buyer-driven one, making it critical to use customer feedback when developing corporate marketing and operational activities (Kim and Kim 2022).

In this study, we examine the positioning offered by 15 hotels in three different types of differentiations: luxury city hotels, all-inclusive beach resorts, and eco-tourism hotels. We argue that a luxury city hotel should have a different positioning to that of an all-inclusive beach hotel, and both should in fact have a different and differentiated positioning from that of an eco-tourism hotel. Content analysis and word searches are used to establish distinct branding in each of these categories and to differentiate them from the other categories. Moreover, each category of hotels should be distinct from other categories. That is, a luxury city hotel is distinct in its style, character, and physical product from an eco-tourism hotel or an all-inclusive beach resort and vice versa.

We make the case that in addition to the hotels themselves having unique corporate branding from each other, given the unique nature of each of these groups,

visitors should also use different and distinctive language when describing each category of hotel and there should be limited overlap between the various categories. We are also investigating whether distinctive positioning is being co-created by hotel guests not only across categories but also within categories. That is, are online reviewers offering distinctive brand positionings for these hotels that are 1. Unique and distinct across categories? (i.e. a luxury city hotel is different from a luxury eco-resort). 2. Are these reviews also distinctive within groups? (i.e. online reviews use distinctive language when discussing one type of eco-resort versus another type of eco-resort) Lastly, will online reviews exhibit congruency with the corporate branding and positioning offered by individual hotels, and will these reviews reflect the positioning, style, and character proposed by the brand in their various marketing mix and marketing communications available to the consumer? (i.e. will UGC mirror the corporate brand positioning offered by individual hotels).

### **Sentiment Analysis**

Extant literature has recognized the value of greater exploration of narratives, attitudes, and brand associations present in eWOM texts (Azate et al. 2022; Heng et al. 2018; Hu and Trivedi 2020). These researchers have also argued that there are several limitations of past research that has used survey data as their primary data source for brand positioning, citing issues like small sample sizes and information selectivity bias (Hu and Trivedi 2020; Azate et al. 2022). Instead, the literature has made a case for the use of sentiment text analysis and text mining of online reviews when studying brand image and brand positioning (Azate et al. 2022). This technique allows researchers to “extract useful and meaningful information from the unstructured text” (p. 1 Azate et al. 2022).

Kim and Kim (2022) suggest that using UGC to inform operational priorities and marketing messaging is an example of a company’s ability to extract business value from social media data. They conducted a study on hotel reviews and found that 55 words were typically used to describe customer satisfaction levels for hotels. These words were divided into four main factors- service, destination, the physical environment, and trip purpose (Kim and Kim 2022). This study mirrors the work of Kim and Kim (2022) and others (e.g. Azate et al. 2022; Heng et al. 2018; Hu and Trivedi 2020) who examine hotel reviews through text analysis to understand how the language used in these reviews have echoed in corporate messaging and advertising. Additionally, the study builds on previous work by using sentiment analysis to examine whether there is a commonality in how customer reviews describe hotels in different sectors and whether UGC is fairly common across hotel categories and brand differentiations.

Text mining of online reviews and other UGC is typically classified into two methods, namely, machine learning and lexicon-based methods (Azate et al. 2022; Kübler et al. 2019). Machine learning algorithms often require a high level of skilled expertise

and computational skills. Alternatively, lexicon-based (LBA) methods, which rely on established dictionaries of words, provide a simpler method for analyzing the text of online reviews. Recent developments and advances in machine learning and natural language processing have led to increased attention to sentiment analysis of hotels' online reviews.

The research using text analysis and machine learning methodologies is quite extensive. Krawczyk and Xiang (2016) used online reviews to create a perceptual map from the most frequent terms used, finding that online reviews can be used to represent the level of differentiation between hotel brands. Khorsand et al. (2020) used supervised learning methods to predict future reviewers' rates on a hotel based on their profile information and the hotel's amenities. Padma and Ahn (2020) used content analysis to find the key attributes of luxury hotels in Malaysia and Liang et al. (2019) examined the determinants of the helpfulness of reviews by a comprehensive framework.

Sentiment analysis has been used for different purposes such as review helpfulness prediction and review summarization generation. In other studies sentiment analysis is used to analyse the polarity of online reviews. For example, Shi and Li (2011) proposed a supervised machine-learning approach based on a uni-gram feature and TF-IDF for the polarity classification of reviews. Ray et al. (2021) developed an application of BERT (Bidirectional Encoder Representations from Transformers) to predict the sentiment polarities of each review, including positive, negative, and neutral. Zhang et al (2021) used an unsupervised learning method for aspect-level sentiment analysis to measure customer preference for hotel services.

## **Methodology**

### **Pre-test**

Our pre-test was conducted with 80 college students at a small northwestern university in the United States. It was used to establish the destinations we were going to examine for the main study, as well as the review site we were going to utilize for customer reviews. In the pre-test we asked students to identify the types of vacations they would go on, if they could go on any type of vacation. The findings led us to pick the top three vacation types for the main study, as 91% of respondents chose a beach vacation as one of their top 3 choices of vacations, 86.2% of respondents chose a big city sightseeing as one of their top 3 vacations choices, and 82.5% chose eco/nature vacations as one of their top 3 choices.

We also asked students to name the site they most often frequented to read and post reviews. Yelp and Trip Advisor were listed as the top two sites for reading and posting reviews. Finally, the last piece of information we explored in the pre-test was the type of accommodations students would use when they went on a vacation to ensure

hotels were still a popular option with customers given the multiple accommodation options available in the marketplace today. Respondents listed hotels as number 1, Airbnb as number 2, and a hostel/motel as the third option. Based on the pretest findings, we extracted consumer reviews from TripAdvisor, which is one of the largest online review communities for travel consumers. We evaluated the online peer reviews of hotels in three different location categories: luxury big-city hotels, high-end beach resorts, and eco-tourism resorts. To create a baseline for a particular segment, we chose five hotels in each of the categories.

In deciding what we wanted to use as each of our destinations for the three identified categories, we turned to practitioner press articles. The hotels were chosen based on data from Conde Nast Travel, US News, Forbes, TripAdvisor.com, and Tripping.com. According to Forbes.com in an article with data from Statista, the top three cities in the world for luxury hotels are London, Dubai, and New York (McCarthy 2018). However, New York has more visitors annually than the other two, so we ultimately chose New York as our location of choice for luxury hotels. For the eco-tourism destination, we chose Costa Rica as it is always listed as either number 1 or in the top 3 for the best eco-tourism destination across several popular travel publications. Regarding the all-inclusive beach resort destination, we looked to the Caribbean for a location as the concept of an all-inclusive beach resort originated there. Each list from popular travel sites for top all-inclusive beach resorts that we reviewed heavily featured Jamaican hotels. As a result, Jamaica was chosen based on the presence of many highly-ranked all-inclusive resorts on the island. The hotels selected from all three categories were similar in terms of popularity and cost. Table 1 lists the hotels along with the number of reviews that were used in this study.

Table 1: List of hotels and number of reviews for each

Hotel Category	Hotel Name	Number of reviews
Eco-tourism resorts Location: Costa Rica	Finca Rosa Blanca Coffee Plantation Resort	696
	Lapa Rios Lodge: Osa Peninsula lodge	635
	Luna Lodge Eco Resort	336
	Hotel Punta Islita	1018
	Pacuare Lodge Costa Rica	575
All-inclusive beach resorts Location: Jamaica	Jamaica Inn	1370
	Sandals Royal Plantation Beach and Villa Golf Resort	2649
	Iberostar Grand Hotel Rose Hall	6564
	The Caves	694

	Grand Palladium Lady Hamilton Resort and Spa	5176
Luxury big city hotels Location: NYC	The Beekman	714
	The Chatwal	1121
	The Lowell	325
	The Quin	2890
	The St. Regis	816

### Data Cleaning Process

Our research process, (as shown in Figure 1) can be divided into different principal steps: hotel review collection, review preprocessing, domain specific word selection and word aspect association calculation. First, reviews were collected from TripAdvisor.com for the specified hotels. The reviews were then preprocessed by removing unnecessary information. Next, a set of words were selected for each hotel category. For this step, vision, and mission statements (where available), along with the contents of the homepage were analyzed to identify how each hotel markets and brands itself. Table 2 lists the domain-specific words for each category:

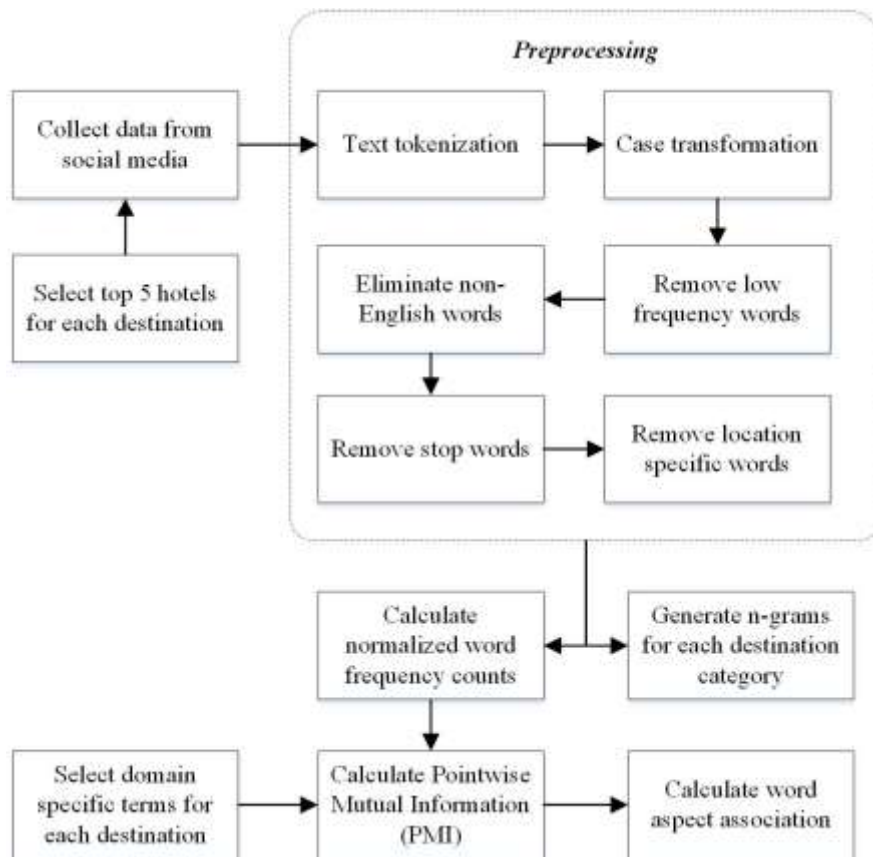


Figure 1: Research Process



Table 2: Selected words for each domain

Destination	Top 3 domain-specific terms
Eco-tourism resorts	Sustain, Solar, Recycle
High-end beach resorts	Escape, Relax, Getaway
Luxury big-city hotels	Classic, Luxury, Location

Finally, n-grams were generated, and pointwise mutual information was calculated for each term to calculate the word aspect ratio.

