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WHAT ARE THE PERCEPTIONS OF PORTUGUESE CONSUMERS TOWARDS LANGUAGE LEARNING APPS AND WHAT ARE THEIR PREFERRED ATTRIBUTES?

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Abstract

The rise of mobile technology has transformed how individuals learn new languages, with language learning (LL) apps offering flexible, user-centered alternatives to traditional methods. This study investigates how Portuguese consumers perceive LL apps, namely Duolingo, Babbel, Falou, and Buddy.ai, identifying preferred features. Marketing research techniques, including perceptual mapping, conjoint analysis, and qualitative interviews, reveal a tradeoff in consumers' minds between effectiveness and enjoyment, along with strong price sensitivity favoring freemium models. Duolingo dominates the market despite user dissatisfaction, driven by strong brand loyalty and platform's convenience. This research proposes launching a new entrant leveraging these insights to compete effectively.

Keywords

Language Learning Apps, Mobile Assisted Language Learning Apps, Consumer Preferences, Customer Retention, Perceptual Maps, Conjoint Analysis, Psychological Associations, Attributes, Market Research, Portuguese Market

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1. Introduction

The widespread adoption of mobile applications has transformed how individuals' approach and experience language learning. With the rise of smartphones and mobile internet access, Language Learning (LL) applications have emerged as a convenient, accessible alternative to traditional language courses (Aguilar, 2021). This shift has reshaped learning from a structured classroom model to a flexible, user-centric experience adaptable to individual schedules and learning preferences (Godwin-Jones, 2011). Globally, in 2023, LL apps were downloaded 231 million times (Business of Apps, 2024), generating approximately 1.36€ billion in revenue - a 28% increase compared to the previous year (Jaatela, 2023). As individuals and organizations increasingly value multilingualism in a globalized economy, this market is projected to continue its upward trend (Jaatela, 2023). The number of users is expected to amount to 1.9 million users by 2029, according to the Statista, (2024a). Specifically, the European LL app market is anticipated to follow this trend and expand from 17.65€ billion in 2024 to 25.31€ billion by 2031, with a compound annual growth rate (CAGR) of 6.2% over the forecast period (Market Pulse Insights, 2024). In Portugal, the online learning application market generated 57.83€ million in revenues in 2023 (Statista, 2024a), and is expected to have an annual growth rate (CAGR 2024-2031) of 15.3%. As Portuguese consumers are increasingly turning to online learning platforms as a flexible and accessible way to acquire new skills and knowledge, the user penetration will be 13.2% in 2024 and is expected to hit 18.8% by 2029 (Statista, 2024a). This expansion is primarily driven by the convenience of obtaining educational content at any time and from any location (Statista, 2024a). Moreover, the ability to study at a personalized pace and customize the learning experience to individual needs and tastes, has also increased the attractiveness of these platforms (Statista, 2024a). The growing demand for specialized courses in Portugal's online learning platforms industry reflects a broader shift within the sector. This shift underscores a heightened recognition of the importance of continuous

education and skill development, driven by the evolving job market (Statista, 2024a).

The market's growth is further influenced by macroeconomic factors, such as the significant digital transformation Portugal has undergone in recent years (Market Pulse Insights, 2024). Rising internet penetration and increased smartphone usage have created an environment that facilitates the widespread adoption of online learning platforms (Market Pulse Insights, 2024). In 2021, Portugal ranked among the top twelve EU countries, with the highest number of people aged 16 to 74 engaging in online courses or using online learning materials (Eurostat, 2022). External factors, particularly the COVID-19 pandemic, have also contributed to a significant increase in participation in online education, with adoption values increasing across all EU member states, Portugal included (Eurostat, 2022).

Despite the growing market for LL applications, limited market research still exists on Portuguese consumers. Thus, this research aims to address this gap by leveraging the unique advantages of cultural familiarity and geographic proximity to the target audience. Focusing on a localized approach allows for a more detailed understanding of consumer behavior, preferences, and challenges, which could otherwise be lost in broader studies from a global perspective. An opportunity arises, to contribute with valuable insights not only to academic discussions but also to practical applications, such as tailoring LL apps to better meet the needs of Portuguese users.

To achieve it, this research will employ marketing research techniques to gain a deeper understanding of how Portuguese consumers perceive the current brands in the market, as well as to identify the key attributes that drive the adoption and long-term retention of these applications. By doing so, this research aims to guide app developers and marketers in tailoring their offerings to better align with local consumer expectations. Based on these objectives, this study aims to answer the following research question:

"How do Portuguese consumers perceive Language Learning Apps, and what are their preferred attributes?"

Beyond addressing the primary research question, this study aims to leverage insights gained from identifying market gaps and understanding localized consumer preferences to propose a new market entrant that could effectively compete with the leading brands.

To address the primary research question, this study begins with a detailed analysis of the contextual background, aimed at defining the scope of the research. Firstly, market boundaries were established to determine the focus of the study, namely between Mobile-Assisted Language Learning (MALL) applications and Language Learning (LL) apps. Secondly, it identified and justified the selection of applications under study, specifically Duolingo, Babbel, Buddy.ai, and Falou. A brief overview of each application and their respective business models were also included. Subsequently, the literature review focused on relevant themes essential for understanding and complementing this research. It began with a review of digital business models, followed by subscription models, with emphasis on freemium models, which have seen widespread adoption in the LL application market. The review then examined insights into the consumer journey, addressing concepts of attraction and retention and analyzing how these concepts are reflected in the dynamics of the market. Additionally, theoretical frameworks on the adoption of new technologies were discussed to provide a comprehensive understanding of how these theories can be applied to these apps, especially in terms of consumer perceptions and preferences.

Moreover, preliminary interviews were conducted with current and former users, as well as industry experts, to gather qualitative insights into user experience, reasons for abandonment, and overall challenges and opportunities for brands in this market. Perceptual maps were subsequently employed to analyze the how consumers perceive these apps regarding a set of defined psychological associations. This was achieved through an initial survey in which participants were

asked to rate each app based on various attributes. The collected data was then analyzed using SPSS software to generate multidimensional maps, providing a visual representation of the apps' relative positioning within the market. To gain insights into the trade-offs consumers make between various features and attributes and to better understand their preferences, a conjoint analysis was conducted. A second survey was employed, utilizing the *Conjoint.ly* platform for data collection and the analysis. Finally, based on the conclusions drawn from the assessments and the insights derived from the literature review; to answer the primary research question, a comprehensive set of strategic recommendations was developed. These recommendations are intended to offer practical and implementable guidance for managers in the LL app Portuguese market to enhance user engagement and long-term retention.

