

Ehrenberg-Bass Institute Working Paper:

Valuing the contribution of ultra-light buyers

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Abstract

Ultra-light buyers, those who, on average, buy a brand once a year or less, are important by number and their contribution to brand purchase occasions. The initial research, however, was limited in scope and did not measure the contribution of these buyers to sales volume or value. By examining over 850 brands in almost 60 categories, we identify that ultra-lights make up 62% of a brand's buyer base over five years and contribute 32% of purchase occasions and 31% of sales volume and value. In line with previous findings that brands with higher loyalty exhibit more repeat purchases and thus fewer ultra-light buyers and private label brands often exhibit higher than expected loyalty for their market share - we find the prevalence of ultra-light buyers is higher for national brands than private labels, likely reflecting the higher loyalty often observed for private labels. We also find no difference in ultra-light buyers' contribution between high and low-price brands, indicating that price is not a significant factor affecting the contribution of ultra-light buyers. Finally, we find that both growing and declining brands have fewer ultra-lights than stable brands. As growth occurs via increasing penetration and loyalty, for growing brands, new buyers may be more 'light' than 'ultra-light' in terms of their loyalty; while for declines, these findings imply that there are not enough ultra-light buyers to maintain brand sales. A failure to recruit ultra-light buyers may be very dangerous for brand health.

Keywords: brand performance, ultra-light buyers, brand health

1. Introduction

Understanding buyer behaviour helps develop business strategies (Anschuetz, 2002; Howard and Sheth, 1969). An important aspect when evaluating buying frequency or behavioural loyalty for a brand or business is distinguishing between light (i.e., the least frequent buyers Kim et al., 2017) and heavy (i.e., the most frequent buyers Trinh et al., 2023; Tanusondjaja et al., 2022; McCarthy and Winer, 2019; Twedt, 1964) buyers. Previous research has prioritised heavy buyers, as they are significant contributors to brand and category sales (Anesbury et al., 2020; McCarthy and Winer, 2019; Romaniuk and Wight, 2015). Although it is often incorrectly claimed that the heaviest 20% of customers deliver 80% of sales (Romaniuk and Wight, 2015), identifying volume and value sources and recognising customer behaviour variations allows for effective marketing activity management (Dunn et al., 2020; Dawes et al., 2017; Howard and Sheth, 1969; Sheth, 1967). However, recent findings show that approximately 80% of brand buyers, on average, purchase the brand once a year or less over a five-year period, and these “ultra-light” buyers account for around 40% of purchase occasions (Dawes et al., 2022; Graham and Kennedy, 2022). Hence, measuring the sales contribution of ultra-light buyers is critical to developing a brand growth strategy that properly accounts for long-term buyer sales distributions and constitutes the focus of this study.

Two studies have explored the behaviour of ultra-light brand buyers (Dawes et al., 2022; Graham and Kennedy, 2022). Dawes et al. (2022) sought to better understand long-term brand buying by investigating household purchasing in the UK over five (rather than the more normal one) years. In doing so, they identified that, on average, 81% of a brand’s buyer base purchased that brand five or fewer times over five years and contribute 39% of brand purchase occasions. The authors identified the importance of those brand buyers that buy the brand once a year or less often on average and termed them ‘ultra-light’. More recently, when investigating the composition of customer bases for media buying and targeting purposes, Graham and Kennedy (2022) conducted a study of 55 leading advertised brands in 12 consumer goods categories and found that ultra-light

buyers represent 77% of the brand's buyers and contribute 44% of purchase occasions (though referred to them as 'super-lights'). These two studies shared limitations that the present research seeks to remedy. First, past studies are somewhat limited in scope, covering a maximum of 200 brands from ten product categories (Dawes et al., 2022) and 55 brands from 12 product categories (Graham and Kennedy, 2022). Second, prior research only examined purchase occasions, ignoring volume and value - two critical sales metrics (Ambler et al., 2004). Finally, previous research did not investigate the impact that brand characteristics may have on the contribution of ultra-light buyers such as type (private label and national brands - De Wulf et al., 2005), price (high price and low price - Huang et al., 2017), and sales trajectory (declining, stable, and growing – Graham, 2009) impact the contribution of ultra-light buyers to the brand.

Considering these issues, this research extends the previous findings on estimating the proportion of ultra-light buyers and their contribution to purchase occasions using 853 brands from 56 consumer goods categories in the United Kingdom (UK) between 2010-2014 to improve its generalisability (Hanssens, 2018; Sharp et al., 2017; Barwise, 1995) substantially. We also extend this line of research by examining the contribution of ultra-light buyers to sales volume and value. Finally, we conduct a novel investigation of how brand types such as private labels vs. national brands, high price and low price, and sales trajectory, including whether the brand is declining, stable or growing, influence the proportion of ultra-light buyers a brand has over time, and their relative contribution to the market performance of the brand. Based on the empirical findings, we discuss future research priorities for researching consumer buying behaviour and linking it to brand growth. We also outline a series of practical implications for managers.

The current study contributes to the consumer behaviour and brand management fields by enriching our understanding of long-term brand growth, the role of ultra-light buyers, and the practical implications for brand managers. The findings enhance our knowledge of brand penetration over five years, the proportion, and contributions of ultra-light buyers in terms of

occasions, volume, and value across different brand characteristics. These insights advance consumer behaviour theory and inform brand management strategies, allowing the design of effective long-term growth strategies utilising variations to ultra-light buyers' contributions regarding metrics and conditions. The study provides practical knowledge of ultra-light buyers' contribution of 31% to brand volume and value. Advertising is identified as a strategic approach to target ultra-light buyers, as they are less price sensitive. The research offers empirically derived guidelines, emphasising the significance of maintaining all customer segments, including ultra-light buyers, to protect against brand decline and foster growth. Our study bridges theory and practice by providing academics and practitioners with novel long-term brand growth strategies.