### Review Preprocessing and N-gram Generation

A set of pre-processing steps were used on the reviews. For example, an original review as it appeared in TripAdvisor:

“We had a wonderful time relaxing and enjoying all the offerings of the hotel. Our deluxe suite was perfect and the view overlooking the forest to the sea breathtaking. The staff was kind, knowledgeable and eager to assist. We will certainly be back!”

And the review after the pre-processing steps:

“Wonderful time relaxing enjoying offerings hotel deluxe suite perfect view overlooking forest sea breathtaking staff kind knowledgeable eager assist certainly”

The N-gram frequency technique is an ideal approach for text coming from noisy sources (Cavnar and Trekel, 1994). Based on Zipf’s laws, if we compare documents from the same category they should have similar n-gram frequency distribution (Cavnar and Trekel, 1994). For each destination category, we generated a set of n-gram frequency profiles to represent each destination. N-gram based similarity measures are used to highlight the voice of customer by detecting the highest frequency phrases and words in the reviews. Table 3 lists the top 2-gram words for each destination.

Table 3: Top ten 2-grams for each destination category

Destination	Top 2-gram words
Eco-tourism resorts	Highly recommend Coffee plantation Coffee tour Howler monkeys Plunge pool Infinity pool Rain forest Horseback riding Beach club White water

High-end beach resorts	Food great Front desk Pool area Surf turf Ocean view Room service Highly recommend Top notch Butler service Star friends
Luxury big city hotels	Central Park Great location Highly recommend Staff friendly Front desk Times square Front desk Room service Hotel staff Friendly helpful

The results show that the focus of the reviews is mainly on the amenities rather than how the websites position themselves. However, to compare frequency distributions across different corpora, we need to normalize the frequency counts. This is due to the fact that our documents have different sizes and normalizing them will give a better representation of each frequency count.

$$\text{normalized frequency count} = \frac{\text{frequency of word in corpus}}{\text{corpus size}}$$

## Analysis and Results

In this study we have analyzed the data from different aspects to understand the differences between customer reviews and hotel brand positioning. We conducted the following analyses to better understand language differences within and across categories.

- Calculate and compare the word frequency of domain-specific words (listed in Table 2) in the three hotel categories.
- Calculate and compare the word frequency of general terms in hospitality such as words related to food, room, service, etc.
- Calculate and compare the PMI to specify the association of each word with the hotel category.

- Calculate a final score for the word-aspect association that compares the PMI of a word in one domain with the PMI of that word in other domains.
- Generate a supervised machine learning model to predict the hotel category based on a set of features generated from each review. Using this model, we wanted to know how similar or distinct the reviews of hotels are from each other and how likely it is to specify the hotel category given the review.

### Word Frequency Analysis

Domain-specific words (table 2) were used in the first stage of analysis to see if there is a strong positive relationship between brand positioning as defined by an individual service provider and brand positioning as defined by a customer in an online review. In other words, we wanted to see how often the words that hotels used on their website to position themselves have been used in the reviews. For this purpose, we compared the normalized frequency of these words in all the categories.

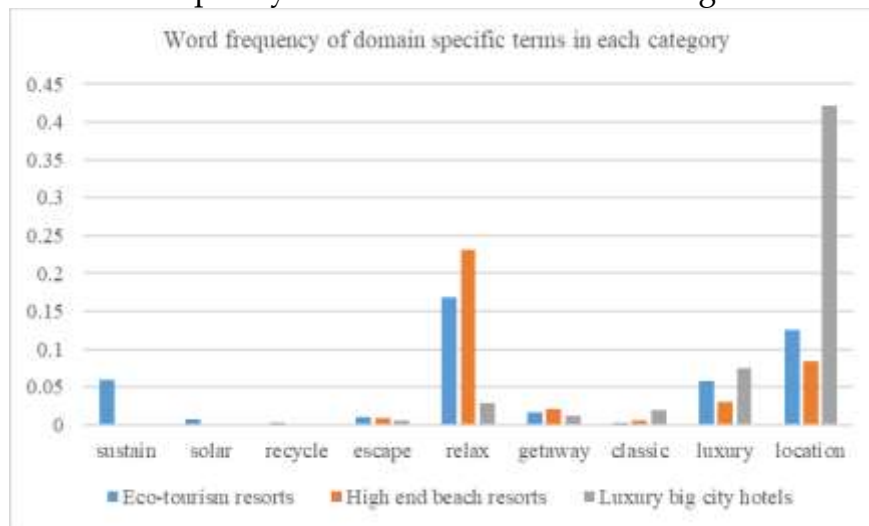


Figure 2: Word frequency comparison of domain specific terms

The results shown in Figure 2 suggests that although the domain specific terms are being referred most in their reviews, overall, their frequency is very low. The only exception was the luxury big city hotels in which both the branding and customer reviews focused on their location. The concept of 'location' and this word have been mentioned in comments as well as the website extensively. Therefore, in the next stage, we compared the frequency of these words with a set of general terms in the hospitality industry to see how much reviewers focus on attributes related to a brand positioning vs the overall characteristics of a stay at a hotel. Figure 3 compares the frequency of words in each category. These figures show that on average the words related to a hotel's brand positioning have been mentioned the least compared to common words used in the hospitality industry. Customers tend to talk more about their experience in terms of service, food, room, and staff.

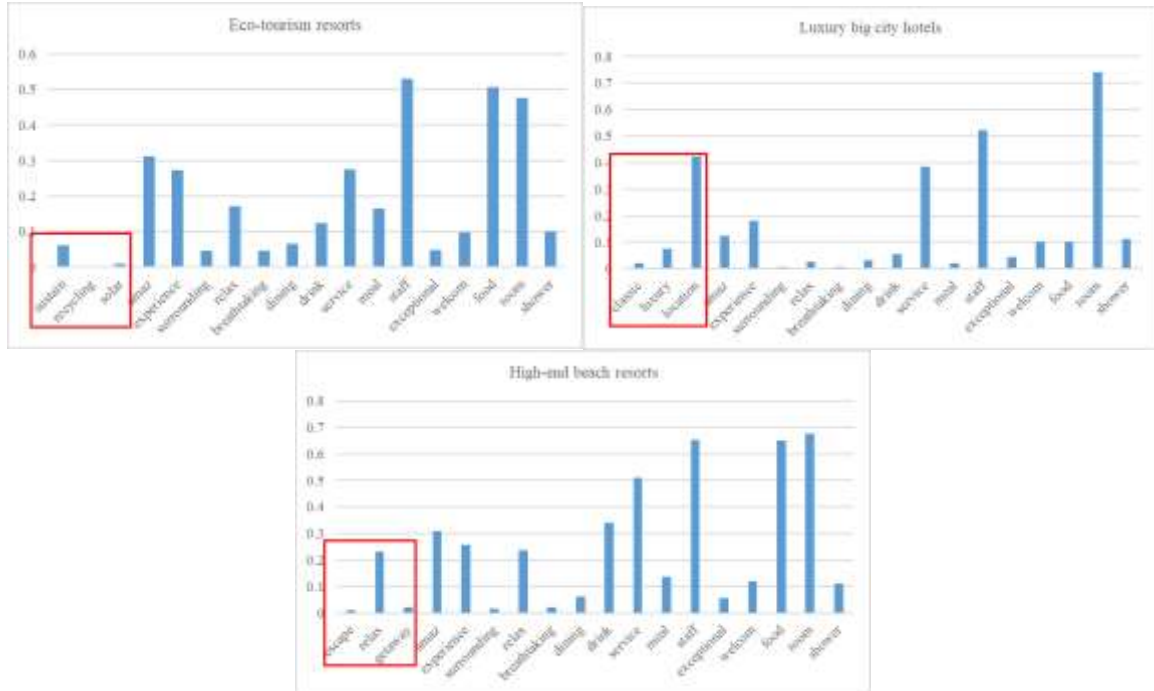


Figure 3: Word count distribution for each domain

Figure 4 compares the word occurrence of the general terms in hotel industry for all the locations. The findings suggest that in online reviews, consumers use very similar terminology to discuss all hotels within a particular category. It also supports that there is a distinct difference in the terminology consumers use to discuss the hotels in each of the three hotel categories. However, on the contrary, despite the destination and type of hotel, customers care more about concepts such as ‘service’, ‘room’ and ‘staff’.

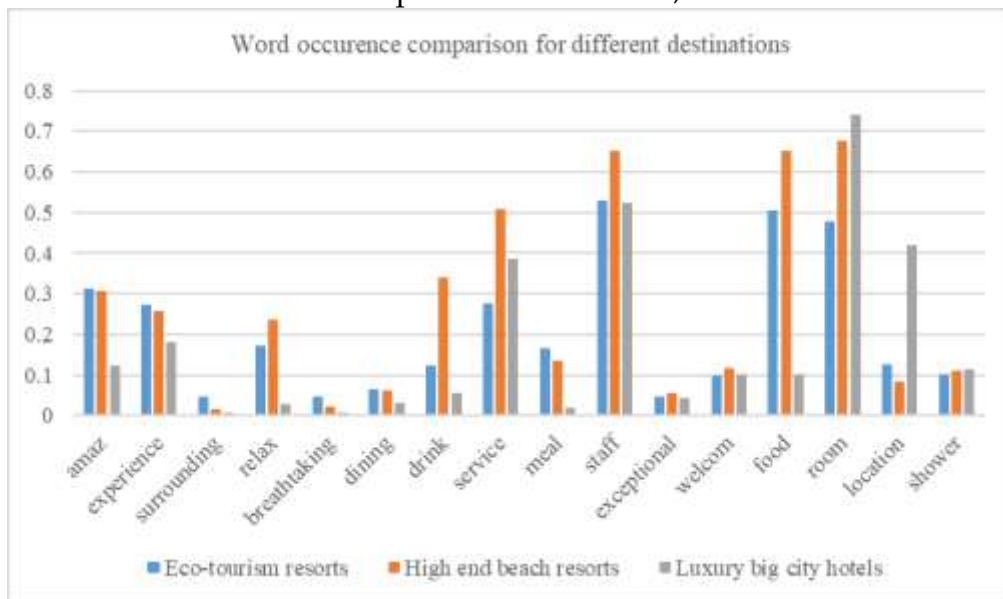


Figure 4: Word count distribution for all the reviews

### Word-Aspect Association

To compare the association of each term with destination we generated scores based on Pointwise Mutual Information (PMI). This is done to further analyze the association of each word with the hotel category, we calculated the PMI for our top words in each category.

$$PMI(w, dom) = \log_2 \frac{freq(w, dom) \times N}{freq(w) \times freq(dom)}$$

Where  $freq(w, dom)$  is the number of times a term  $w$  occurs in our domain-specific reviews,  $freq(w)$  is the total frequency of the term in all the reviews, and  $freq(dom)$  is the total number of terms in our domain and  $N$  is the total of terms in all the reviews. A higher PMI indicates a greater association of that word with the domain compared to the others. Since PMI is known to be a poor estimator of association for low-frequency terms, we only selected high-frequency words. The PMI of general aspects of the hotel industry is shown in Table 4 for each category. The top 3 PMI for each group is highlighted to show the focus of the reviewers in each category.