This research reveals, through the analysis of the perceptual maps, that Portuguese consumers perceive a tradeoff between *Effectiveness* and *Enjoyment* in LL applications. While Duolingo is associated with stronger positive emotions due to its highly gamified features, it is also seen as lacking practical utility. In contrast, Babbel, which emphasizes a more structured and rigorous approach, is perceived as offering greater practical utility but lower enjoyment. This suggests an opportunity for a new market entrants to achieve harmony between these two factors, providing both effectiveness and enjoyment to set themselves apart more efficiently. Furthermore, the research identifies a misalignment between brand strategies and consumer perceptions, with brands such as Falou and Babbel failing to effectively communicate their approaches to consumers, resulting in less successful outcomes. The conjoint analysis highlighted Portuguese consumers' price sensitivity, with the monthly fee emerging as a decisive factor in app choice, despite the financial flexibility of some segments, free app versions are overwhelmingly preferred, even if ad supported.

The findings underscore the value of adopting a freemium model, which aligns with consumer

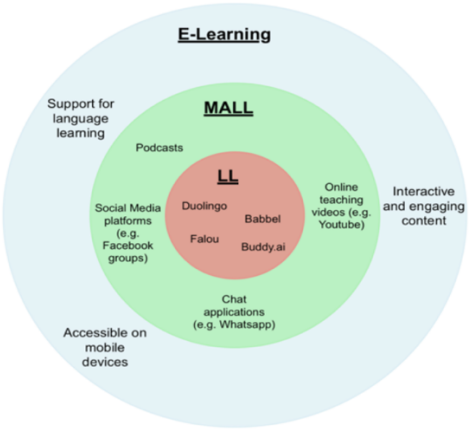
preferences for cost-effective solutions while offering opportunities for brands to upsell premium features.

Furthermore, this research underscores Duolingo's dominance in the Portuguese market despite consumer dissatisfaction with its current offerings and effectiveness in language learning. Findings reveal that users remain hesitant to switch to alternative apps, suggesting that Duolingo's brand loyalty, convenience, or familiarity outweighs their dissatisfaction. Based on the insights drawn from the research, this study proposes the introduction of a new competitor in the Portuguese LL app market, MARLI, to address unmet consumer needs and establish a unique position in the competitive landscape. To achieve this, a branding strategy was developed, supported by a marketing strategy using a no-code platform to generate a segmentation model, followed by a targeted communication plan.

2. Contextual Background

To effectively define the scope of this research, it is essential to understand the differences between the three primary market segments within digital language learning applications. These segments consist of Electronic Learning (E-learning), Mobile- Assisted Language Learning (MALL) applications, and generic Language Learning (LL) applications (*Image 1*). For this study, only the LL applications will be studied, as they are specifically designed for structured language acquisition, enhancing their relevance for studying consumer preferences and perceptions.

Image 1 – Difference between MALL and LL applications



This research will focus on the four most downloaded language learning apps in Portugal in 2023, according to Statista, (2024b), namely Duolingo (642,374 downloads), Falou (81,063 downloads), Buddy.ai (64,511 downloads), and Babbel (61,500 downloads). Together they account to 76.2% of the total downloads in 2023 in Portugal, thus highlighting their dominant role in the market (Statista, 2024b).

Duolingo engages users with gamified elements like streaks and rewards, effectively building vocabulary but lacking in-depth grammar instruction, which affects long-term retention (Duolingo, 2020). Babbel offers structured, expert-designed lessons with a strong focus on real-life conversations and grammar but requires a paid subscription, (Babbel, 2024). Falou prioritizes speaking practice and cultural insights, making it immersive and engaging for users seeking conversational skills, (Falou, 2024). Buddy.ai, an AI-powered tutor for children aged 4–10, uses voice recognition and interactive conversations to teach English in a playful way but is not designed for adult learners, (Buddy.ai, 2024).

3. Literature Review

3.1. Market Overview

The LL app market is rising on account of several global trends and technological advances that are pushing its growth (Jiang et al., 2020). Globalization and migration have made multilingualism

an important skill across several sectors, as individuals engage in international trade, travel, or seek to enhance their competitiveness in global job markets (Jiang et al., 2020). Therefore, language proficiency has become essential, and creating language learning apps is pivotal for accessible, flexible, and affordable options compared to traditional language instruction (Jiang et al., 2020). This trend is further supported by the rising need for digital education, as younger demographics, particularly those under eighteen, use these apps to supplement traditional learning (Jiang et al., 2020). In 2021, 27% of people aged 16 to 74 in the EU reported that they did an online course or used online learning material in the last three months before the survey, a 4 percentage points (pp) increase compared with 23% in 2020 (Eurostat, 2022). Thus, the growing interest in studying abroad and enhancing employability also contributes to the surge in usage among individuals aged 18-30, particularly in the Portuguese market (Hade et al., 2024a).

Gamification is another prominent trend in LL apps, where platforms such as Duolingo incorporate points, badges, and leaderboards to boost user engagement (Duolingo, 2023). Although gamification is effective in maintaining short-term motivation, sustaining long-term engagement remains a challenge (Powers, 2019). Babbel, for example, emphasizes conversational practice but lacks real-time feedback from fluent speakers, which limits the capacity to develop conversational fluency (Live Fluent, 2023). Research shows that while LL apps facilitate accessible learning, not only do they often struggle to retain users long-term as motivation declines once initial goals are met but also face difficulties in providing full linguistic competency (Powers, 2019). For example, Jiang et al. (2020) tracked Duolingo users and found measurable improvements in vocabulary and grammar. However, the app proved insufficient as a stand-alone learning tool, with users often struggling to attain conversational fluency comparable to traditional methods. Such studies suggest that, while LL apps offer valuable support for language acquisition, they cannot fully replace immersive and structured instruction (Jiang et al., 2020).

Globally, LL app market dynamics vary by region due to differences in linguistic diversity, educational needs, and economic factors. By 2022, the online LL market reached a valuation of 4.72€ billion, with projections indicating continued strong growth (Powers, 2019). Outside Europe, particularly in Asia and Latin America, demand centers on English, essential for accessing global education and job opportunities. In regions such as China, India, Brazil, and Mexico, high-quality language instruction is limited, making LL apps a more vital resource, (Hade et al., 2024b). Consequently, apps in these markets focus heavily on English language features, often including local language support and regional dialect training (Jin et al., 2020).

European users commonly pursue languages including English, French, German, and Spanish, with an emphasis on languages useful in business, tourism, and cultural integration (European Commission, n.d.). Apps targeting European users frequently prioritize European languages and skills related to cross-border interactions (Arjen et al., 2022). In such regions, major players, such as Duolingo and Babbel, dominate the market, while in non-European markets there is a rise of local competitors specializing in English as a Second Language instruction, tailored to meet the specific needs of these regions (Jin et al., 2020)

In Portugal, the adoption of LL apps aligns with broader European trends, emphasizing multilingualism as a cornerstone of education and professional development (De Carvalho & Cardoso, 2003). The Portuguese LL app market is projected to grow at a compound annual growth rate (CAGR) of 15.3% from 2024 to 2031, reaching a market size of €19.47 million in 2024 (Dharmadhikari, 2024). By 2029, the market is expected to include 1.9 million users, primarily aged 18 to 54 (Statista, 2024a).