2. Background and research questions

2.1 Brand Growth

Penetration, the proportion of shoppers buying a brand at least once in a period, is critical to brand growth. When a brand grows, penetration typically increases at a greater rate than any other measures (Romaniuk et al., 2018), especially at three times the rate of loyalty (Romaniuk et al., 2014). Being a time-dependent measure, penetration grows when examining extended periods (Dunn et al., 2021; Sharp, 2010; Ehrenberg, 2000). Cumulative analysis comparing the buying metrics from one and five years shows repertoire size, category and brand penetrations increase with longer periods (Banelis et al., 2013). Consequently, when cumulative penetration is observed for longer periods, firms gain insights into brand growth changes and contributions for various buyers. Recent studies identify that long-run brand performance depends on maintaining cumulative penetration growth (Dawes et al., 2022; Graham and Kennedy, 2022; Dunn et al., 2021). Therefore, the first research question is:

RQ1: How much does brand penetration accumulate in successively longer periods from one to five years?

2.2 Ultra-light buyers

Previous research often focused primarily on delineating between light and heavy buyers (e.g., Anesbury et al., 2020; Cook and Mindak, 1984). However, more recently, studies specifically concentrated on ultra-light buyers, highlighting their importance from a strategic point of view. Ultra-light buyers are those customers who, on average, purchase the brand once a year or less over a five-year period (Dawes et al., 2022; Graham and Kennedy, 2022). Although it appears, from existing research, that ultra-light buyers are critical for brands, more empirical evidence is warranted concerning generalisations (Mecredy et al., 2021; Hulland and Houston, 2020; Uncles and Wright, 2004; Barwise, 1995). Therefore, our second research question is:

RQ2: What proportion of a brand's long-term buyer base is ultra-light?

2.3 The value of ultra-light buyers

Existing ultra-light buyer research (Dawes et al., 2022; Graham and Kennedy, 2022) focuses exclusively on purchase occasions, assuming this metric effectively captures volume and value (Driesener and Rungie, 2022). However, the assumption results in an inadequate examination of volume (e.g., litres, ounces, kilograms) and value (e.g., pounds sterling, dollars) - two of the most important marketing performance indicators (Ambler et al., 2004) and potential sources of brand growth (Dunn et al., 2020). Furthermore, while most brand growth originates from increasing penetration (Romaniuk et al., 2018), more customers positively affect total sales volume and value. Those consumers purchase additional items (volume) at an additional expense (value).

Although value and volume may correlate, as increasing volume should increase the value of purchases, nonetheless, their increases may occur at different rates. For example, value increases may be less when customers purchase more products at a discount (Akaichi et al., 2015; Raghurib et

al., 2004). Thus, the contribution of ultra-light buyers regarding volume and value may differ by context.

In addition, many brand buyers are infrequent or light buyers of a brand who may be less price sensitive as they buy less and thus have less knowledge of current price levels (Allenby and Lenk, 1995; Kim and Rossi, 1994). Consequently, infrequent buyers may be more likely to purchase brands off-promotion, increasing both purchase volume and value. While prior studies identified the importance of ultra-light buyers in terms of their representation in the brand buyer base, their contribution to sales volume and value was not examined. Therefore, our third research question is:

RQ3: What is the sales contribution of ultra-light buyers over five years regarding purchase occasions, sales volume, and value?

2.4 The effects of brand characteristics on ultra-light buyers

The final aim of this study is to explore the relative importance of ultra-light buyers by differing brand characteristics, specifically private label vs national brands, high-vs-low-price brands, and declining vs stable vs growing brands.

The first brand characteristic is brand type, namely private label vs national brands. Private labels are privately marketed by retailers and restricted to single-chain distribution (Riebe et al., 2014; De Wulf et al., 2005; Bushman, 1993). Conversely, national brands sell via multiple retailers. Previous research finds that private labels tend to have high loyalty for their market share (Martin et al., 2020; Corstjens and Lal, 2000), perhaps because private labels are often cheaper. Conversely, national brands have higher penetrations for the same market share (Lincoln and Thomassen, 2008; Baltas and Argouslidis, 2007). Since infrequent and new buyers are the keys to increasing brand penetration, private labels may have fewer ultra-light buyers. Thus, ultra-light buyers may make a

lower contribution to the sales success of private label (Romaniuk et al., 2014). Therefore, the first part of the fourth research question is:

RQ4a. To what extent do the sales contributions of ultra-light buyers differ between private labels and national brands?