Table 4: Score for different terms at the domains

	Eco-Tourism	High-end Beach	Luxury Big City
PMI(staff)	0.34	0.26	0.53
PMI(service)	0.23	0.28	0.53
PMI(food)	0.38	0.32 *	0.12
PMI(room)	0.27	0.25	0.69
PMI(location)	0.29	0.12	1.56 *
PMI(experience)	0.43	0.26	0.46
PMI(amaz)	0.45	0.28	0.29
PMI(drink)	0.19	0.34 *	0.14
PMI(sustain)	2.86 *	0.01	0.03
PMI(solar)	2.58 *	0.05	-
PMI(recycle)	1.69 *	0.17	-
PMI(escape)	0.51	0.26	0.38
PMI(relax)	0.37	0.32 *	0.10
PMI(getaway)	0.36	0.28 *	0.39
PMI(classic)	0.10	0.18	1.36 *
PMI(luxury)	0.50	0.17	1.05 *
PMI(timeless)	-	0.27	0.76

To calculate the word-aspect association, we calculated a score that compares the PMI of a word in one domain with the PMI of that word in other domains.

$$Score(w, dom) = PMI(w, dom) - PMI(w, -dom)$$

Table 5 shows the score of words in domains. The higher the score, the greater the word-aspect association between that word and domain.

Table 5: Score for different terms at the domains

	Eco-Tourism	High-end Beach	Luxury Big City
Score(staff)	0.04	-0.18	0.26
Score (service)	-0.07	-0.11	0.26
Score (food)	0.09	0.07	-0.20
Score (room)	-0.03	-0.24	0.44
Score (location)	-0.01	-0.83	1.41
Score (experience)	0.15	-0.19	0.18
Score (drink)	-0.12	0.17	-0.18
Score(sustain)	2.84	-1.35	-0.31
Score (solar)	2.53	-1.16	-0.34
Score (recycle)	1.55	-0.63	-0.34
Score (escape)	0.23	-0.18	0.09
Score (relax)	0.07	0.10	-0.23
Score (getaway)	0.07	-0.10	0.10
Score (classic)	-0.22	-0.59	1.19
Score (luxury)	0.22	-0.62	0.84
Score (timeless)	-0.33	-0.13	0.52

The results show that the word association of our domain-specific words is the highest in each category. It can be concluded that customers tend to focus on general aspect characteristics of hotels no matter the location. However, the domain-specific words are mentioned the highest in the relative hotel category compared to others. In the next section, we build a machine learning model that would use a set of features to classify the review into one of the three hotel categories. The purpose of this model is to see if the reviews for each hotel category are distinct from others or not.

### Machine Learning Model

In this section, a supervised machine learning model was developed to predict the likelihood of detecting the hotel category based on the review. The focus of this section is training supervised learning text classification models to see whether it's possible to predict the hotel category in the review that was written. This will help identify how different or similar the reviews are. As mentioned, the hotels are in the same category as

price and quality. If the model can predict the correct hotel category that would suggest that the customers’ reviews are tailored for each specific hotel category and not just on the basics of room, service, staff, food, etc.

For this purpose, a set of 39 features were created for each review. The features consist of the following groups:

- 25 features were generated that would indicate the existence of general hospitality domain words. These keywords focus on the main aspects of the hotel such as room, service, food, and staff, ....
- 9 features that count the word frequency of domain-specific words. We used the domain-specific words listed in Table 1.
- 1 feature that would capture the count of exclamation marks.
- 2 features that would capture the count of adjectives and adverbs
- 1 feature that would count the length of the review
- 1 feature to identify the polarity of the review as positive, negative, or neutral

We used different classification methods such as a Decision Tree, Random Forest, LibSVM, K-Nearest Neighbor, and Naïve Bayes. The confusion matrix for our best model (Random Forest) is shown in Table 6.

Table 6: Classification confusion matrix

	Costa Rica	Jamaica	NYC	Precision
Costa Rica	1037	48	31	92.92%
Jamaica	1233	14609	495	89.42%
NYC	611	1796	5340	68.93%
Recall	35.99%	88.79%	91.03%	

The results show that NYC reviews had the highest accuracy of getting classified in the correct class, with Jamaica coming next, whereas the Costa Rica reviews had the lowest. This indicates that NYC reviews are very distinct compared to others. However, the majority of the Costa Rica reviews got classified as Jamaica, and this shows that customers’ perspective of their stay in an Eco-tourism hotel is very similar to their perspective of high-end beach resorts.

## **Discussion**

There has been little research on the impact of online reviews on brand positioning and consumer buying behavior (Farzin and Fattahi 2018; Tran et al. 2022). This study contributes to that gap in the literature by examining the relationship between the brand messaging of both consumers and corporate entities. Our goal for this study was three-fold. First, we explored whether online reviews were centered on marketing dimensions put forward by the hotel in its positioning and marketing efforts or whether these reviews

were distinct from brand messaging in terms of what was discussed. Second, we sought to examine if the online reviews of hotels within any one vacation category were distinctive from other hotels in that category. Finally, we investigated how these online reviews in any one category of hotels were distinctive from online reviews of hotels in another category. To accomplish these goals, we examined unique branding in the categories of character, style, and physical product of the hotel offerings in three vacation categories, namely, all-inclusive beach resorts, eco-tourism hotels, and big city luxury hotels.

### **Theoretical Implications**

Extant Literature tells us that online customer reviews matter and they seem to have a major effect on the purchasing decision of customers (Ye et al. 2011; Farzin and Fattahi 2018; Filieri and McLeay 2014; Chen and Xie, 2008; Nguyen et al. 2020; Tran and Vu 2019; Tran et al. 2022). New and potential customers care about the past experiences of previous customers because they believe these perspectives can inform their future experiences with said brands (Austen 2018; Lee et al. 2008; Moriuchi 2016; Moriuchi 2018). Potential customers read online reviews as an avenue to check whether the marketing communication offered by the company on their website can be trusted (Alton 2017; Mackenzie 2012; Farzin and Fattahi 2018; Tran et al. 2022).

We argued that based on examined website messaging, each hotel in the identified categories had a different character, brand, style, and positioning for their hotels. Given the distinctive nature of each of these groups, the expectation was that visitors would use different and distinct language when describing each category of hotel and there should be limited overlap between the various categories. Additionally, given the pervasive nature of marketing messaging, we posited that both positive and negative online reviews would be reflective of the positioning, style, and character proposed by the brand in their various marketing mix and marketing communications available to the consumer. Simply put, online reviews would mirror the brand dimensions identified by the brand itself and the brand dimensions discussed in reviews of an all-inclusive beach resort should be distinctively different from those discussed in online reviews of an eco-tourism resort. Similarly, the reviews for beach and eco-tourism resorts should be uniquely different from the online reviews of a luxury big-city hotel.

Our findings suggest that there is a distinct difference between how hotels position themselves on their websites and what customers talk about in their online reviews. Despite visiting varying destinations and types of hotels, customers focused on concepts such as 'service', 'room', and 'staff' across destinations and individual hotels. Big city luxury hotels were the only contradiction to this trend, as these hotels tended to brand based on their city locations and customers echoed that in their reviews.



This finding was also supported by our machine-learning algorithm. For example, eco-tourism resorts focus on demonstrating how their hotels embrace sustainable operations. However, the online reviews for eco-hotels focused primarily on staff, services, food, and room type. Where high-end beach resorts branded themselves as places that offered opportunities for escape and relaxation, online reviewers instead mainly discussed the staff, service, food, and room options. Moreover, consumers did not experience hotels solely based on the proposed brand style and character put forward by the hotel. Instead, they focused on whatever they and other past guests deemed important, regardless of if that was a part of the established corporate positioning and branding.

Essentially, users are creating new brand knowledge. Despite the efforts of service providers to dictate how service encounters should be experienced and conceptualized, instead, experiences were occurring through a lens created by reviewers and not corporate branding. Based on the study findings we proposed a theoretical model presented in Figure 5. The model suggests that service providers market and position themselves in particular ways and operationalize these positioning through traditional and non-traditional marketing tactics. Potential guests then process these marketing tactics and either buy into or reject these positions. This will then lead to a service encounter or not. Once a service encounter occurs, through their experiences at that location, consumers will either confirm or reject these positions. At the end of a service encounter, consumers will offer an online summation of their experiences via UGC in the form of a review.

These reviews encapsulate perceptions on which parts of the brand's marketing efforts can be believed, the parts of the positioning that should be rejected, and the nuances of the experience that were either never mentioned or considered in the brand's marketing efforts. In essence, through their actual experiences, patrons will offer an online review that can complement, add to, reject, or accept existing corporate positionings. Potential guests, then in turn mix these reviews with their own ideas on which of the marketing efforts are believable or credible and thereby create a new expectation that will be contradicted or confirmed by their actual experience. They will also offer a review based on these new dimensions so the cycle continues. We refer to this model as the Theory of User Generated Content (UGC) Influence. The theory highlights the mediating nature of online reviews to nullify, modify, or support a firm's marketing efforts. It also highlights the fact that in today's marketplace, consumption experiences are heavily influenced not only by the user's immediate experiences but experiences that were anticipated due to the influence of past UGC, which in turn will also serve to influence new UGC.