This expansion is fueled by the increasing demand for mobile learning solutions, which leverage advances in AI, natural language processing, and voice recognition technologies (Powers, 2019). These innovations enable personalized learning experiences that adapt to individual progress,

enhancing learning speed and content retention (Jin et al., 2020). For instance, AI assesses user strengths and weaknesses to customize lessons, while voice recognition facilitates real-time pronunciation practice, making language acquisition more effective and engaging (Jin et al., 2020). The prominence of Portugal as a tourist destination also drives demand for language skills in the hospitality sector. The integration of LL applications into this sector offers substantial opportunities to enhance service quality and customer satisfaction while also broadening career opportunities for those working in the industry (Jaatela, 2023).

Furthermore, affordability, scalability, and accessibility are key factors for the self-learning platforms dominance in Portugal (Research and Markets, 2024). Customization features, such as real-time feedback and AI-driven learning paths, further boost user engagement and satisfaction. The digitalization of educational content, along with the growing emphasis on English proficiency as a key professional skill, has significantly contributed to market growth (Research and Markets, 2024). In Portugal, this trend is further supported by the education system's focus on multilingualism, particularly through mandatory English instruction in primary and secondary schools. As a result, language learning apps are increasingly used as supplementary tools to enhance classroom learning, aligning with the broader shift toward digitalized educational content (Vieira et al., 2014). Younger demographics, including those under 18, increasingly turn to LL apps as educational supplements, while individuals aged 18-30 use these tools to enhance employability and pursue international education opportunities (Hade et al., 2024a).

Overall, the Portuguese LL app market is poised for continued growth, driven by technological advancements in AI, natural language processing, and machine learning, which enable highly personalized learning experiences. Rising global demand for multilingual skills, crucial in today’s interconnected world, further supports this trend. Portugal’s rich linguistic heritage, its growing role as a hub for tourism and international business, reinforce its position as a key player in the

global LL app market (Remoaldo et al., 2014).

3.2. Digital Business Models

A business model defines how a company creates and delivers value to its customers and subsequently converts the received payments into profit (Verhoef & Bijmolt, 2019). Although its concept has been extensively studied, resulting in various definitions and conceptualizations, there is a broad consensus that a business model articulates the logic behind how a firm creates, delivers, and captures value (Li, 2020). According to Al-Debi, El-Haddadeh, and Avison (2008), the innovation of business models has a transformative effect on the entire organization and its methods of conducting business.

Business Model Innovation can be seen as the change in the configuration of the entire business model of an organization or individual elements of it, either as a reaction to challenges or opportunities in the environment of the operating business or as an enabler for diversification and innovation. This way, it may be understood as the "conceptualization and implementation of new business models" through the processes of exploration, adjustment, improvement, redesign, revision, creation, development, adoption, and transformation (Geissdoerfer, 2018).

Van Tonder et al. (2020) highlighted how the emergence of the Fourth Industrial Revolution is making different organizations adapt their business models to the use of digitalization, through digital transformation. Digital transformation has deeply influenced business models across industries by shifting how companies structure and conduct their operations (Vaska et al., 2021). Therefore, digital technologies have facilitated the emergence of digital business models. These models use technological innovations to create and capture value for stakeholders, thereby redefining traditional approaches to business (Vaska et al., 2021). In this sense, digital transformation offers organizations new opportunities to generate value by leveraging digital technologies to refine and expand their product and service portfolios as noted by Vaska et al.

(2021). Furthermore, digital technologies enable a deeper understanding of customer needs, allowing firms to offer highly personalized value propositions (Verhoef & Bijmolt, 2019). The process of value creation has undergone significant changes due to digital transformation, with the influx of new market entrants redefining delivery mechanisms and leading to a reconsideration of the roles businesses play within their respective industries (Vaska et al., 2021).

In the context of LL applications, the integration of AI serves as a prominent example of digital business model innovation. AI technology not only enhances the personalization of learning experiences but also reshapes the way value is created and delivered to users. Through features such as chatbots, translation tools, and intelligent tutoring systems, AI enables LL apps to adapt content dynamically to individual learners' needs, providing immediate feedback and fostering opportunities for self-assessment. Generative AI tools, similar to ChatGPT, further expand the potential of these applications by simulating natural, human-like interactions that enhance user engagement (Pikhart, 2020).

Moreover, gamification techniques—embedded within these platforms—create interactive and motivating experiences, which support users in achieving their language goals (Pikhart, 2020). These advancements reflect how digital technologies are not merely tools but integral enablers for LL apps to deliver highly personalized and engaging value propositions. This aligns with the broader trend in digital transformation, where technology facilitates innovation in value delivery mechanisms, driving shifts in customer expectations and industry dynamics (Vaska et al., 2021). By incorporating AI-driven innovations, LL apps exemplify the transformative effects of digitalization on traditional educational models, revolutionizing how consumers acquire new languages and fostering a deeper alignment between user needs and service delivery.

3.2.1. Subscription-Based Models

In light of increasing digitalization, business models have undergone significant changes, primarily

shifting from revenue structures reliant on advertising to subscription-based models. This transformation involves monetizing content that was once freely accessible, a practice that traces its origins to traditional services such as newspaper and milk deliveries (Klopčič, 2020).

Nevertheless, in the contemporary landscape, the rapid growth of subscription-based models, driven by their association with digital services, has introduced significant complexity in their implementation and management. Recent developments in consumer data collection, modern infrastructure and payment services have emerged as key solutions to address this complexity (Lindström, Vishkaei & De Giovanni, 2024).

The advantages of subscription-based models extend beyond the businesses that adopt them, which enjoy more stable and secure revenue streams. For users, in addition to gaining access to a broader range of content, they benefit from data collection that facilitates the analysis of preferences, consumer behavior, and feedback. Ultimately, leveraging this data enhances customer satisfaction, fostering increased loyalty and a stronger, more enduring relationship between the user and the business (Kelly, 2022).

In the context of online learning, although recent attention has been focused on subscription-based models, it was the rapid growth of learning platforms, facilitated by increased internet connectivity, that enabled the widespread global shift to these models (Stan & Dobrota, 2022). Language learning apps, such as Duolingo, also participated in this transition. When Duolingo launched in 2011, it adopted a fully free approach to attract a large user base. Over time, however, it introduced monetization strategies, including premium subscriptions and in-app purchases, while still offering free content to maintain high user acquisition rates (Loewen et al., 2019).

The shift from free content to monetized models faced critical challenges, as retaining existing users, who were accustomed to free access, proved essential but was adversely impacted by the shift. This way, the transition was mostly done by the implementation of advertise-based models,

from which firms can generate revenue from advertisers based on the traffic created by free users. In these scenarios, apps offer two versions of their product: a free, ad-supported version, at the cost of degraded user experience due to ad disruptions, and a premium paid version, where users pay subscription prices to avoid the ads or access to otherwise restricted content (premium offerings) (Pauwels & Weiss, 2008; Karasimos, 2022).

Upon the scenario of the two possible offerings, users elaborate their decisions based on utility and trade-offs, considering that paid versions provide the highest utility at a monetary cost, free versions provide moderate utility, and the termination of use of the app yields no utility (Pauwels & Weiss, 2008). Pauwels and Weiss (2008) note that the availability of limited free options decreases the perceived value of subscribing, while churn increases upon the possibility of having free content, as *unsubscription* rates increase close to monthly billing cycles, raising obstacles for subscription models.