The second brand characteristic is brand price (i.e., high vs low price). Price impacts consumer purchase decisions affecting the volume bought of a brand (Huang et al., 2017; González-Benito et al., 2014). Heavy buyers are more sensitive towards low-price brands (Baltas, 1997; Baltas et al., 1997; Kim and Rossi, 1994) as they purchase more and spend more (Dawes, 2020). Light category buyers' price sensitivity may be lower (Helsen and Schmittlein, 1994), leading them to buy higher-priced brands. Therefore, ultra-light buyers may account for a higher proportion of high-priced brand's buyer base (Huang et al., 2017) and a lower proportion for low-price brands. Furthermore, if a high-priced brand price discounts, more non-buyers may buy the brand due to the asymmetric effect (Aydinli et al., 2014). As these buyers are responding to a temporary price reduction, they may not have the opportunity to repeat buy the higher priced brand for some time; thus, they would be light and ultra-light buyers of that brand. High-priced brands may therefore have a higher proportion of ultra-light buyers, which leads to the following research question:

RQ4b. To what extent do the sales contributions of ultra-light buyers differ between low-price and high-price brands?

The last brand characteristic the present study explores is brand sales trajectory, specifically declining, stable, and growing brand sales. Most brands in a market are stationary over the long run (Ehrenberg et al., 2004; Goodhardt et al., 1984), with only 14% of brands changing market share +/- 3% (Graham, 2009). Romaniuk (2011) examined light buyers across declining, stable, and growing brands over two years, finding that buyer distributions do not change. Similarly, Trinh (2012) and Phua (2022) examined the buyer behaviour of declining brands finding that all buyer types

contributed equally to the decline. Romaniuk et al. (2014) demonstrate that brand growth comes from increasing the number of infrequent and new buyers, which suggests that the number (and therefore proportion) of ultra-light buyers would be greater in growing brands compared to stable or declining brands. However, when a brand grows, the brand purchase frequency also slightly increases following the double jeopardy pattern. That is, bigger brands have many more buyers who purchase from them slightly more often (Dawes, 2022; Klepek and Kvíčala, 2022; Mecredy et al., 2022; Ehrenberg et al., 1990; McPhee, 1963). This suggests that the purchase frequency distribution is slightly heavier for growing brands (i.e., everyone purchases slightly more, including the non-buyers) than for stationary brands. Thus, the proportion of ultralight buyers might be lower for growing brands. In line with this reasoning, the final research question is:

RQ4c. To what extent do the sales contributions of ultra-light buyers differ between stable, growing, and declining brands?

3. Data and Method

This study extends previous work by Graham and Kennedy (2022) and Dawes et al. (2022) examining the buying behaviour of 12,407 continuously reporting households that purchased 853 brands from 56 consumer goods categories in the United Kingdom between 2010-2014. We deliberately utilise the same five-year period for consistency with the extant research (Dawes et al., 2022; Graham and Kennedy, 2022), which exceeds the normal consumer-related period (typically 12 months as per Anesbury et al., 2022; Driesener et al., 2022; Naami et al., 2021), and exceeds the anecdotal three-year average tenure for brand managers. The longer the period, the more likely that ultra-light buyers are included in the analysis as a non-buyer in a one-year period could be classified as an ultra-light buyer in a five-year period. We used panel data from Kantar (2022) for three reasons. First, panel data provides longitudinal buyer behaviour records, which can be aggregated over periods. Second, panel samples are representative of the population, allowing for insights into

consumer behaviour and behavioural change (Singh et al., 2008; Singh et al., 2004). Finally, we note that this is a reputable commercial supplier of data that has been used in a number of publications to date (e.g., Trinh and Wright, 2022; Anesbury et al., 2021; Chowdhury et al., 2021; Phua et al., 2020; Driesener et al., 2017; Tanusondjaja et al., 2016; Trinh, 2014; Yang et al., 2005).

The categories are diverse in annual household penetration, ranging from 91% for Fabric Cleaner (Automatic) to 4% for Toner (Skin Care), an average of 41%, and annual purchase frequencies, ranging between 20.1 for Fruit Juice (Soft Drinks) and 2.1 for Fabric Cleaner (Light Duty), averaging 7.5. We selected brands with annual penetration >0% in each of the five years (i.e., brands with no buyers in one or more years were excluded). The number of brands varied by category; for example, Cola (Soft Drink) has 14 brands, whereas Razor (Women) has 11.

To address the first research question, we calculate annual penetration (i.e., the number of panellists who purchase the category and brands at least once in the period) in Year 1, and then over successively longer periods to five years. For example, there are 12,407 continuously reporting households, of which 7,665 bought Colgate at least once in Year 1; thus, its Y1 penetration is 61.7% (i.e., $\frac{7665}{12407} \times 100$), with successive annual penetrations of 63%, 63%, 63% and 66%. The cumulative penetration is calculated by identifying the buyers over longer periods. For example, 9,238 buyers purchased Colgate at least once over the first two years. The cumulative penetration of Colgate for Y1-Y2 is $(\frac{9238}{12407} \times 100) = 74.5\%$. Colgate's cumulative penetration increased from 62% for Y1 to 74% over two years, 81% over three years, 85% over four years, and 88% over the full five years of data (Y1-Y5). The process is systematically repeated for all brands.

The second research question identifies the proportion of ultra-light buyers amongst the total brand buyer base over five years. To illustrate, Colgate has 10,873 buyers during the five-year period. Of those, 935 had purchased the brand once, 722 had purchased it twice, 690 three times, 638 four times, and 615 five times, totalling 3,600 buyers. The remaining 7,273 buyers purchased

six or more times. Therefore, the proportion of ultra-light buyers of Colgate is $(\frac{10873-7273}{10873} \times 100)$, or 33%. On average ultra-light buyers are 80% of a brand's buyer base over five years in Toothpaste.