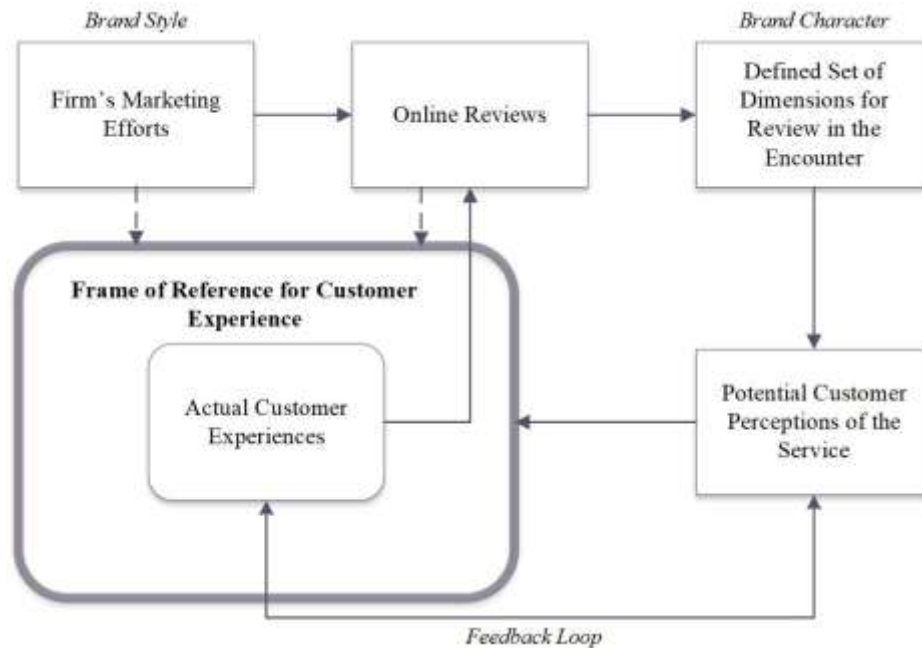


Figure 5: Theory of user generated content influence

### Practical Implications

Extant literature purports that brands tend to position themselves in very specific ways, with their marketing communications typically reflecting and supporting these chosen associations (Schmitt 1999). Based on an analysis of the messaging used by these brands on their respective websites, the hotel brands chosen in our study continue to promote and position themselves based on specific talking points and characteristics. Each brand showcased itself in a distinctive and unique way from its counterparts. However, whilst each of these individual hotels/service providers maintains their respective distinctive branding on their websites, a slightly different focus is presented in online reviews from guests who visited these properties.

In our model, we tried to predict the hotel category based on the review itself. The results show that reviews for big city luxury hotels would be classified correctly with high accuracy (91%), whereas the model demonstrated little to no distinction between eco-tourism hotels and high-end beach resorts. Most of the Costa Rica reviews got classified as reviews for Jamaican hotels, with Costa Rican reviews only correctly predicted in 36% of the cases. This illustrates that the language used by customers to describe their stay at an eco-tourism hotel is very similar to the language used by customers to describe their stay at high-end beach resorts.

In the 25000+ reviews that were evaluated, it seems that there is a low level of synergy between how hotels position themselves and what in turn customer online reviews highlight about these properties. Instead, most of the reviews tend to be

consistent across almost all hotel categories. Dimensions such as experiences, service, drinking, food, staff, and a place to relax seem to capture the full attention of past consumers, thereby influencing the expectations of new and potential guests. This was an interesting finding. What it is saying to us is that there is a significant missed opportunity for Hoteliers. Hotel management is not taking advantage of the opportunity to create synergy between what they are saying about their properties versus what previous guests are saying about their properties.

The practitioner press and academic literature alike are filled with articles outlining how little consumers trust traditional marketing messaging and how much they believe online reviews (e.g. Hawkins 2021; Gavilan et al. 2018). If there is such clarity around a lack of trust for corporate messaging, then why not utilize the messages that are coming out of reviews to craft more believable corporate branding? The findings from this study suggest that marketers who utilize themes discussed in reviews and echo the positive assessments communicated online in UGC stand to benefit from a higher likelihood that these messages are more believable because they echo 'independent' online content. Extant literature says that online reviews either confirm or disconfirm corporate messaging (Chatterjee 2001; Hu et al. 2017; Lee et al. 2008; Moriuchi 2016; 2018; Tran et al. 2022). So why not design corporate messaging that mirrors existing reviews and as such would offer confirmation of UGC? It tends to reason that this approach could yield some positive outcomes for hoteliers.

Additionally, there is an opportunity for marketers to even go beyond mere mirroring and have consumers dictate what they should highlight in their campaigns. Maybe, the fact that this eco-lodge has a sustainable A+ rating is hidden in the fine print. Instead, the website focuses on excellent service, pristine surroundings, extraordinary food/drinks, and the luxury of the rooms because that's what past guests are raving about on Hotels.com and Trip Advisor. Maybe instead of picking a differentiation strategy based on what management thinks a hotel property is good at and what they believe customers value. Instead, management could create differentiation strategies based on what actual guests think the hotel is good at and what actual guests value enough to communicate about the hotel in a review. This potentially will have more payoff in revenue generation and hotel occupancy rates in the long run as the hotel that focuses their messaging on what consumers say they are good at are constantly winning on the confirmation spectrum and ultimately are coming across as more authentic.

## **Conclusion**

It can be argued that customers might choose a brand based on its current positioning, style, and vision/mission, but that is often just the beginning of the process. Once potential consumers select a service provider, the next step is almost inevitably a visit to a review depository for that brand, either on the brand's own site or via a third party. Recent studies indicate that 93% of consumers visit an online review site before

making a purchase (Kaemingk 2020). Our findings suggest a disconnect between how the hotels position themselves on their websites and what customers talk about in the online reviews. Regardless of the destination and type of hotel, customers care more about concepts such as 'service', 'room', and 'staff'. Big city luxury hotels were the only contradiction as they focused on their location and customers echoed that in their reviews.

Brands need to be aware of both the major dimensions that are typically reviewed and how much UGC support, complements, or contradicts their ongoing marketing efforts. If these nuances are ignored continuously, at a minimal level marketing professionals run the risk of losing out on opportunities to brand themselves in meaningful ways. However, there is also the significant risk for management of being out of touch with the components of a visit consumers really care about. In the end, there seems to be a remarkable feedback loop between what consumers read in terms of an online review and subsequently what they choose to discuss in their post-visit reviews, often downplaying the importance and influence of corporate branding. Managers have an opportunity to use these reviews as the basis for how they position their hotels. Ultimately, hotels that focus their branding on what consumers are raving about may have more success than the properties that choose to go in a different direction than existing UGC.

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# Validation of Self-Determination Scale: An Experiential Consumption Perspective

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## **Abstract**

*Purpose – Previous studies have not underscored the importance of employing a self-determination scale in the experiential marketing and consumption domain. It is thus valuable to validate such a scale to encompass the essence of the concept of self-determination and capture all the relevant conceptual meanings for the scale to be examined in a broad nomological experiential consumption framework.*

*Method – The current study follows a typical scale validation procedure. Studies 1 and 2 conduct the initial exploratory factor analysis, test model fit, and examine the convergent as well as discriminant validity of the adapted self-determination scale. Study 3 tests the nomological validity of self-determination in an experiential consumption context and establishes that self-determination mediates the relationship between fear of missing out (FoMO) and purchase intentions regarding experiential products.*

*Findings – The scale of self-determination regarding experiential consumption has been validated, and its applicability can be extended to various types of experiential products. Moreover, self-determination, particularly the autonomy and competence dimensions, mediates the relationship between FoMO and purchase intentions regarding experiential products.*

*Limitations – The average age of the participants across the three studies is 24.28 years old, which represents young generations, such as millennials, and Generation Z. Future studies can test the scale among older generations, such as Generation X and baby boomers. Another limitation is that the causal role in this relationship remains unclear. Future studies should employ an experimental design to examine the antecedent role of FoMO in relation to self-determination.*

*Implications – Managers should design experiential products that can better fulfill individuals' basic psychological needs in terms of how experiences can constructively produce feelings of fulfillment of one's personal potential and self-actualization. Marketers should also seek a good fit between consumers' experiences with products and consumers' specific types of psychological needs – specifically connected to autonomy, competence, and*

*relatedness – and the fulfillment of personal goals. Based on the study results, companies have social responsibilities regarding shaping experiences that can ameliorate positive emotions. It is important for marketers to promote activities that are related to personal fulfillment to relieve individuals' feelings of FoMO, such as experiences or activities that involve feelings related to one's purpose or the meaning of life; positive emotions; and personal goals related to growth, uniqueness, self-enhancement, and self-care.*

*Originality – The current paper provides a new understanding of self-determination in the context of experiential consumption through the validation of an adapted self-determination scale. The validated scale can be applied in a variety of experiential contexts to assist in the understanding of new schemes of experience production and consumption in the modern era, such as digital experiences, tourism and hospitality, sensory marketing, and collaborative buying and sharing. The contribution of the current study is twofold. First, the self-determination scale that is formed by the three dimensions of self-determination motives has been validated across three studies in terms of model fit along with convergent, discriminant, and nomological validity. Second, this study demonstrates an example of an assessment of the association between self-determination and other constructs, such as FoMO and purchase intentions regarding experiential products, in a nomological framework. The results complement previous findings that FoMO is related to low levels of fundamental need satisfaction and that self-determination can relieve the feeling of FoMO.*

**Keywords:** self-determination, experiential context, validity, experiential products, FoMO

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## Introduction

Self-determination theory is a widely employed theoretical model in various research contexts, such as marketing, organizational behavior, health psychology, education, and physiology (e.g., Wilson et al., 2008; Niemiec & Ryan, 2009; Gagne & Deci, 2005; Dholakia, 2006). In recent years, the trend of the experience economy and perceptions of experiences in consumption contexts have propelled a wave of research into the psychological mechanisms (e.g., self-determination) underlying the experiential consumption context in which individuals seek intrinsic motivations and general psychological well-being. For example, studies on a recently widely observed phenomenon of “fear of missing out” (FoMO) have utilized self-concept to describe the context in which individuals observe a gap between the self and others or their own expected psychological state and fear that they cannot consume the wonderful experiences that others are consuming (e.g., Zhang et al., 2020). Alternatively,

individuals' cravings for leisure and experiential consumption reflect a trend of a shift in attention away from the consumption of physical goods to that of experiences instead (Scott et al., 2013). Consumers are considering not only the functional or practical benefits of products, services, or experiences but also how these things relate to self-identity and self-determination (e.g., Schembri et al., 2010). Generation Z, for example, appears to be concerned with how individuals can present themselves and realize optimal self-image through consuming digital experiences (Bassiouni et al., 2014) and tourism experiences (Robinson & Schanzel, 2019).