According to Appel (2020), app monetization can be achieved either by selling advertising space within a free version of the app or by implementing a paid version or in-app purchase strategy that offers premium features. Given that the greatest challenge for app creators is maintaining profitability, selecting the appropriate business strategy and marketing mix becomes increasingly critical. In this context, the revenue streams of many mobile-based platforms began to diversify, particularly with the introduction of the freemium model in 2006. This model has been successful due to its hybrid nature, which enables product diversification by offering a basic version of the product or service at no cost, complemented by paid additional features or items available (Pujol, 2010). Its structure allowed it to become, according to the New York Times, one of the most prevalent business models adopted by Web Start-Ups, as advertisement may not be sufficient and/or sustainable as an exclusive stream of revenue (Miller, 2009).

LL applications quickly embraced this business model following their introduction to the market,

demonstrating that the free component was essential for encouraging users to try the app (Jaatela, 2023). Most LL apps adopt a feature differentiation strategy, offering a basic set of functionalities for free while reserving advanced features for premium-paying users. In order to succeed, this approach requires carefully balancing the attraction of new learners with incentivizing upgrades to premium tiers (Pujol, 2010). Examples of apps employing this strategy include Duolingo and Falou (Jaatela, 2023).

3.2.2. The effects of subscription-based models in Language Learning

Subscription models in online learning, where LL apps reside, offer several advantages, ranging from convenience to flexibility, to diverse content, to relatively low cost. Nevertheless, they still face high dropout rates impacting negatively both pedagogical outcomes and financial goals (Stan & Dobrota, 2022). According to Coussement et al. (2020), predictive models can be leveraged to analyze and anticipate dropout reasons in subscription-based contexts. By identifying the factors that drive user retention, LL apps can foster stronger consumer relationships, a critical element for subscription model growth. Additionally, distinguishing between subscribers - paying users with a billing relationship - and users - non-paying individuals - is essential for developing strategies to convert users into subscribers and reduce churn (Stan & Dobrota, 2022).

On the other hand, the integration of gamification into LL apps has the potential to reshape these dynamics. Gamification can be seen as the introduction of game design and mechanisms to increase participation, engagement, loyalty, and competition in non-game contexts, approximating the two realities (Prathyusha, 2020). In this context, Osipov et al. (2015) found that implementing monetized systems in game-like scenarios could lead to greater retention, not by the amount spent, but by unlocking features through the usage and the time spent with the software. By investing time and money in a piece of software, users feel a greater connection and an expectation to spend more time and money on it (Svensson, 2022).

However, findings suggest that as subscription models in LL apps often restrict access to certain features, they might create frustration for non-subscribers. For instance, the gamification incentive "unlimited hearts" in the Duolingo app, encourages users to upgrade by allowing them to bypass penalties. However, it may also reduce engagement among non-subscribers who face wait times and usage restrictions. Moreover, even if these models promote retention by boosting progress, they may also induce stress or diminish enjoyment due to frequent reminders of locked features. Even in apps without explicit monetization, users familiar with such systems might feel constrained, expecting paywalls or other limitations (Svensson, 2022).

3.3. Customer Journey: from Attraction to Retention

Having established a clear understanding of the business models prevalent in the LL market—particularly subscription-based approaches with an emphasis on freemium models—it is equally important to examine the customer journey and explore how these models influence the market's ability to attract and retain consumers. Reaching customers on occasions that have the greatest influence on their decisions is marketing's primary objective (Court et al., 2009). According to Shavitt and Barnes (2019), consumer journeys comprehend the steps customers take to build relationships with brands or have fulfilling purchasing experiences. Customer experience can be also perceived as a multidimensional approach focusing on how a customer reacts to a company's products on all levels —cognitively, emotionally, behaviorally, sensually, and socially— throughout their entire purchasing journey, across all stages and touch points (Lemon & Verhoef, 2016).

The decision-making process is a circular journey, consisting of a dynamic and interactive process of three phases: pre-purchase (including search), purchase, and post-purchase (Court et al., 2009; Lemon & Verhoef, 2016). This procedure considers external factors and prior experiences, including past purchases, where customers encounter touch points at every level, only a portion of

which is within the company's control (Lemon & Verhoef, 2016).

Before the acquisition, in the pre-purchase stage, consumers explore different brands, the categories, and assess the environment (Lemon & Verhoef, 2016). This stage involves recognizing their needs and searching for options while considering their choices before committing to the transaction (Lemon & Verhoef, 2016). It is also known as the initial consideration set, during which consumers assess various brands according to their views, exposure to touchpoints, and active evaluation, in which they add or eliminate brands based on their preferences (Court et al., 2009). The second stage, purchase, is characterized by consumer interactions with the brand and its environment during the actual purchase process, covering actions including the choice, ordering process, and payment (Lemon & Verhoef, 2016). The last stage, post-purchase, involving behaviors such as continued engagement with the brand or seeking support or new services, is defined as how consumers interact with the brand and its environment after completing a purchase (Lemon & Verhoef, 2016). Following the purchase, customers develop expectations based on past experiences to guide their upcoming decision-making process (Court et al., 2009).

People's perceptions of brands are shaped daily by touchpoints including news articles, commercials, word-of-mouth, and product experiences (Court et al., 2009). Therefore, touchpoints become crucial in a consumer journey, happening at any moment between the customers and the brand (Stein & Ramaseshan, 2016). Within the customer journey, several touchpoints can be identified and categorized into either brand-owned, partner-owned, customer-owned, or social/external. The strength or significance of each touchpoint may vary at each stage, depending on the type of product or service being offered or the customer's journey (Lemon & Verhoef, 2016). Brand-owned touchpoints are interactions managed and controlled by the firm, playing a key role in influencing sales and market share. It includes advertising, websites, loyalty programs, and other elements related to product features and packaging. Partner-owned touchpoints reflect shared

influence over the customer experience, with interactions controlled by the firm and its partners (marketing agencies, distributors, or loyalty program collaborators). Customer-owned touchpoints are actions outside of the brands' control driven by the customer, such as personal needs assessment in the prepurchase phase or consumption behaviors post-purchase. Social/external touchpoints affect the customer journey through all stages, involving the influence of external factors including peers, independent sources, and environmental factors (Lemon & Verhoef, 2016).

In the context of this journey, customers aim to maximize value while minimizing search costs, relying on limited information to guide their decision-making process. This journey involves comparing and verifying product attributes—benefits, costs, and features—against their expectations (Long, 2010). These expectations, shaped by their needs and affordability, form the foundation of their product perceptions. Consumers assess products based on internal factors, such as features, and external cues, including price and advertising, with external factors taking precedence when internal information is scarce (Long, 2010). The growing information asymmetry has led customers to place greater trust in effective brand commitments, which help reduce perceived risks and influence expectations and brand comparisons (Long, 2010). Ultimately, brand choice is determined by how closely a brand's commitment aligns with customer expectations (Long, 2010). Effective commitments not only differentiate products but also increase customer attraction, influencing purchasing decisions even when immediate conversions don't occur (Long, 2010).