The third research question examines the sales contribution of ultra-light buyers by purchase occasion, volume, and value. During the five-year period, Colgate was purchased on 151,731 occasions. Of those, buyers that bought the brand once made 935 purchases, or 0.6% of the total (*i. e.*, $\frac{935}{151731} \times 100$), two-time had 1,444 purchase occasions (1.0% of the total), three-time buyers 1.4%, four-time buyers 1.7%, and five-time buyers 2.0%. Overall ultra-light buyers account for 10,076 occasions, (*i. e.*, $\frac{10076}{151731} \times 100$), or 6.6% of the total occasions for Colgate. The average contribution to occasions in the Toothpaste category from ultra-light buyers is 43%. The same process is applied to sales volume and sales value. For Colgate, ultra-light buyers contribute 6.4% of volume, and 6.3% of value, while for the Toothpaste category, on average, ultra-light buyers contribute 44% of volume and 43% of value.

For the fourth research question, we classified brands by type, price, and trajectory. Brands are classified by type utilising Google search to identify private labels and national brands via their names provided in the panel. For instance, in Toothpaste, Aldi is a private label, while Colgate is a national brand. In line with previous research (Dawes, 2020), brands with a higher average price per pack than the median price of the listed brands of the category were specified as high-price brands and lower than median value were identified as low-price brands. For example, Colgate has an average price of £1.50, which is higher than the median of the 19 brands (£0.98); in contrast, Aldi has an average price of £0.60, which is less than the median and is therefore classified as low-priced. Last, declining, stable, and growing brands are identified using change in market share calculated over five years (Trinh and Anesbury, 2015; Graham, 2009). Following the approach developed by Graham (2009), we use a more lenient benchmark of +/- 3% to classify brands are

growing ($\geq + 3\%$), declining ($\leq - 3\%$), or stable (in between), rather than 2% use by Dawes et al. (2020), or 1% used by Anesbury et al. (2021) for sub-brands. For instance, Colgate's year 1 market share is 42.8%- and its year five market share was 50.9%. Therefore, the absolute change is (50.9% - 42.8%) 8.1% and is thus classified as a growing brand. For the final step, one-way ANOVA tests are applied to each sales metric (occasion, volume, and value) on each brand characteristic (i.e., brand type, price, and trajectory).

4. Results

RQ1 examines the growth of customer penetration from year one to five. Table 1 shows the average annual and cumulative penetration over the 853 brands in our sample. In Y1 the average is 7%, with a range of 1% to 21 %, and a similar 2% to 19% in Y5. Consistent with previous research (Dawes et al., 2022), the cumulative penetration of brands rises over time. On average, brand cumulative penetration increases by 46% from year one to year two, 83% from year one to year three, 112% from year one to year four and 136% from year one to year five.

Table 1 shows differences in cumulative penetration growth dependent on the brand's size. For the highest penetrating brands (brands 1 to 3), the five-year cumulative penetration is approximately double what it is in Y1. In contrast, the lowest penetrated brands (bottom three brands) show an average cumulative penetration growth of approximately seven times the Y1 penetration. Thus, in response to RQ1, we find that penetration grows over a five-year period; the average changes in brand growth are about 136%, from 6% to 14%, though this is lower for larger brands (about 100%) and higher for smaller brands (about 700%).

Table 1: Average annual penetration and cumulative penetration of 853 brands (56 categories)

	Annual Penetration (%)					Cumulative Penetration (%)			
	Y1	Y2	Y3	Y4	Y5	Y1-2	Y1-3	Y1-4	Y1-5
Brand 1	21	21	20	19	19	28	33	37	39
Brand 2	13	13	12	12	11	18	22	25	28
Brand 3	10	9	8	8	8	13	16	18	20
Brand 4	8	7	7	6	5	12	14	16	17
Brand 5	7	7	7	6	6	10	13	15	16
Brand 6	5	5	5	5	4	8	10	12	13
Brand 7	5	4	4	4	3	7	9	10	11
Brand 8	4	3	3	3	3	5	7	8	9
Brand 9	3	3	3	3	3	5	7	8	9
Brand 10	3	3	3	3	3	5	7	8	9
Brand 11	3	3	3	3	2	4	5	6	8
Brand 12	2	3	3	3	3	4	5	6	7
Brand 13	2	3	3	3	2	4	5	6	7
Brand 14	2	3	3	3	3	4	5	7	8
Brand 15	2	3	4	4	4	4	6	8	9
Brand 16	2	2	3	3	3	4	5	6	7
Brand 17	2	2	3	3	4	3	5	7	8
Brand 18	1	5	7	7	7	6	9	12	14
Brand 19	1	1	1	1	2	2	3	3	4
Brand 20	1	1	1	2	2	2	4	5	6
Average (n=853)	6	6	6	6	5	9	11	13	14
Changes from Y1						46%	83%	112%	136%
Dawes et al., (2022) (n=200)	9	9	9	9	8	12	16	18	21
Changes from Y1						43%	76%	103%	126%

Turning to RQ2, we quantify the proportion of ultra-light brand buyers. Table 2 shows that 30% of buyers, on average, purchase only once, 14% of customers buy twice, 9% three times, 6% four times, and 4% five times in five years. Therefore, on average, 62% of all brand buyers are ultra-light. The results are 19 percentage points (pp) lower than Dawes et al. (2022), who found the proportion of ultra-light buyers is 81%, and 15pp lower than Graham and Kennedy (2022), who found the proportion of ultra-light buyers is 77%. However, the proportion of ultra-light buyers varies by category. For example, for Razors (Men and Women) and Fabric Cleaner (Light Duty), the proportions of ultra-light buyers are all higher than the average (93%, 91% and 86%, respectively). Conversely, the proportion of ultra-light buyers is lower than the average in Cola (Soft Drink), Slice (Cake) and Muffins (Cake) (34%, 34% and 32%, respectively).