However, previous studies have not underscored the importance of employing a self-determination scale in the experiential marketing and consumption domain as most of the previous studies have emphasized empirically investigating the effect of the construct in a grand nomological framework based on the relationship between self-determination and outcome constructs. It is, however, valuable to validate such a scale to capture the essence of the construct and encompass all the relevant conceptual meanings so that the scale can be further examined in relation to consumers' purchase intentions regarding experiential products. To achieve this research goal, the present study is composed of the following three parts: the first concerns the conceptualization of the self-determination construct in the experiential consumption context in terms of how experiential consumption involves motivational drivers and how three dimensions of self-determination are integral to understanding the actual consuming process of experiential products for personal psychological gratification and well-being. The second part, which is composed of studies 1 and 2, conducts the initial exploratory factor analysis (EFA), tests model fit and examines the convergent as well as discriminant validity of the adapted self-determination scale. The third part, study 3, tests the nomological validity of self-determination in an experiential consumption context and supported the notion that self-determination mediates the relationship between FoMO and intention regarding purchasing an experience.

The contribution of the current study is twofold. First, the self-determination scale that is formed by the three dimensions of self-determination motives (autonomy, competence, and relatedness) has been validated across three studies in terms of model fit along with convergent, discriminant, and nomological validity. Particularly, the validated scale can be applied in a variety of experiential contexts to assist in the understanding of new schemes of experience production and consumption in the modern era, such as digital experiences, tourism and hospitality, sensory marketing, and collaborative buying and sharing. Secondly, as the scale implies the motivational facets of self-identity and self-enhancement in exploring experiences, this study demonstrates an example of an assessment of the association between self-determination and other constructs, such as FoMO and purchase intentions regarding experiential products, in a nomological framework. The results complement previous findings that FoMO is related to unsatisfied fundamental psychological needs (Przybylski et al., 2013) and the discrepancy between an individual's current state and expected state (Zhang et al., 2020).

## Literature Review

### Self-Concept and Experiential Consumption

Self-concept reflects how individuals perceive themselves with respect to their mental and physical characteristics (Lawrence, 2006). Self-concept is crucial to human beings because individuals carry around a mental picture of who they are, what ideals they would like to meet, how distinctive they are from others, and so on (e.g., Epstein, 1973; Oyserman et al., 2012). To enhance their perception of self, individuals are motivated to consume products that are coherent with their current or expected self and social identities (Malhotra, 1988; Tian & Belk, 2005). For example, individuals have preferences for certain brands because those brands fit into their existing beliefs regarding self-enhancement and assist consumers in developing a positive image of themselves (Graeff, 1997). Marketers, for their part, create products that have a consistently great fit with consumers' self-identity or self-image in order to satisfy those consumers (Hoyer et al., 2016). An illustrated example can be found in an individual who is motivated to purchase a luxury item as the associated luxury brand matches their personality and becomes part of their "extended self." This self-congruence or self-match is widely discussed in the previous literature (e.g., Jamal & Goode, 2001; Jacob et al., 2020; Su & Reynolds, 2017).

Furthermore, previous studies have suggested that experiences, by their distinctively personalized and hedonic nature, are more likely to be identified as ways of enhancing individuals' self-concept (e.g., Gazley & Watling, 2015; Woodruffe-Burton & Wakenshaw, 2011). Experience-related products embody intrinsically meaningful, emotional, and aesthetic values (Tsai & Wang, 2017) that can form consumers' perspectives of their identities through interactivities between experiential products and themselves (Perez & Bosque, 2015). More importantly, the experiential aspects within the product purchases and usages promote an individual's values of self-growth (Knobloch et al., 2017) as well as self-determination when the individual is integrating a concrete and memorable experience into their own identity. This process is well explained by self-determination theory, which links individuals' self-concept with their internal motivations, as discussed below.

### Role of Self-determination in Shaping Experiential Marketing

Previous studies have suggested that to realize intrinsic motivations and consumer happiness, individuals tend to seek out experiences that aim to facilitate self-determination needs (Guevarra & Howell, 2015). This point of view is underpinned by the self-determination theory proposed by Deci and Ryan (1985). Self-determination theory proposes that the basic psychological needs, competence, autonomy, and

relatedness, support an individual's optimal self-functioning as well as psychological satisfaction and growth (Deci & Ryan, 1985, 2013). As discussed before, individuals are prone to setting goals to achieve their ideal selves when they are aware of the gap between their actual selves and ideal selves (Malhotra, 1988; Tian & Belk, 2005). In this regard, the ideal self can serve as an essential goal that individuals strive to attain to maintain their optimal psychological well-being and self-functioning; and this perception is closely aligned with self-determination motives, as self-determination enables individuals to take actions toward the attainment of self-directed goals (Agran et al., 2000). Essentially, to act in a self-determining manner involves expressing one's inner thoughts, interests, preferences, and values, which constitute an individual's self-perception or identity in response to their constantly changing surroundings (e.g., Deci and Ryan 2013, Rodgers and Scott 2008). Furthermore, previous studies have argued that the self-concept consists of an amalgam of roles that include thoughts, personalities, needs, etc. (e.g., Acevedo 2018, Phau and Lo 2004), which implies that the underlying psychological needs are fundamental to the self-concept. Therefore, in order to investigate how individual self-concept relates to various psychological needs and subsequent consumption patterns, self-determination theory is employed to provide a theoretical basis for understanding. Based on self-determination theory, three psychological needs are particularly relevant for consideration: autonomy, competence, and relatedness (Deci & Ryan, 1985, 2013). Among the three psychological needs, autonomy is defined as one's capability of controlling or taking charge of one's own actions toward goals, competence refers to the active control of the performance of the task that is related to one's goal, and relatedness is a social need that links oneself with others (Deci & Ryan, 2012).

The intrinsic motivations underpinning experiential consumption led to greater satisfaction and positive emotions (e.g., Gilovich et al., 2015; Milman & Tasci, 2018). Previous studies have suggested that products or brands that individuals perceive as satisfying their autonomy, competence, and relatedness needs are associated with positive market outcomes, such as higher purchase intentions (Guevarra & Howell, 2015) and persuasion (Blair 2021). Even in an online shopping or social media environment, brands, and products can achieve positive results provided they satisfy the self-determination needs of consumers (Ki et al. 2020, Gao et al. 2018). Within the context of experiential consumption, specifically, experiences involving engagement physically and mentally provide opportunities for self-growth, especially when those experiences can satisfy individuals' self-determination needs (Buzinde, 2020). In the present study, within the experiential consumption domain, autonomy is further defined as the capability to be responsible for consuming one's own experiences, including, for example, deciding which experiences to consume, and maintaining responsibility for the progress of the experiences consumed, etc. To put it another way, experiential consumption can become a space in which individuals are in charge of the hedonic, fun, or emotional experiences of their own choice to satisfy their intrinsic autonomy needs. Competence is referred to as the capability to successfully undertake experiential consumption tasks to achieve

certain personal goals or outcomes. To further explain, competence motivates individuals to engage in challenging experiences and to persevere at them until their goals are achieved. Relatedness, in contrast, is defined as a need to be socially connected with others during the process of consuming experiences. Particularly, the experience of belonging to one's social group when engaging in experiential activities tends to be enhanced when individuals feel connected with significant others. Interestingly enough, these three fundamental psychological needs relate to the concept of relationality and optimization whereby personal and social needs contribute to an individual's sense of self and the capacity to adapt to a constantly changing environment (Ryan and Guardia 2000), and in this case, changing experiences and consumption activities related to these experiences. Consequently, the theoretical basis of the self-determination construct has been developed, and this construct as well as its three components, autonomy, competence, and relatedness, will be examined empirically in the research methodology section.

## **Research Methodology**

### **Study 1**

The purpose of Study 1 is to initially validate the self-determination scale. The scale was adapted from the three-factor self-determination scale developed by Vlachopoulos and Michailidou (2006). Because the original scale was used to determine the basic psychological needs in an exercise and health context, its validation in experiential consumption remains unknown. The adaptation of the scale was based on a close analysis of the items that the relevance of the experiential consumption context defines. Each dimension of self-determination was assured to represent the meaning and the definition of self-determination and its three aspects, as discussed in the previous section. The set of scale items in an adapted version for each dimension was then generated. Each dimension equally has four items that were rated on a seven-point Likert scale, from 1 – “strongly disagree” to 7 – “strongly agree.”

The sample included two hundred and nine American adults (104 females and 105 males; average age = 23.7 years) and was collected from a Qualtrics data panel, a provider of consumer panels in the United States. The questionnaire contains all three dimensions of the adapted scale items mentioned above. After reading the questionnaire instructions, the participants were asked to read each item statement of the scale and rate the item based on the extent to which they agree or disagree that the item describes themselves.

### **Data Analysis and Results**

The data were initially analyzed with EFA. The extraction method of principal component analysis and the Oblimin Rotation Method was selected. The EFA results are shown in Tables 1 and 2. Particularly, Table 1 shows the four items retained as the



dimension termed “autonomy,” four items retained as the dimension termed “competence,” and four items retained as the dimension termed “relatedness.” The three factors or dimensions accounted for 77.38% of the variance, as shown in Table 2. The eigenvalue of each dimension is greater than 1. The above confirms the existence of a three-dimensional dimension of the self-determination construct.

The reliability of the construct was assessed using Cronbach’s alpha. In the further analysis, Cronbach’s alpha and item-to-total correlation coefficient were reported for each item, as shown in Table 3. The Cronbach’s alpha of each factor was above .85, which indicates high reliability and internal consistency. The item-to-total correlation coefficients were calculated for all the items of each factor, and the results yielded an excellent level of internal consistency of measures for all the factors.