According to Paul and Nandy (2023), reaching high rates of user acquisition and retention is challenging, as it entails a multifaceted strategy that includes market knowledge, consumer engagement and attraction skills, and delivering an engaging user experience that encourages loyalty. Alomair and Hammami (2019) demonstrate that gamification in MALL apps, a market where LL apps belong, promotes captivating experiences that appeal to customers' goals,

accomplishments, and self-expression, boosting customer acquisition. Furthermore, Paul and Nandy (2023) highlight partnerships as a way for brands to acquire new consumers. Partnerships have proven to be successful in increasing brand awareness while attracting new consumers (Paul & Nandy, 2023). By combining alliances with different brands, benefits can be extracted (Paul & Nandy, 2023). Many LL apps have adopted this strategy, with Duolingo being an example with a partnership with Sony Music, bringing popular music to its Music course (Duolingo, 2024). Additionally, Bekkelund (2011) highlights the effectiveness of the freemium model in attracting consumers. By providing free access to basic functions, the freemium model takes advantage of its low entry barriers to encourage new customers to sample the service without immediate financial pressure (Bekkelund, 2011). This strategy encourages word-of-mouth as free users recommend the product within their networks, resulting in an organic and cost-effective method of customer acquisition (Bekkelund, 2011).

The journey is a continuous circle since the post-purchase experience influences their viewpoint for each subsequent choice in the category (Court et al., 2009). Ascarza et al. (2018) define customer retention as the continued engagement of a consumer with a brand, regardless of contracts or transaction types. Dick and Basu (1997) simplify this concept, highlighting that a customer's intention to repurchase signals their loyalty. This loyalty is shaped by situational factors and societal norms, alongside motivational, perceptual, and behavioral influences (Dick & Basu, 1997). Loyalty's antecedents fall into three categories: cognitive, affective, and conative. Cognitive antecedents include accessibility, confidence, centrality (value alignment), and clarity of attitudes; Affective factors involve emotions, mood, satisfaction, and primary affect, while conative antecedents encompass behavioral inclinations influenced by switching costs, sunk costs, and future expectations (Dick & Basu, 1997). Ultimately loyalty yields significant outcomes, including reduced search motivation for alternatives, resistance to competitor persuasion, and positive word-

of-mouth recommendations, having as moderators, social norms and situational influences that can either strengthen or weaken the connection between attitudes and behaviors (Dick & Basu, 1997). Regarding user retention strategies, Paul and Nandy (2023) highlight several that apply to LL apps: onboarding experience, personalization, push notifications, and gamification. LL apps have come up with designing user-friendly, value-driven onboarding experiences, where the app's value proposition is shown from the start, immersing consumers into an interactive learning journey (Paul & Nandy, 2023). A study done by Al-Razgan and Alotaibi (2019) about mobile apps, a market in which LL apps insert themselves, has revealed that personalization features enabled participants to be highly motivated and engaged, as students have the freedom to study and their own pace and, in their style, increasing customer retention. Push notifications can enhance consumer engagement and loyalty by having the power to reach and grab consumer's attention. However, this needs to be managed carefully, since the overuse of push notifications on mobile learning apps can have the opposite effect (Pham et al., 2016). Supported by Paul and Nandy (2023) and further reinforced by the study done by Alvi (2022), it was highlighted how gamification features are key in fostering brand engagement, promoting feelings of competence, self-sufficiency, and progression, ultimately leading consumers to trust and commit to brands, forming the basis for long-term consumer loyalty. Finally, Bekkelund (2011) highlights that the freemium model sustains user interest by offering indefinite free access to valuable features, fostering loyalty and long-term engagement. This approach not only converts loyal users to paid tiers when premium features are needed but also leverages network effects to enhance value as the user base grows, particularly on collaborative platforms including LinkedIn or Skype, creating a self-reinforcing cycle of growth (Bekkelund, 2011).

3.4. Brand image effects on consumer behavior and purchasing process

In the competitive landscape of digital LL apps, brand image plays a pivotal role in shaping consumer perceptions and driving purchasing decisions, encompassing a combination of emotional, functional, and cultural associations that consumers form through their interactions with a brand, its marketing, and user experiences (Zhang, 2015). For LL apps such as Duolingo, Babbel, Buddy.ai, and Falou, these perceptions influence critical factors including user acquisition, engagement, and retention (Zhang, 2015).

Brand image refers to the perception consumers hold about a brand, shaped by their experiences, marketing communication, word-of-mouth, and the values the brand represents (Ayaz, 2020). For LL apps, this includes aspects such as the app's perceived quality, user experience, association with success in language learning, or alignment with cultural and educational values. A well-established brand image enhances trust, which is crucial for LL apps requiring long-term engagement and financial commitment, such as subscriptions (Malik et al., 2013).

A compelling brand image not only differentiates an app in a saturated market but also fosters trust and loyalty among its users (Ayaz, 2020). For example, Duolingo's gamified, user-friendly approach appeals to casual learners and creates a perception of LL as fun and accessible (OSUM, 2024). These distinct brand identities cater to different consumer needs and preferences, thereby guiding their decision-making processes, which include recognizing a need, gathering information, evaluating alternatives, making a purchase decision, and reflecting on the outcome post-purchase (University of Massachusetts Dartmouth, n.d.). For example, when selecting a LL app, users might consider factors including a recognized brand reputation, useful features, user reviews, and price before committing to a subscription.

Consumer behavior refers to the study of how individuals, groups, or organizations select, purchase, use, and dispose of goods, services, or ideas to satisfy their needs and desires (Bray, J. P., 2008). It examines the decision-making processes, motivations, and influences, such as cultural,

social, psychological, and economic factors, that drive these actions (Bray, J. P., 2008). Understanding consumer behavior helps businesses anticipate how customers are likely to interact with their products, services, or marketing strategies (Bray, J. P., 2008), being crucial for creating effective marketing strategies, improving user experience, and building brand loyalty (Bray, J. P., 2008). In a competitive market such as Portugal, where multiple LL apps exist, a distinct brand image can help an application stand out and appeal to niche audiences (Zhang, 2015).

Additionally, many LL apps use gamification to create a playful and engaging brand image, appealing to casual learners and younger audiences, and fostering regular use and retention (OSUM, 2024). For instance, the use of progress streaks and in-app rewards builds a perception of learning as fun and accessible, encouraging users to stay engaged and consider premium versions of the offering (OSUM, 2024). Also, it is vital to consider that LL apps excel in leveraging social-media platforms similar to TikTok and Instagram to connect with Gen Z and millennials, through visually appealing and relatable content, creating videos and interactive posts to ensure users are more likely to recognize and remember the app (Febrian et al., 2022). These social media platforms allow apps to target specific demographics, ensuring their marketing efforts reach potential users effectively (Febrian et al., 2022).