Table 2: Proportion of Ultra-light brand buyers (56 categories)

	# brands	Ave brand pen. Y1-5	Ultra-light buyers (%)	Ultra-light buyers buying x times in 5 years (%)						# brands	Ave brand pen. Y1-5	Ultra-light buyers (%)	Ultra-light buyers buying x times in 5 years (%)				
				One	Two	Three	Four	Five					One	Two	Three	Four	Five
Razor (Women)	11	5.3	93	61	20	7	4	2	Cleaning Accessories (Paper)	16	32.0	60	30	13	8	5	4
Razor (Men)	18	6.2	91	57	18	8	5	3	Cooking (Sauce)	18	22.1	60	23	14	10	7	6
Fabric cleaner (light duty)	8	1.9	86	68	10	5	2	2	Filled Lollies (Ice Cream)	13	14.4	59	25	14	9	7	5
Stout (Beer)	10	3.8	86	54	15	8	5	3	Cat Food (Treats)	12	6.8	56	29	13	8	5	3
Baby Skin Care	9	2.5	85	53	17	7	6	3	Lip Preparation (Skin Care)	16	33.4	56	14	14	12	8	8
Hand Preparation (Skin Care)	17	4.3	84	43	20	11	6	4	Toner (Skin Care)	16	0.9	56	14	14	12	8	8
Ale (Beer)	20	12.4	83	48	17	9	6	4	Fruit Juice (Soft Drink)	17	0.9	56	24	13	8	6	4
Green Olives	19	8.8	82	42	19	10	6	4	Facial Tissue	17	18.0	55	24	12	9	6	5
General Purpose (Skin Care)	18	5.2	82	40	20	10	7	5	Toilet Paper	19	23.9	55	21	13	9	6	5
Lager (Beer)	20	13.5	81	47	16	8	5	4	Paper Towel	17	18.9	55	22	13	9	6	5
Toothpaste	19	2.5	80	46	16	9	6	4	Fruit Lovers (Cake)	13	13.9	54	28	11	6	5	4
Mixed Olives	16	20.5	80	41	19	9	7	5	Cake Bar (Cake)	10	12.4	54	22	12	8	6	5
Cleanser (Skin Care)	18	9.6	76	36	17	11	7	5	Choco Snack (Ice Cream)	12	16.5	53	20	12	10	7	5
Body (Skin Care)	18	6.8	76	36	17	11	7	5	Flavoured variety (Soft Drink)	18	32.5	52	21	12	8	6	5
Choco Bar (Ice Cream)	17	9.6	76	41	16	9	6	4	Pizza (Individual Serving)	4	7.9	51	18	14	8	7	5
Black Olives	15	2.7	75	35	19	10	7	4	Cat Food (Dry)	15	13.1	51	22	11	8	6	4
Fabric cleaner (automatic)	16	25.7	72	36	16	9	6	5	Cat Food (Wet)	17	12.7	49	19	12	8	6	4
Instant (Coffee)	20	6.8	71	38	15	9	6	4	Mixers (Soft Drink)	16	9.6	49	21	11	7	6	4
Cappuccino (Coffee)	13	17.3	71	37	15	10	6	3	Small Size (Cake)	18	31.7	47	16	11	8	6	5
Pizza	15	6.3	69	31	16	10	7	5	Fruit Squash (Soft Drink)	17	22.9	46	19	11	7	5	4
Face Moisturiser (Skin Care)	18	20.2	69	28	16	11	7	5	Small Pie (Cake)	18	16.1	46	17	11	8	6	5
Adult Lollies (Ice Cream)	9	7.9	66	34	16	8	6	3	Mineral Water (Soft Drink)	18	21.2	45	21	10	6	5	4
Pour over (Sauce)	13	5.1	65	33	14	8	6	5	Whole size (Cake)	18	19.5	40	12	9	7	6	5
Instant Decaf (Coffee)	17	12.1	65	32	14	9	6	5	Tarts (Small)	15	16.2	38	13	8	7	5	5
Chilled Lollies (Ice Cream)	14	11.4	64	30	14	9	6	5	Swiss Style Cake (Small)	14	10.4	35	11	8	6	5	4
Specialty (Coffee)	8	5.0	63	30	15	8	6	4	Cola (Soft Drink)	14	20.4	34	12	8	6	5	4
Liquid (Sauce)	17	24.1	62	27	15	9	7	5	Slice (Cake)	13	15.8	34	13	7	5	4	4
Pizza (Main Meal)	15	14.7	60	24	15	9	7	4	Muffins (Cake)	14	12.8	32	8	7	7	6	5
Average												62	30	14	9	6	4
Dawes et al. (2022)												81	46	17	9	6	4
Graham and Kennedy (2022)												77	41	16	9	6	4

RQ3 identifies the contribution of ultra-light buyers to the managerially critical sales metrics volume and value, in addition to a useful proxy (purchase occasions). Figure 1 demonstrates that one-time buyers account for 11% of purchase occasions, two-time buyers account for 7%, three-time buyers are 5% and four- and five-time buyers calculate for 4% and 4%. In total, in five years, 32% of purchase occasions stem from ultra-light buyers. The percentage of total buying differs across the categories. In some categories, such as Razors (Women), 80% of brand purchase occasions result from ultra-lights. In a few categories, such as Cola, only 5% of purchase occasions are made by ultra-light buyers in five years. Although Dawes et al. (2022) found that, on average, ultra-lights contributed 39% of a brand's purchase occasions, this study finds that about 7pp fewer purchase occasions are delivered by ultra-lights.