Table 1: Initial EFA Factor Loadings of the Three Dimensions of the Self-determination Scale in Study 1

Items	Factors			Mean	SD
	1	2	3		
<b>Self Determination - Autonomy</b>					
A1 The experiences I want to consume is highly compatible with my choices and interests	0.81			5.54	1.25
A2 I feel very strongly that the way I consume experiences fits perfectly the way I prefer to do	0.90			5.29	1.16
A3 I feel that the way I consume experiences I definitely an expression of myself	0.86			5.34	1.23
A4 I feel very strongly that I have the oppourtunity to make choices with respect to what I experiences I want to consume	0.77			5.41	1.23
<b>Self Determination - Competence</b>					
C1 I feel I have been making a huge progress towards my experiential goals		0.85		4.92	1.36
C2 I feel that I execute very effectively the experiences I want to gain to approach the goals of gaining experiences		0.87		5.05	1.32
C3 I feel that consuming experiences are activities I do very well		0.72		4.86	1.33
C4 I feel that I can manage experiential consumption to approach experiential goals		0.68		4.87	1.29
<b>Self Determination - Relatedness</b>					
R1 I feel extremely comfortable when consuming experiences with my social groups			0.90	5.17	1.40
R2 I feel that I associate wht my social groups in a very friendly way when I consume experiences			0.89	5.15	1.38
R3 I feel there are open channels of communication with my social groups when consuming experiences			0.85	5.21	1.25
R4 I feel very much at ease with my social groups when consuming experiences			0.82	5.22	1.41

Table 2: Summary of the EFA in Study 1 – Variance Explained

Component	Total	Variance (%)	Cumulative(%)
<b>Initial Eigenvalues</b>			
1	6.51	54.31	54.31
2	1.59	67.57	67.57
3	1.18	77.38	77.38
4	0.54	81.85	81.84
5	0.44	86.52	85.52
6	0.34	88.36	88.36
7	0.31	90.92	90.92
8	0.28	93.22	93.22
9	0.24	95.19	95.19
10	0.22	96.98	96.98
<b>Extraction Sums of Squared Loadings</b>			
1	6.52	54.31	54.31
2	1.59	67.57	67.57
3	1.18	77.38	77.38

Table 3: Reliability Analysis of Study 1 – Item-to-total Correlation of the Items and Cronbach’s Alpha

Items	Item-to-total Correlation	Cronbach's alpha
<b>Autonomy</b>		0.891
A1	0.862	
A2	0.897	
A3	0.871	
A4	0.844	
<b>Competence</b>		0.860
C1	0.824	
C2	0.877	
C3	0.841	
C4	0.815	
<b>Relatedness</b>		0.929
R1	0.915	
R2	0.924	
R3	0.883	
R4	0.913	

To further confirm the three-dimensional structure and test the model fit, the scale was examined using confirmatory factor analysis (CFA). The results confirmed the initial results of EFA and showed good model fit of the three-dimensional construct ( $\chi^2 = 138.454$ ; degrees of freedom [df] = 51;  $p < 0.001$ ; Tucker-Lewis index [TLI] = 0.937; comparative fit index [CFI] = 0.951; normed fit index [NFI] = 0.925; goodness of fit index [GFI] = 0.891) (Kenny, 2015).

## Study 2

The purpose of study 2 is to evaluate the convergent validity and discriminant validity of the self-determination scale. The data were again collected using a Qualtrics data panel, a provider of consumer panels in the United States. A total of one hundred and thirty-six participants (American adults; 80 females and 56 males; average age = 24.38) were included in the study. After reading the instructions of the survey, participants were asked to evaluate the self-determination scale on a seven-point Likert scale, from 1 – “strongly disagree” to 7 – “strongly agree,” as previously in study 1.

## Data Analysis and Results

To test convergent validity, the composite reliability (CR) of the whole construct as well as its three dimensions were calculated, as shown in Table 4. The results showed that a value of 0.961 for the entire construct yielded a high level of convergent validity, which is above the recommended 0.80 threshold (Fornell & Larcker, 1981). The CR value of each dimension was also above the 0.80 thresholds, which supported high convergent validity. Furthermore, a second test of convergent validity involves the calculation of average variance extracted (AVE) value. As Table 4 shows, the AVE values for the whole construct and all three dimensions are above the 0.50 threshold, which also provides evidence to support a strong convergent validity. Furthermore, the correlation results in Table 6 indicated that the construct self-determination is highly correlated to its three dimensions, autonomy (Pearson correlation coefficient = .790,  $p < .01$ ), competence (Pearson correlation coefficient = .866,  $p < .01$ ), and relatedness (Pearson correlation coefficient = .833,  $p < .01$ ), meaning that the construct has strong convergent validity.

Table 4: The Composite Reliability (CR) and Average Variance Extracted (AVE) of the Self-determination Construct and Its Three Dimensions

Construct	Item	Factor Loadings	t	Composite Reliability	Average Variance Extracted
Self Determination				0.961	0.672
Dimension 1-Autonomy				0.873	0.633
	A1	0.846	57.404		
	A2	0.861	59.317		
	A3	0.744	50.892		
	A4	0.722	59.270		
Dimension 2-Competence				0.878	0.641
	C1	0.739	48.132		
	C2	0.809	48.276		
	C3	0.839	44.695		
	C4	0.813	45.400		
Dimension 3-Relatedness				0.919	0.741
	R1	0.798	42.893		
	R2	0.899	43.380		
	R3	0.847	47.551		
	R4	0.895	41.591		

Discriminant validity was tested by comparing the self-determination scale and the scale of another construct, existential insecurity, in the measurement model. Existential insecurity refers to anxiety engendered by the awareness of one's mortality (Rindfleisch et al., 2009). The threatening image of existential insecurity is well explained by terror management theory (Greenberg & Arndt, 2011), which posits that self-protection or self-preservation, as the fundamental human condition, can be triggered in response to the awareness of one's own mortality. In essence, existential insecurity manifests the notion of a self-ameliorating mechanism to buffer the threat of existential insecurity and to enhance the individual's self-image. (Alicke & Sedikides, 2011). Previous studies have proposed that to protect themselves from existential insecurity, individuals exhibit the behavior of a strong self-brand connection and a higher intention of materialistic purchases (Rindfleisch et al., 2009), which supports the view that both self-determination and existential insecurity reflect individuals' perspectives of self-value and self-image for satisfying their intrinsic needs. Thus self-determination and existential insecurity are similar but distinctive constructs that can be examined for their discriminant validity.

Table 6: Discriminant Validity Assessment of Self-determination, Its Three Dimensions, and Existential Insecurity

Items	1	2	3	4	5
1. Self Determination	-				
2. Self Determination - Autonomy	0.790**[-0.725, 0.944]	-			
3 Self Determination - Competence	0.866**[0.929, 1.131]	0.603**[0.416, 0.656]	-		
4 Self Determination - Relatedness	0.833**[1.007, 1.263]	0.437**[0.221, 0.457]	0.565**[0.371, 0.615]	-	
5 Existential Insecurity	0.079[-0.043, 0.118]	-0.025[-0.098, 0.073]	0.143[-0.014, 0.176]	0.068[-0.066, 0.155]	-

Note: \*\*  $p < .01$

To evaluate existential insecurity, participants were also asked to what extent they agree or disagree with the statements regarding an existential insecurity scale, such as “The very idea that my entire personality will disappear forever with my death appalls me”; “The idea that my body will disappear after my death disturbs me.” The whole scale of existential insecurity is cited from Wittkowski’s (2001) MODDI-F inventory. To test discriminant validity, EFA was conducted to elicit the factor loadings of autonomy, competence, relatedness, and another construct, existential insecurity. The EFA factor structure among the items showed that the items that are theoretically belonging to the construct were loaded more highly on their own respective construct than the other construct, as shown in Table 5. Furthermore, discriminant validity was also tested by a comparison between the square root of the AVE of self-determination and the corresponding squared correlation estimates between self-determination and existential insecurity (Fornell & Larcker, 1981). The results showed that the AVE value for the whole construct and the values for the three dimensions are all higher than the corresponding squared correlation estimates between self-determination and existential insecurity as well as the three dimensions and existential insecurity. To further validate discriminant validity, the confidence intervals around the estimates of the correlation between self-determination and existential insecurity as well as the correlation between the three dimensions and existential insecurity were calculated, and the results showed that the confidence intervals of the correlation coefficients did not include one, as shown in Table 6. The correlation results also indicated that the construct self-determination and its three dimensions are not correlated with existential insecurity, indicated by the insignificant p values. It can therefore be concluded that the construct possesses good discriminant validity.

### Study 3

The purpose of Study 3 is to evaluate the nomological validity (e.g., Bearden and Netemeyer 1999) of the self-determination scale in an experiential consumption-related framework. The assessment of nomological validity requires that the construct be put in a nomological framework that is theoretically and empirically expected to be related to other constructs of researchers’ interest. In this study, self-determination is expected to be tested in a hypothesized relationship between FoMO and purchase intentions regarding experiential products.

The phenomenon of FoMO has become of increasing interest in recent years, particularly as it relates to the young generations (millennials, Generation Z, etc.). Self-determination provides a solid theoretical ground for understanding this phenomenon with respect to its explanation of the motivation and social development underlying the situation in which individuals are reluctant to miss out on news, experiences, information, and so on (e.g., Przybylski et al., 2013; Zhang et al., 2020). Particularly, individuals who have a high level of FoMO are usually unhappy with their self-regulation in terms of competence and

autonomy as well as relatedness needs, and the actions of keeping up with a trend, information, or news are considered to be self-regulation tools to satisfy self-determination needs (Przybylski et al., 2013). Furthermore, the deficit in self-determination needs reflects a self-perceived gap between the current self and the expected self (Zhang et al., 2020). It can thus be predicted that the actions that resolve the psychological needs can relieve the symptoms of FoMO in a self-discrepancy setting.

The relationship between self-determination and FoMO has not been well studied and examined in an empirical test in the experiential consumption domain. Though previous studies have supported the notion that FoMO and self-determination are linked to brand, and social media engagement (e.g., Elhai et al., 2018), whether an individual has intrinsic motivation for consuming or purchasing experiences on account of high FoMO and strong motivation for fulfilling psychological needs remains unknown. This study proposes that experiences in which consumers are involved during experiential purchases will fulfill their psychological needs and enhance their self-concept. In other words, individuals engage in experiential consumption to fill the gap between their current self and expected self in an unsatisfied need situation such as FoMO. Thus it is hypothesized that

*Hypothesis: Self-determination mediates the relationship between FoMO and experiential consumption.*

A data sample of one hundred and forty-three American adults was collected from a Qualtrics data panel (69 females and 74 males; average age = 24.75 years). Participants were asked to rate the FoMO scale and the self-determination scale. The FoMO scale was taken from the two-dimensional scale (personal and social) of Zhang et al. (2020). Specifically, participants were asked to rate the extent to which they agree with nine statements, such as “I believe I am falling behind compared with others when I miss events or opportunities”; “I think I am excluded by my social groups when I miss events or opportunities.” Additionally, the same self-determination scale with three dimensions used in the previous studies was adopted.