Overall, one of the main objectives of the marketing strategies in the LL app market is to create a lasting brand image in the minds of consumers, driving both app downloads and subscription purchases. This process not only boosts revenue and market share but also builds long-term brand equity (Zhang, 2015). In the highly competitive environment of digital LL, brand image is essential in shaping consumer behavior. Successful apps must foster emotional and symbolic connections with their users to stand out, as brands that resonate emotionally with consumers are more likely to thrive in the contemporary market (Ayaz, 2020).

3.5. Theoretical Frameworks

To comprehensively address how Portuguese consumers perceive language learning applications, it is crucial to establish a theoretical framework. Over the years, models and theories of technology acceptance and adoption have been developed to explain and predict user behavior when interacting with new technologies. These frameworks enable researchers to explore the reasons behind technology acceptance from various perspectives, adapting to the evolution of technologies over time (Yadegari et al., 2024). According to Yadegari et al. (2024), this is especially important in rapidly evolving fields similar to mobile-assisted learning, where consumer perceptions and usage patterns are shaped by both intrinsic factors, such as perceived usefulness, and extrinsic ones, including social influence and accessibility. Therefore, combining multiple theoretical models often provides a more comprehensive understanding of how users adopt and engage with new technologies, producing more robust and applicable findings across diverse technology contexts, particularly when a single model is insufficient for capturing the complexity of technology used in several environments. These subsequent sections will be analyzed under the lens of MALL apps, given the higher range of studies in this field, notwithstanding, all findings will be applicable given that LL apps fall under the scope of the broader dimension of MALL apps.

3.5.1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) has been critical in innovation adoption related to emerging technologies (Koul & Eydgahi, 2017). It was introduced by Davis (1986) and builds on the Theory of Reasoned Action while focusing on understanding why users accept or reject technology. According to Marangunić and Granić (2015), TAM's strength lies in its ability to predict user acceptance through a simplified structure focusing on perceived usefulness and ease of use. This framework not only applies to initial adoption but also offers insights into users' continued interaction with mobile learning platforms. Ünal and Güngör (2021) demonstrated that

the two core beliefs of TAM - perceived usefulness (defined as the degree to which a user believes the technology will enhance their performance) and perceived ease of use (which reflects how effortless the technology is perceived to be) - significantly influence university students' intentions to continue using MALL applications, such as Duolingo. This finding underscore TAM's relevance for technology adoption and explains users' sustained engagement with language learning apps throughout the years. Recent studies have emphasized the importance of intrinsic motivation in enhancing the perceived ease of use and perceived usefulness of mobile applications (Hsu & Lin, 2022). The authors found that learners with higher intrinsic motivation were more likely to perceive mobile-assisted learning as easier and more useful, leading to sustained engagement.

Although the TAM has been widely adopted for its simplicity and predictive power, it has faced criticism for oversimplifying the complexity of human behavior. Bagozzi (2007) argues that TAM, by focusing only on two main factors, fails to capture the full range of cognitive, emotional, and social influences that affect technology adoption. For instance, TAM does not adequately address the role of emotions, such as anxiety or excitement, which are often critical in determining user acceptance, especially in educational contexts. Additionally, Bhattacherjee (2007) highlights the model's emphasis on individual decision-making, overlooking the social interactions and group dynamics that frequently play a role in technology use. This limitation is particularly relevant in MALL, where peer influence and collaborative learning are essential components of the learning process.

3.5.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) responds to this call by combining elements from several models. Leveraging on TAM, UTAUT was first defined by Venkatesh et al. (2003) and identifies four core constructs - performance expectancy, effort expectancy, social influence, and facilitating conditions - that significantly affect users' behavioral

intention towards the use of technology. The UTAUT model consists of four key constructs that impact either behavioral intention (BI) or actual usage behavior (USE): performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). Moreover, the empirical validation of UTAUT demonstrates its superior predictive power compared to individual models, establishing it as a strong framework for examining technology acceptance in various contexts, including MALL (Venkatesh et al., 2003). Recent research by García Botero et al. (2018) further exemplifies UTAUT's application in the realm of MALL, among higher education students, illustrating how the constructs of performance expectancy and effort expectancy directly influence students' acceptance of mobile learning technologies. Their findings highlight the importance of social influence in shaping users' perceptions and behaviors, emphasizing that peer and institutional support are critical for successful implementation. This research not only reinforces the applicability of UTAUT in educational settings but also emphasizes its relevance in understanding the acceptance of mobile learning technologies. In comparison to TAM, UTAUT provides a more comprehensive framework by incorporating external factors, making it more suitable for analyzing the complex, multi-dimensional elements that influence the adoption and continuance of LL applications (García Botero et al., 2018).

3.5.3. Expectation-Confirmation Model (ECM)

While TAM and UTAUT focus on the factors driving initial acceptance of technology, the Expectation-Confirmation Model (ECM), initially introduced by Oliver (1980) and adapted for technology use by Bhattacherjee (2001), examines post-adoption behavior. The model serves as a theoretical framework designed to understand user satisfaction and its impact on the continuance of technology usage. Elaborating on earlier models of consumer behavior, ECM suggests that users form initial expectations regarding the performance of a system before adoption (Bhattacherjee, 2001). Upon interacting with the system, users assess their perceived performance against these

established expectations, which can lead to experiences of confirmation or disconfirmation (Bhattacherjee, 2001).

As technology and user experiences evolve, so do users' beliefs and attitudes towards the technology. Bhattacherjee and Premkumar (2004) improve upon the ECM by exploring how these attitudes are dynamic and influenced by ongoing interactions with technology. In addition to its foundational elements, ECM has been widely applied across various fields, including e-learning and mobile applications, demonstrating its versatility in addressing the complexities of user acceptance and retention. The findings of Tam, Santos, and Oliveira (2018) align with Bhattacherjee's ECM, as they emphasize the importance of post-adoption experiences such as satisfaction and perceived performance, confirming or disconfirming initial expectations. For instance, if a user finds a language learning app easy to use and meets or exceeds performance expectations, their satisfaction will likely result in continued use.

In the context of MALL, ECM emphasizes that when users' initial expectations are confirmed, it leads to satisfaction, which is a key determinant of their intention to continue using the technology (Ünal & Güngör, 2021). Higher satisfaction levels are achieved when students' expectations are met, which, in turn, increases their perception of the system's usefulness (Ifinedo, 2018). Other studies confirm a strong relationship between perceived usefulness and satisfaction, reinforcing that learners who find mobile applications useful are more likely to remain satisfied with MALL applications (Bhattacherjee, 2001). This model is particularly relevant for examining how Portuguese consumers evaluate their experiences post-adoption in mobile learning applications. Are their initial expectations of learning outcomes and ease of use confirmed over time? Do these expectations shape their continued engagement with the app? In the past, research applying ECM in mobile learning contexts, such as that by Oghuma et al. (2016), shows that user satisfaction plays a crucial role in sustained usage, making ECM an essential component of this study.