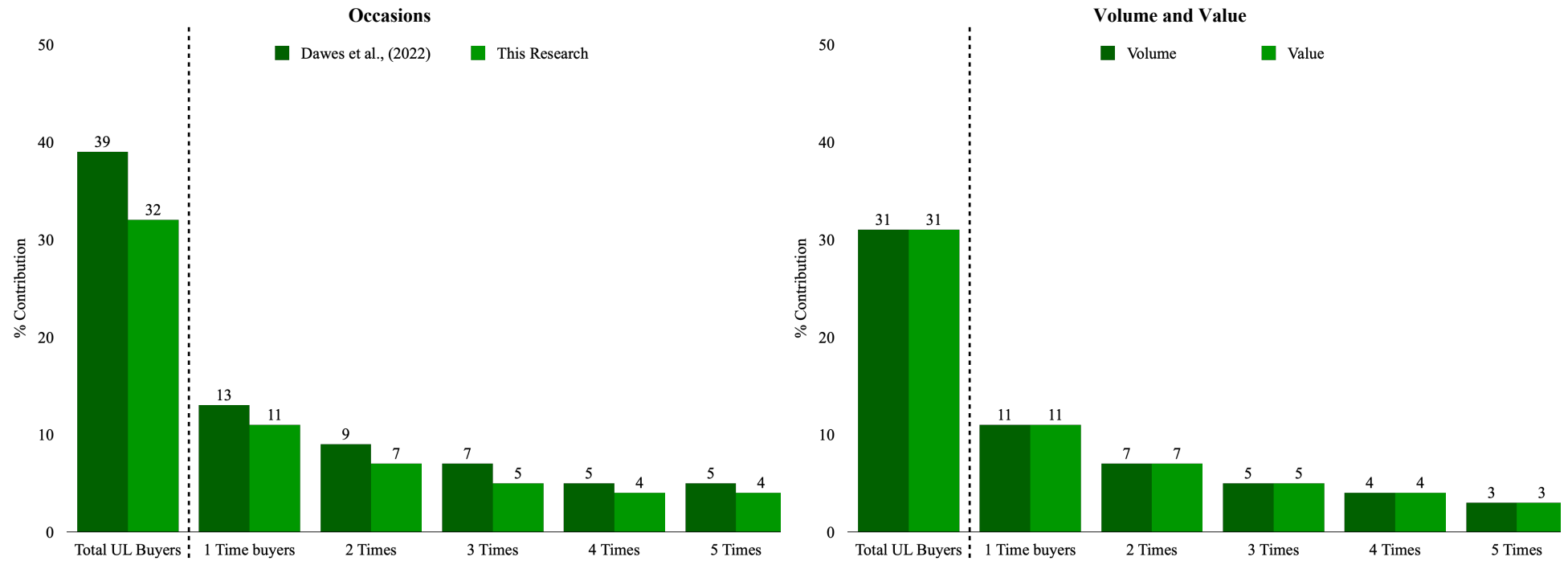


Figure 1: Percentage of occasions, volume, and value of ultra-light buyer

Turning to the key sales metrics, one-time buyers account for 11% of volume; two-time buyers 7%; three-time buyers 5%; four-time buyers 4%, and five-time buyers 3% of volume over five years. On average, ultra-lights contribute 31% of a brand's sales volume over five years. Again, this contribution also differs across categories. For example, in the Razor (Women) category, the volume contributed by ultra-lights is 80% of all sales volume; in the Soft Drinks (Colas) category, this contribution is only 4%.

The sales value contribution of ultra-light buyers is nearly identical to purchase value and occasions. A total of 31% of a brand's value is delivered by ultra-light buyers, with a near identical distribution. The contribution of ultra-lights in the Razor (Women) category to sales value is 79%, whereas only 4% of sales value stems from ultra-light buyers in Colas. The results reveal that, on average, 31% of sales value in five years is delivered by a brand's ultra-light buyers. To compare the mean difference amongst occasion, volume and value, a paired comparison test has been calculated. The mean of purchase occasion significantly differs from volume and value ($p < 0.01$), but there is no statistically significant difference between the means for volume and value.

RQ4 examines how ultra-light buyers' contributions vary by key brand characteristics. Table 3 reveals that national brands have a larger percentage of their purchase occasion, volume, and value coming from ultra-lights, respectively 37%, 36%, and 35%, which is higher than the market average (32%, 31% and 31%), and private labels (28%, 27% and 27%). Ultra-light buyers' contribution to sales for national brands is about one-third greater than private labels regarding purchase occasion, volume, and value. The ANOVA results reveal that each of the metrics of ultra-light buyers' sales contribution (occasion, volume, and value) differs by Brand Type, as $Pr(>F)$ value is < 0.00 for all indicators. Ultra-light buyers are more important to national brands for each purchase occasion, volume, and value.