Moreover, participants were asked to evaluate a scenario in which they imagined that their birthdays were coming up and that they decided to purchase a gift for themselves. Then, participants were told that because of budget limitations, they could choose to purchase a short trip that they could go on with their families or a physical product for themselves. Then they were asked to evaluate their purchase intentions regarding the short trip or the physical product. For the purchase intention of the short trip, they were asked to what extent they considered the statement, “How likely are you to consider purchasing this short trip?” on a seven-point Likert scale, from 1 – “very unlikely/definitely not intend to/impossible” to 7 – “very likely/definitely intend

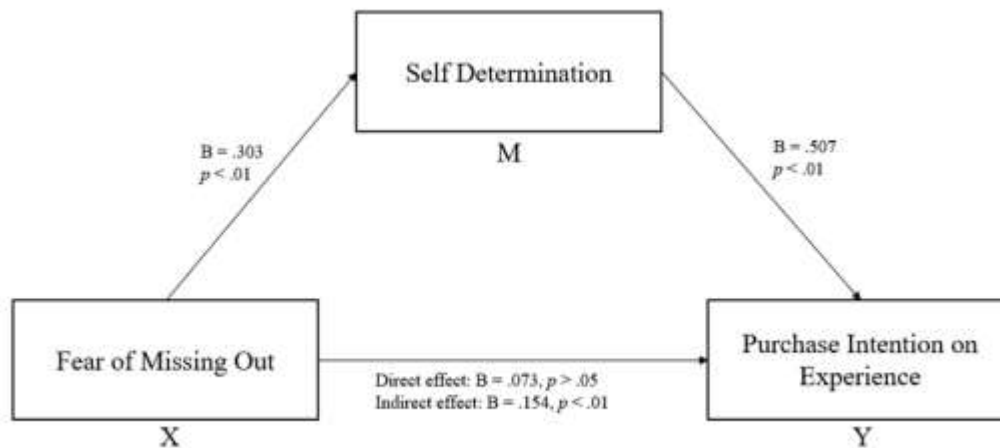


to/possible.” For the purchase intention of the physical product, they were asked to what extent they considered the statement, “How likely are you to consider purchasing a physical product for yourself?” on a seven-point Likert scale, from 1–“very unlikely/definitely not intend to/impossible” to 7–“very likely/definitely intend to/possible.”

### Data Analysis and Results

A mediation analysis was conducted following the procedure introduced by Hayes, A. F. (2012). A conceptual model of the mediation analysis is shown in Figure 1, in which self-determination is theoretically hypothesized as the mediator between FoMO and purchase intention regarding an experience (and in this study, the short trip).

Figure 1: Mediation Model for Study 3



Thus mediation results showed that when entering purchase intention regarding experiences (the short trip) as the dependent variable, self-determination as the mediator and FoMO as the independent variable, the total effect of the model was significant ( $B = .227$ ,  $p < .05$ ), with the bootstrap CI between .0466 and .4072. The indirect effect model was also significant ( $B = .154$ ), with the bootstrap CI between .050 and .064. Furthermore, the complete standardized indirect effect of self-determination on purchase intention regarding experience showed a significant level, with the bootstrap CI between .051 and .239, which indicated a complete mediation role of self-determination between the relationship of FoMO and purchase intention regarding experiences. Clearly, the result of the above analysis supports the hypothesis that self-determination plays a mediating role in the relationship between FoMO and experiential consumption. Furthermore, as empirical confirmation of the theoretical relationships between constructs is a sign of nomological validity (e.g., Bearden and Netemeyer 1999), the nomological validity of self-determination has been supported.

The source of the mediation was further tested when entering purchase intention regarding experiences (short trip) as the dependent variable, FoMO as the independent variable, and each dimension of the self-determination construct as the mediator, respectively. The results showed that when autonomy functioned as the mediator in the model, both total effect ( $B = .227, p < .05$ , bootstrap CI between .047 and .407) and indirect effect ( $B = .145$ , bootstrap CI between .054 and .246) were significant. The completely standardized indirect effect of autonomy on purchase intention regarding experiences is also significant ( $B = .131$ , bootstrap CI between .047 and .229), which indicated a complete indirect effect. The same effect occurred when competence was the mediator in the model, with the total effect ( $B = .227, p < .05$ , bootstrap CI between .047 and .407), indirect effect ( $B = .126$ , bootstrap CI between .063 and .235), and completely standardized indirect effect ( $B = .114$ , bootstrap CI between .038 and .213) all significant. However, when relatedness worked as the mediator, the effect was not significant. The results only showed a significant direct effect of FoMO on purchase intention regarding experiences ( $B = .308, p < .05$ ). The above results showed that the source of the mediation effect comes from the autonomy and competence dimensions of self-determination. This is consistent with previous studies finding that experiential consumption was intrinsically motivated and more related to individuals' personal goals rather than social goals (Guevarra & Howell, 2015).

The mediation effect was also tested when purchase intention regarding physical goods (the physical gift for self) was the dependent variable, self-determination was the mediator, and FoMO was the independent variable. The results showed that neither the total effect, the indirect effect, nor the direct effect was significant, which indicated that both the FoMO and the self-determination constructs fit well in the experiential consumption context rather than the physical consumption context. The adapted scale of self-determination is best applied in experiential consumption settings.

#### **Study 4**

Considering the recent trend of consuming online experiences, it may be worth investigating whether self-determination motives can be applied in the context of digital experiences (e.g., Guo et al. 2021). For the purpose of exploring consumers' feelings regarding their digital experiences and the underlying self-determination motivations, this study will utilize online reviews, as the previous studies suggested that online reviews can be used to identify users' experiences and their links to service offerings and are considered to be valuable information that can assist prospective consumers in determining which experiences they may enjoy and what experiences they would like to enroll in (e.g., Chen and Chang 2018, Ju et al. 2019). The online review data was gathered from hundreds of public reviews posted on Airbnb.com, as previous studies have indicated that downloading public reviews or posts do not qualify as research involving human subjects (e.g., Cheng and Jin 2019, Kozinets 2010, Hookway 2008). Specifically, a manual collection of data was conducted in August 2022 using reviews of three types of

popular digital experiences posted on Airbnb’s website, including a magical show, a digital travel tour, and an instructional cooking class. The above three types of digital experiences were selected because of the following reasons: 1) the strength or impact of the three dimensions of self-determination varies according to the experience type of category; for example, taking a digital tour of the world may be considered more autonomous, while demonstrating cooking is considered more competence-building, and digital shows can be utilized to enhance relatedness among a group of individuals; 2) various types of digital experiences were considered in order to avoid biases in favor of one or more dimensions of self-determination, particularly if certain aspects of the self-determination motives are correlated with specific forms of digital experiences. For each experience, approximately 150-200 reviews were collected. These reviews were posted by users on the Airbnb website between June 2021 and August 2022. The reviews were chosen randomly in order to ensure that the sample reflects the overall opinion of digital experiences. Table 7 illustrates the details regarding how many reviews were collected for each digital experience and the average number of words included in each review.

Table 7: The Overall Information Gathered from the Airbnb Reviews

Type of Digital Experience	Number of the Reviews Collected	Average Number of Words for Each Review
Magic Show	163	45.11
Digital Travel Tour	193	46.46
Cooking Class	172	42.06

In the next step, the data were analyzed using software called Linguistic Inquiry and Word Count (Pennebaker et al. 2007) which analyzes words within a text and determines the percentage of those words that are found in the selected dictionaries. It was determined that two dictionaries were used: LIWC 22 Dictionary (English) for words related to “affiliation”, “achieve”, and “power” and self-determination and self-talk dictionary (Oliver et al. 2008) which includes terms related to “autonomous” and “controlling”. Based on a comparison between the text and the related terms in the dictionary, the percentage of the words that appeared in each review was then determined, and the total scores was generated automatically as a result of the calculation of the percentages of the related texts in all the reviews. Table 8 presents information on how the word categories were used to measure the three dimensions of self-determination, along with the total score resulting from the word comparison for each digital experience.

Table 8: Information on the Usage of the Word Categories and the Sum Score Resulting from the Word Comparison

Type of Digital Experience	Self-Determination Dimension	Word Dictionary	Key Category in the Dictionary	Total Score
Magic Show	Autonomy	Self-Determination and Self Talk Dictionary	Autonomous	0.35
		Self-Determination and Self Talk Dictionary	Controlling	0.31
	Competence	LIWC 22 Dictionary	Achieve	1.77
		LIWC 22 Dictionary	Power	0.17
	Relatedness	LIWC 22 Dictionary	Affiliation	5.90
Digital Travel Tour	Autonomy	Self-Determination and Self Talk Dictionary	Autonomous	0.35
		Self-Determination and Self Talk Dictionary	Controlling	0.31
	Competence	LIWC 22 Dictionary	Achieve	1.13
		LIWC 22 Dictionary	Power	0.43
	Relatedness	LIWC 22 Dictionary	Affiliation	3.44
Cooking Class	Autonomy	Self-Determination and Self Talk Dictionary	Autonomous	0.38
		Self-Determination and Self Talk Dictionary	Controlling	0.76
	Competence	LIWC 22 Dictionary	Achieve	1.27
		LIWC 22 Dictionary	Power	0.34
	Relatedness	LIWC 22 Dictionary	Affiliation	5.12

In the following step, an ANOVA analysis was conducted in order to determine how the independent variable, which is the type of the digital experience, affect the dependent variables, which are the measures of self-determination motives. The ANOVA results with p-values of the dependent measures are shown in Table 9.