Despite their strengths, all three models have limitations that may require the incorporation of additional variables for a more comprehensive framework. TAM and UTAUT focus primarily on pre-adoption behavior, offering limited insight into the long-term continuance of technology use (Tam, Santos, & Oliveira, 2018). On the contrary, ECM concentrates on post-adoption behavior but lacks focus on external factors (Brown et al., 2008). External social influence, as recognized in models such as UTAUT, can heavily impact user behavior, especially in group settings or within communities where peer opinions shape technology adoption decisions. Moreover, while ECM focuses heavily on rational evaluations of user satisfaction, it does not consider the influence of emotional factors or habits, which UTAUT's extended version (UTAUT2) introduces (Brown et al., 2008). According to Venkatesh et al. (2012), the habit can serve as a powerful predictor of continued technology use, particularly for apps that users incorporate into their daily routines. This suggests that future adaptations of ECM should account for habitual behavior to reflect the real-world usage patterns of language learning apps more accurately. Overall, the literature on technology adoption models provides valuable insights into how users interact with and adopt mobile-assisted language learning technologies, a sector where LL apps belong to. Each of the three models - Technology Acceptance Model, Unified Theory of Acceptance and Use of Technology, and Expectation Confirmation Model - offers distinct perspectives suited for different stages of the technology adoption process. While TAM focuses on perceived ease of use and usefulness (Davis, 1989), making it particularly effective for predicting initial acceptance, the UTAUT build on this by incorporating factors such as social influence and facilitating conditions, thus providing a more comprehensive view of technology adoption in social contexts (Venkatesh et al., 2003). Lastly, the ECM is essential for understanding post-adoption behavior, focusing on user satisfaction and continuance intention (Bhattacherjee, 2001). Together, these models provide a well-rounded framework for analyzing how Portuguese consumers perceive and engage with

language learning apps.

4. Preliminary Interviews

4.1. Methodology

Ten preliminary interviews were conducted with current and former users and industry experts to establish a foundation for the analysis of LL applications. The main focus was to understand consumer perceptions that influence the adoption and ongoing use of the applications and learn from experts what the most successful language learning strategies are.

Comprehensive research was conducted to better understand the advantages and reasons for adopting LL applications before choosing the appropriate interview questions for each group. Steel (2012) highlighted key motivations such as convenience, portability, and personalization, which offer consumers flexibility and a more immersive learning experience, while gamification features enhance language acquisition. Faudy and Sadikin (2023) focused on experts' perspectives, recognizing LL's effectiveness in language skills development but highlighting concerns including distractions. Experts valued LL's portability, time efficiency, and ability to foster engagement, collaboration, and independent learning (Faudy & Sadikin 2023). These insights were then used to construct a script for the interviews (*Appendix, Table 1 and 2*). Each interview was conducted online via teams and lasted about thirty to forty minutes each. Additionally, the individuals selected for the interviews were approached through the authors' personal and professional networks.

The seven users' interviews explored their usage patterns, factors that led to adopting or discontinuing the apps, and the main characteristics affecting their decisions. The usefulness of the app, users' confidence in using the language in everyday situations, and comparisons to more conventional learning approaches, such as traditional language classes, textbooks, and other formal methods, were among the consumers' perceptions that were examined. To guarantee a deeper analysis, the interviews were segmented by age, gender, and subscription plan. Interviews included

current users of both free and premium plans, as well as past users, to identify trends and behaviors across user segments, offering insights to better app customization, while also increasing engagement. Furthermore, this segmentation allowed for an easier understanding of how various subscription plans and demographics affect the app's interaction, motivation, and satisfaction.

As for the experts' interviews, three professionals from the teaching languages industry participated in this set of interviews. Specifically, the pedagogical director of Speakwell and two language professors - one from Cambridge and the other from Speakwell - were interviewed. These interviews provided insights into how the current LL apps compare to traditional teaching methods, as well as insights into the most effective teaching tactics. These findings proved extremely helpful for identifying existing gaps in LL applications. *Tables 3, 4,* and *5*, in the *Appendix* showcases an overview of all the interviewees' profiles.

4.2. Results

According to the methodology, preliminary interviews were conducted with consumers and experts to gain deeper insights into the current state of the LL apps market. The consumer interviews focused on understanding past and present consumers' perceptions and preferences, while the expert interviews aimed to provide industry perspectives and shed light on market trends.

The consumer interviews revealed that the most appreciated features in language apps are those that simulate real-life situations, including listening to stories and sample conversations, as users feel they can directly apply these skills. Current users particularly enjoy gamification elements such as streaks, which they find motivating and fun, as these encourage regular practice and introduce a sense of competitiveness, aligning with Steel's (2012) research. However, some former users mentioned that constant notifications and gamified features became overwhelming, causing stress and detracting from the learning experience, a concern also present in Faudy and Sadikin's (2023) findings about potential distractions in MALL.

Both current and past users identified the repetitiveness of early-stage lessons as a frustration, with some taking breaks of up to six months due to slow learning progress. The lack of grammatical explanations was also seen as a high barrier to learning effectively by consumers, according to one consumer: "I will finish a whole class on a grammatical topic and still in the end not be able to understand what I just did." Additionally, the interviews revealed that the absence of European Portuguese in LL applications - both as a language to learn and, more importantly, as a translation option for other languages - significantly hinders the learning experience for native Portuguese speakers from Portugal. As these applications only offer Brazilian Portuguese, users from Portugal are forced to select this variant as the app's base language. This presents a major challenge to Portuguese users since the additional cognitive effort required to learn Brazilian Portuguese was consistently mentioned by all the past users, many of whom cited it as a key reason for discontinuing their use of the app. As one participant explained, *"*It becomes twice as difficult to learn a language when these apps do not offer my language, making me less motivated to continue*"*. Multiple consumers also indicated that official language certifications should be a feature incorporated in LL applications moving forward. To illustrate, this is especially important when someone is transferring countries and needs a quick certificate for a job.

When asked about the effectiveness of LL applications, consumers agreed that apps such as Babbel and Busuu are much more effective than the market leader Duolingo. This is mainly due to the lack of Duolingo's offer of important features in their mind, including revision tools and speaking exercises. Nevertheless, in comparison to traditional language courses, these apps are viewed as overall less effective in general, as users feel unprepared for real-life speaking situations. This supports Faudy and Sadikin's (2023) view that while LL offers portability and time efficiency, it often lacks the depth of traditional methods. Furthermore, these findings are consistent with the literature review, particularly the study by Jiang, et al. (2020), which suggests that language

learning applications cannot fully replace formal instructions, as users are challenged with achieving fluency and fully understanding a language, only by using apps as a learning tool. Furthermore, when asked why they use LL applications, the majority of interviewees stated that they use the app as a hobby rather than as a serious language learning tool.