Table 3: Contribution of ultra-light brand buyers for brand type, price, and trajectory

	Occasion (%)	Volume (%)	Value (%)
Brand Type (RQ4a)			
Private Label	28	27	27
National Brand	37	36	35
Brand Price (RQ4b)			
High Price	33	32	32
Low Price	30	29	30
Brand Trajectory (RQ4c)			
Declining	28	27	27
Stable	34	32	33
Growing	25	24	24

To examine how the sales contribution of ultra-light buyers varies by brand price, we calculated the mean percentage value of ultra-light buyers' purchase occasion, volume, and value for high-priced and low-priced brands in all categories. Table 3 shows that although high priced brands have a larger percentage contribution from ultra-light buyers by purchase occasion, volume, and value (33%, 32%, and 32%), than the market average (32%, 31% and 31%), and these proportions are not very different from low priced brands, (30%, 29%, and 30%). Additionally, ANOVAs show that the outcome is statistically insignificant ($\text{Pr}(> F) \geq 0.05$ in all tests). The mean deviation across the categories is not significant; hence, there is no difference in the contributions of ultra-light buyers between low price and high price brands.

Finally, RQ4c examines the differences in ultra-light buyers' sales contribution by sales trajectory. The results (Table 3) show that ultra-light buyers' contributions to the occasion, volume and value of brand sales are larger for stable brands (34%, 32% and 33%) than in declining and growing brands. Declining brands have a moderate contribution from ultra-lights to brand sales occasion, volume, and value (28%, 27%, and 27%), though growing brands exhibit the lowest sales contributions from these light buyers (25%, 24% and 24%). One-way ANOVAs show that ultra-light buyers' contributions are significantly different ($\text{Pr}(> F) \leq 0.01$ in all tests) by brand sales trajectory. This suggests that stable brands have more ultra-light buyers, and growing brands fewer.

5. Discussion

In exploring ultra-light buyer behaviours, this study extends research findings on their prevalence and contribution to purchase occasions, extending the analysis to sales volume and value metrics. Furthermore, we considered crucial brand characteristics, such as brand types (private label vs. national brand), price (high vs. low) and growth trajectory (declining, stable vs. growing brand). Our findings advance research that links the understanding of consumer buying behaviour to long-term brand or business growth strategies, enhancing empirical documentation of the importance of ultra-light buyers in diverse conditions, as follows.

5.1 Theoretical Contribution

Our first finding extends Dawes et al. (2022) and identifies a nearly identical result that the buyer bases of the brands grow substantially over five years. Each brand's average yearly penetration is about 6% and varies from 1% to 21% across the brands. The cumulative penetration grows in the first year to the second year by 46%, on average, and by 136% in the fifth year. The result increases the empirical generalisability (Uncles and Wright, 2004; Barwise, 1995) of Dawes et al. (2022)'s findings with more evidence. Therefore, since a brand's penetration typically grows over the long run, all stable brands should aim to continuously attract infrequent buyers and non-buyers (Dawes, 2016).

Regarding the proportion of ultra-light buyers in the buyer base, we found some differences vs. previous research, as follows. Whilst previous research found ultra-light buyers are, on average, 81% of a brand's customer base, when including more categories of consumer goods categories, this research finds that 62% of all buyers, on average, are ultra-light. The difference is likely due to more variation in categories and the inclusion of smaller brands. Previous studies considered fewer, larger brands from fewer, higher penetrating categories (Dawes et al., 2022; Graham and Kennedy, 2022). Our larger set of categories and smaller brands ensure greater representation and generalisability of results (Uncles and Kwok, 2013).

Regarding conceptual contribution (MacInnis, 2011), the present study endorses the importance of ultra-light buyers to purchase occasions (Dawes et al., 2022; Graham and Kennedy, 2022) and extends to value and volume. The findings reveal that ultra-light buyer account for 32% of purchase occasions and 31% for volume and value. The average contribution differs between categories, ranging from 5% to 80%. The large difference is due to the brand's penetration and purchase frequency variation within the different categories. Furthermore, there are significant differences between the purchase occasion and volume or value but none between volume and value. The correlational evidence suggests ultra-light buyers might not be price sensitive. Ultra-light buyers' purchase volume and value do not differ. In contrast, the similar contribution between occasions and volume or value reveals that increasing numbers of ultra-light buyers' occasions might increase the volume and value.

Finally, in this study, we considered the difference in sales contributions for brand characteristics, specifically brand types, price, and trajectory. The findings show that around 37% of all brand purchase occasions and 36% and 35% of brand sales volume and value originate from ultra-light buyers in five years for national brands, while only 28% of the brand sales of private labels regarding occasion, volume and value originate from these buyers. Consequently, ultra-light buyers are more critical for national brands, indirectly confirming previous studies finding that loyalty is greater in private labels than in national brands (Dawes, 2013; Pare and Dawes, 2011). In addition, private labels have large variations and assortments of products compared to national brands (Olbrich et al., 2017), an occurrence that might contribute to satisfying more heavy buyers, while national brands have greater contributions from ultra-light buyers.

We also found that the sales contributions of ultra-light buyers to low-priced brands are not different than for high price brands for occasions, value, and volume. Although previous research shows that heavy buyers tend to gravitate more to the low price brands due to the weight of buying and high price sensitivity (Dawes, 2020; Baltas, 1997), we find that ultra-light buyer contribution

does not differ between low and high price brands, and ultra-light buyers are important regardless of price tier.