Table 9: ANOVA Results: Mean Value, Standard Deviation, and Significance Level

Dependent Variable	Independent Variable	Mean	Std. Deviation	Sig. Level
Affiliation	Magic Show	5.90	4.61	$p < .05$
	Digital Tour	3.43	3.83	
	Cooking Class	5.12	4.05	
Power	Magic Show	0.17	0.63	$p < .05$
	Digital Tour	0.43	1.00	
	Cooking Class	0.34	0.95	
Autonomy	Magic Show	0.23	0.74	$p > .1$
	Digital Tour	0.35	0.93	
	Cooking Class	0.38	1.14	
Achievement	Magic Show	1.77	4.61	$p < .05$
	Digital Tour	1.13	3.83	
	Cooking Class	1.27	4.05	
Controlling	Magic Show	0.64	4.61	$p < .05$
	Digital Tour	0.30	3.83	
	Cooking Class	0.76	4.05	

It is evident from the results that satisfaction with relatedness needs differs significantly across various types of experiences. In particular, the magic show ( $M = 5.90$ ,  $p < .05$ ) has been found to be the most effective in satisfying relatedness needs. It may be attributed to the nature of the magic show, which is intended for entertainment purposes and enjoyed by a broad range of social groups. The digital tour ( $M = 3.43$ ), on the other hand, satisfies the lowest level of relatedness needs since it provides a more experiential means of obtaining personal pleasures and hedonic benefits. There are no significant differences regarding autonomy among the three types of digital experiences ( $p > .1$ ). In terms of competence, the results are mixed: when measured by the dimension of power, the digital tour fulfills the highest competence needs ( $M = .43$ ,  $p < .05$ ); when viewed from the perspective of achievement, the magic show scores the highest ( $M = 1.77$ ,  $p < .05$ );

when reflected by the dimension of control, the cooking class is rated highest ( $M = .76$ ,  $p < .05$ ). Considering that self-determination dictionary (Oliver et al. 2008) states that the controlling dimension is most representative of competence, controlling is the primary factor considered in determining competence. Accordingly, the cooking class meets the highest competence needs, which is in agreement with the definition and concept of competence, in that it represents an ability to perform tasks in order to acquire and promote certain skills. On the basis of the above results, it can be concluded that self-determination can also be achieved through the consumption of digital experiences. It is important to note, however, that the degree to which self-determination needs can be satisfied is determined by the types of experiences one has encountered.

## Results and Discussion

The scale of self-determination in an experiential consumption context has been validated in the present study, and its applicability should be extended to various types of experiential products. The adapted self-determination scale is especially useful when researchers would like to explore consumers' perceptions of how experiences fulfill fundamental psychological needs and complete individuals' self-fulfillment and self-identity. It is valuable to apply the self-determination scale in the experiential domain because, consistent with previous studies (e.g., Guevarra & Howell, 2015), experiences can effectively satisfy psychological needs such as autonomy and competence and lead to positive well-being outcomes. The self-determination scale in this study can also assist both researchers and practitioners in understanding how experiences can be designed and created for the development of personal well-being.

Generally, self-determination needs, particularly autonomy, and competence, are met through the intrinsic stimulants of the product or services, so the fulfillment of the autonomy or competence needs should predict a better success rate and more positive customer feedback regarding an experiential product. Additionally, the relationship between self-determination and FoMO has been validated in the current study. Supporting the findings of Zhang et al. (2020), the role of self-determination in resolving feelings of FoMO relies on the personal aspects of the self-concept, which are autonomy and competence rather than relatedness. Though previous studies have supported the social needs of individuals and their effect on consumer well-being and have argued that the initiation of FoMO is from a social comparison of "do not want to miss out when others are able to do" (Przybylski et al., 2013), this study supports a different view of FoMO: FoMO is related to personal goals of achievement when an individual observes a self-discrepancy, and self-determination-oriented activities reflect individuals' needs for experiences that are related to personal goals. Accordingly, it is effective for businesses to promote activities that are related to personal fulfillment to relieve individuals' feelings of FoMO, such as experiences or activities that involve feelings related to one's purpose or the meaning of life; positive emotions; and personal goals of growth, uniqueness, self-enhancement, and self-care. According to the present study, experiences

associated with autonomy and competence needs that can improve individuals' understanding of their personal goals would lead to higher purchase intentions and potentially other market outcomes.

### **Managerial Implications**

It has been discussed previously that experiences are capable of satisfying psychological needs such as autonomy and competence and leading to positive outcomes associated with well-being. One implication for managers, in this regard, is to design experiential products that can better fulfill individuals' basic psychological needs in terms of how experiences can constructively produce feelings of fulfilling one's personal potential and self-actualization. Marketers should also seek a good fit between consumers' experiences with products and consumers' specific types of psychological needs—specifically connected to autonomy, competence, and relatedness—and personal goals and the fulfillment of these. A further consideration is that certain types of experiential consumption, such as luxurious experiential purchases, have the potential to be influenced by self-determination. As previous studies have shown that perceptions of desirability have a stronger influence on outcomes of luxury consumption (Kuo and Nagasawa 2020), managers may want to elucidate consumers' psychological needs and self-determination in advertising campaigns in order to enhance their perception of desirability and the corresponding marketing results. In addition, marketers should deliver enhanced experiences in an effort to provide the brand experiences that are consistent with consumers' current or expected self-image so that consumers create positive feelings during their experience encounters; the value of products or services should emphasize the enhancement of autonomy and competence goals in the consumer experience co-creation process and consumers with strong autonomy and competence should be given the opportunity to participate in the creation of their own experiences; an individual with a strong need for autonomy should be provided with the most complete information regarding all options and the potential implications of their purchase decisions on experiential products.

The current study suggests that self-determination plays an essential role in consumers' purchase intentions regarding experiences as experiences impact consumer emotions. To increase consumers' interest and engagement in experiences and related behavioral intentions, companies need to specifically shape the autonomy or competence aspect of experiences that can ameliorate positive emotions. To date, most research on FoMO and certain purchase tendencies, such as impulsive buying, have been examined solely from the perspective of negative emotions (Parsad et al. 2019, Aydin et al. 2021, Celik et al. 2019). A self-determination behavior may relieve feelings of FoMO during experiential consumption, decrease negative emotions while increasing positive emotions, and therefore improve certain negative purchasing habits such as impulsive purchases. While the underlying psychological factors are likely to differ from consumer to consumer based on their values, needs, preferences, etc. brands and products should

be designed based on a thorough understanding of consumers' intrinsic personal and social needs. For example, to increase the experiential engagement of customers, marketers can personalize or customize the experiences to fulfill customers' emotional needs for personal achievement; marketing practices should focus on the promotion of the autonomy- or competence-related benefits and how these benefits can relieve emotional stress and disturbance in product appeals, especially when products have a high concentration of experiential content.

Furthermore, as consumers place a greater emphasis on experiential consumption in an online environment, marketers should pay attention to how self-concept and self-determination affect consumers' behavior when consuming digital experiences. Supporting the conclusion that self-determination can be met through the consumption of online experiences in the current study, previous studies have demonstrated that marketing strategies for experiential consumption can be applied within the context of digital marketing environments (e.g., Sülük and Aydın 2019, Schmitt and Zarantonello 2013); therefore, there are several marketing strategies marketers can apply based on the current study and previous findings. For example, taking into consideration the service features of experiential products, it would be important for marketers to enhance reliability and responsiveness to meet the autonomy and competence needs and interactive features to meet the relatedness needs, thereby resulting in a more positive consumer experience; as consumers' purchase intentions are always influenced by the availability of online experiences, marketers need to focus on inciting purchase intentions by offering a wide range of alternatives to consumers who have a high degree of autonomy; changing marketing concepts from product-centrism to experience-driven in a digital environment may even be more necessary in order to provide a consistent level of consumer experience and improve consumer satisfaction, and so on.

### **Limitations and Future Research**

The present study focuses on validating a self-determination scale in an experiential consumption setting and demonstrates the strong reliability and validity of the scale in relation to experiential consumption constructs such as purchase intentions regarding experiences. In future studies, this scale can be further extended to be tested in other experiential contexts, such as gaming, hospitality, and e-services. This study provides a good example of adjusting the scale in a general experiential consumption setting so it can be used in various service- or experience-oriented industries without further adjustment.

The present study adopted three samples from Qualtrics data panels. Though previous studies have suggested that the representativeness is fair when the samples are taken from crowdsourcing websites such as Amazon's Mturk or Qualtrics panels (Thomas & Clifford, 2017), the average age of the participants across the three studies is 24.28 years old, which represents young generations, such as millennials and Generation



Z. Future studies can test the scale among older generations, such as Generation X and baby boomers, and evaluate whether the validity of the scale still holds. Furthermore, when participants recruited from Qualtrics data panels self-select into the panel population and the specific studies according to the screening criteria, self-selection bias may occur (Cheung et al. 2017), despite the fact that Qualtrics data panel provides researchers with easy access to heterogeneous populations with a diverse range of demographic as well as occupational characteristics. Previous studies have suggested that the self-selection bias among online data panel participants can be reduced with experimental manipulations (e.g., Woo et al. 2015). Experimental studies should be conducted in the future to further validate the self-determination scale, considering the fact that experimental studies in an experiential consumption setting are very suitable for validating the scale.

Another limitation is that though the present study supports a relationship between self-determination and FoMO, which is also supported by previous studies, the causal role in this relationship remains unclear. Future studies should employ an experimental design that can best identify the causal relationship between the two variables to further support the antecedent role of FoMO in relation to self-determination. While the current study employed text analysis to examine how self-determination can be fulfilled through consuming online experiences, it would also be worthwhile to examine the scale of self-determination as well as the relationship between self-determination and FoMO within a digital experiential environment through experimental designs. Furthermore, future studies should also examine other experience-related outcome variables, such as emotional attachment toward experiences and loyalty to experiential products, for example, to further validate the essential role of self-determination and intrinsic motivation in the nomological experiential consumption framework.

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### Appendix A: Definitions of Fear of Missing Out

Author (Year)	Definition
Przybylski et al. (2013)	Consistently keeping in touch with what others are doing as well as a pervasive fear that others may be experiencing rewarding experiences that one is not participating in
Riordan et al. (2015)	One feels uneasy and often consumed by the feeling that friends or others are having a rewarding experience while one is absent
Zhang et al. (2020)	An emotional reaction to missing an experience that is related to one's private or public self
Gil et al. (2015)	A concept describing the feeling that something is taking place on social networks, but you are not able to take part in it

### Appendix B: Demographic Information for Studies 1 to 3

Study	Data Source	Sample Size	Gender	Average Age
1	Qualtrics Data Panel	209 American Adults	104 Females and 105 Males	23.70 Years
2	Qualtrics Data Panel	136 American Adults	80 Females and 56 Males	24.38 Years
3	Qualtrics Data Panel	143 American Adults	69 Females and 74 Males	24.75 Years



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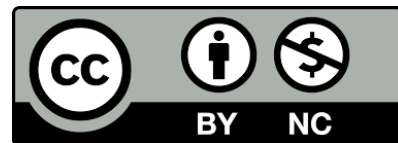
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