Finally, this research shows that the sales contribution of ultra-light buyers is greater for stable brands (32%) than declining and growing brands, and growing brands have a lower proportion of ultra-light buyers (25%) than declining brands (28%). We interpret this outcome as follows. Stable brands have a lighter customer base than growing and declining brands, and purchase distributions ‘shift’ as brands grow or decline. Growth in market penetration implies anyone that buys a bit more than expected so that those who would otherwise be ultra-light up-weight purchases – effectively becoming ‘light buyers’. There are simply not enough ultra-light buyers for declining brands to maintain the same market penetration. Hence, overall, a failure to recruit occasional buyers may hinder brand growth (Riebe et al., 2014).

5.2 Practical Contribution

This study provides practical knowledge to brand managers on the importance of ultra-light buyers. We show that a large proportion of a brand’s buyers are ultra-light (62%), highlighting the importance of these buyers to the brand simply in terms of who a brand’s customer base might be. We also show that the contribution of ultra-light buyers to the brand’s sales volume and value is almost 31% over five years – not only are there very many ultra-light buyers, but they also make an important contribution to the brand’s sales success. From a practical point of view, this means that brand managers should avoid marketing activities that make it more difficult for consumers who purchase them infrequently to recognise them in buying situations, for example, implementing unnecessary packaging changes for a consumer goods brand.

In this research, we also identified that ultra-light buyers are less represented for lower-priced brands. Therefore, marketing tactics, such as advertising, are a preferred strategic pathway to address ultra-light buyers. This research, therefore, advocates that advertising agencies design

creative and media strategies to increase mental availability (Romaniuk, 2013) of brands for all buyer types, including ultra-lights, thus contributing to sales. Given how infrequently ultra-lights may be buying and the potential role of advertising, the implication for branding is to preference clear, prominent and consistent branding (Hartnett et al., 2016) and to take an expansive view of media targeting (Kennedy and Hartnett, 2018).

Furthermore, the findings of this study assist managers of brands that match the characteristics we examined. These findings are relevant for both private labels and national brands managers when designing their brand strategy. The managers of private labels should be aware that although the contribution of ultra-light buyers to their brand sales are lower than national brands, these buyers are still critical for growing and maintaining their brand sales; an abnormally low proportion of ultra-light buyers (compared with the category norms) may also be the cause of a decline in sales if the brands are not growing. On the other hand, growing brands could afford to have lower proportion of ultra-light buyers. Perhaps because growing brands tend to be bigger brands and therefore have higher average purchase frequency than stable and declining brands. Therefore, maintaining and monitoring ultra-light buyers is important for managing the extent of brand growth and decline.

These outcomes suggest to managers that the proportion and contribution of ultra-light buyers should be maintained to assist brand growth over the long run. For example, a brand manager operating within the Toothpaste category in the United Kingdom during this five-year period, armed with the knowledge that four in five of their brand's buyer purchase from them once or less every year, should actively consider and manage all groups of customers, not just heavy buyers, to maintain and grow their brand.

Anecdotally we note that many marketing professionals have an average tenure of about three years. This makes the five-year time frame used for looking at ultra-light buyers particularly

interesting as the time is longer than the likely tenure of many brand managers, which raises very important questions of how a business might manage the conflict between a brand managers focus on the short term typically driven by annual planning cycles which can only be exacerbated by their own tenure, and the importance of ultra-light buyers who may not buy during that tenure! Prior research has emphasised the importance of consistency, a message we can only echo.

6. Limitations and Future Research Priorities

Despite its multiple contributions to theory and practice, this research is not exempt from limitations. The first limitation is that it considered one country (the UK); researching additional countries can enhance the robustness of the empirical generalisation. Future research can collect data from other countries, such as the USA or developing countries with more categories to facilitate cross-cultural comparisons – in line with extant research examining consumer behaviour patterns (Romaniuk, 2013; Mitchell, 2011; Uncles et al., 2010; Bowman and Lele-Pingle, 1997). Secondly, it examines data over five years. The results show that ultra-light buyers are critical when considering brand sales for the longer term (five years), which may be more so if we extend to ten years – exploring longer time frames may be of value. Future research might explore longer periods (e.g., ten years) to increase the scope-boundary condition and generalisability. Thirdly, this research overlooks the costs and profits associated with ultra-light buyers. Given suitable data, future research could extend these findings, particularly regarding the sales value, to a profitability calculation - not be an easy task, however, given data sensitivities.

Another critical limitation of the study is that it focuses on only three brand characteristics (i.e., type, price, and trajectory). We did not examine the interactions between these characteristics, which would be of interest; for example, determining if there are differences between growth for private label and national brands. Future research should also examine other brand characteristics such as brand size (large vs small share brands), channels (digital vs non-digital channel), category

purchase rate, and high vs low promoted categories. Finally, this research did not directly explore how marketing tactics, such as price promotion, advertising, and product or brand expansion, can attract or maintain ultra-light buyers. Hence strategical guidelines to identify the response of ultra-light buyers towards marketing tactics are not covered in this research, though there are some indications that price promotions are not helpful.

7. Conclusion

Our study encompassing 856 brands from 56 categories over a five-year period explored four research questions to better understand ultra-light buyer behaviour. The first question examined cumulative brand penetration. The second research question identified the proportion of ultra-light buyers in the brand's buyer base. The third research question examined the contribution of ultra-light buyers to purchase occasions, sales value, and volume. The final extension question investigated variations in sales contributions across brand characteristics. Overall, this research serves as an academic foundation for further analysis and highlights the importance of very infrequent buyers to the long-term success of their practitioner's brands.

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