Consumers who use premium paid features found LL apps more motivating, enjoyable, and even more effective than those who utilize free plans. Premium gamification features such as the ability to compete with real-life friends were one of the biggest drivers of said motivation. Consumers who utilize free plans, currently, do not view paid subscriptions as worth it. Nevertheless, three out of four current users said that they were not interested in switching to paid subscription as long as they don't offer any virtual access to teachers or language experts, highlighting how they would even be willing to pay higher subscription values to access it, as quoted by a current consumer: "For improved features such as being able to talk to a professor for a fixed number of times per month, I would even pay more than 5 euros, but not for a lesson conducted by an AI agent". Additionally, all past consumers stated that they would be willing to start using LL applications again if they offered virtual support from teachers, being even willing to pay for a subscription plan, as stated by this past consumer: "The only feature that I would be willing to reinstall and pay for an app would be a virtual class with a real-life professor, and I would pay approximately 20 euros per class". In terms of perceptions, psychological associations with the apps included words such as "playful, game-like, exciting, motivational, and joyful," especially for Duolingo, aligning with Steel's (2012) emphasis on immersive experiences, contrasting with consumers' view on Babbel as being more rigorous. Overall, traditional methods were still regarded as more effective. Users' emotional responses to the apps varied, with some finding them relaxing, while others experienced stress and anxiety due to the gamified elements, reinforcing the mixed reactions Faudy and Sadikin (2023) identified regarding engagement and distractions.

Interviews with language experts revealed the advantages and disadvantages of LL applications compared to traditional learning methods while highlighting how LL apps can improve their effectiveness. According to experts, group settings are among the most effective ways to learn a new language. Interacting with other students and having self-learning activities where group members must assist one another in completing a task is highly effective, combined with peer interaction. Additionally, students can improve their speaking skills in a group context by participating in classroom debates. Overall, human interaction is extremely advantageous, whether with peers or teachers, since it enables more thorough theoretical explanations and immediate answers to any questions or concerns students may have.

According to the Pedagogical Director of a language learning institution, SpeakWell, providing personalized learning is a key method to ensure that students stay motivated to learn, as he remarked: “When meeting students’ immediate needs, they have a higher determination”. This relates to literature findings, specifically in regard to the Expectancy Confirmation Model, where Ifinedo (2018), argues that students have higher levels of satisfaction when their expectations are fulfilled. According to Ünal and Güngör (2021), this also increases student’s intentions to continue using an approach. Thus, suggesting that the success of LL applications may depend on ensuring that the individual goals and demands of students are satisfied.

When asked to compare the learning effectiveness of traditional learning methods to LL applications, experts agreed that although the apps are less time-consuming, they cannot explain theory or provide human interaction. Experts agreed that traditional methods are superior to LL apps in this regard, since in their view, having face-to-face interaction with peers and professors can increase motivation. This perspective further underscores the relevance of Bagozzi’s (2007) call for a paradigm shift in technology acceptance research, advocating for a more comprehensive approach that incorporates emotional responses and social processes.

The professionals surveyed stated that LL apps are not able to replace conventional teaching techniques. Nonetheless, experts recommended teaching strategies to improve the effectiveness of LL apps, which align with some of the recommendations made also by previous and current users. Namely, providing a theoretical component is crucial, as students need to comprehend the rationale behind the material they are learning. Additionally, the ability to interact, in a virtual way, with teachers would help tackle the current problem of lack of human contact and would allow students to get quicker feedback. Furthermore, content should be tailored to each student's demands and goals as well as age groups, because according to experts interviewed, once successful techniques may lose their effectiveness as people age. Thus, according to the Pedagogical Director of SpeakWell, having empathy and the capacity to adjust to the objectives of every student are essential features in the LL apps.

5. Perceptual Maps

The insights gathered from the preliminary interviews provided a foundational understanding of the key themes around long-term adoption and retention, as well as perceptions central to the research focus. These findings not only enriched the contextual framework of the study but also informed the design of subsequent data collection methods. Building on this qualitative groundwork, the following section outlines more detailed Portuguese consumers' psychological associations.

5.1. Methodology

According to Gigauri (2019), a product's existence in the market depends on the perceptions consumers form about it, which often involves associations with specific attributes, benefits, and features. Perceptual maps graphically represent these perceptions, showing how consumers view different brands or products in relation to one another (Nigam & Kaushik, 2011). The distances between brands on the map reflects their differences, and are determined by various variables,

which can be rank-ordered preferences done by consumers or even more specific attributes. Consumers convey their perceptions of each brand either by indicating associations with specific attributes or through rating scales. (Dallakyan, 2014).

These maps are valuable not only for identifying the key attributes consumers prioritize but also for showcasing a brand's strengths and weaknesses compared to its competitors (Gigauri, 2019). Perceptual maps allow businesses to identify market gaps and opportunities for repositioning, which enables the development of more effective marketing strategies (Gigauri, 2019). This process also aids companies to better target specific market segments and improve their positioning strategies accordingly, while also adjusting pricing, design, and communication strategies (Gigauri, 2019).

As Gower et al. (2010) argue, perceptual maps can also have limitations. For instance, issues similar to unevenly scaled and disproportionate axes can make the proximity between data points unrealistic, thus misleading researchers. Maps with too many data points and labels can also make analysis intricate, as the maps become too cluttered and complex (Gower et al., 2010). Additionally, the authors argue that certain design choices such as labels and structure can lead to biased interpretations, and so leading to inaccurate conclusions. (Gower et al., 2010). While perceptual maps can be a helpful research technique, their limitations should also be taken into consideration.

And so, to better understand Portuguese consumers' perceptions regarding LL applications, an attribute-based perceptual mapping was conducted. This allows for a direct comparison of how consumers perceive various attributes of competing brands (Gigauri, 2019). To generate these maps, a sample of Portuguese consumers was asked to rank various LL application brands on a scale from 1 to 5 regarding several psychological associations. The collected data was then entered into IBM SPSS Statistics software for further investigation using factor analysis and

multidimensional scaling (MDS). Factor analysis was used to simplify the dataset by grouping correlated variables into broader dimensions that best represent the data without losing essential information (Kohli & Leuthesser). Finally, MDS was applied to generate perceptual maps with various dimensions. MDS creates a visual representation of the perceived similarities between brands, where the proximity of points reflects how similar consumers perceive them to be (Kohli & Leuthesser, 1993).

5.1.1. Survey Design & Associations Selected

A survey was conducted to develop perceptual maps that reflect Portuguese consumers' perceptions of LL applications. The survey was accessible to participants for one week and, to maximize the number of respondents, it was shared through both personal and social media networks, including Instagram, LinkedIn, and WhatsApp.

The survey was generated through Google Forms and consisted of four sections, with a total of 22 questions (*Appendix, Table 6*). The first section introduced the survey and asked for participants' consent. The second section aimed to understand which LL apps, if any, respondents have ever used. Thus, those with usage history selected all the apps that they have tried in the past or are current users of, and for those that had never used these apps, the survey was concluded at the end of this section, as the focus revolved around insights from current or former users. Once the pool of participants was narrowed down, the third section focused on assessing consumers' perceptions of the four brands under analysis in this research: Duolingo, Babbel, Falou, and Buddy.ai. Respondents rated the apps based on several psychological associations using a Likert Scale, where 1 represents the lowest rating and 5 the highest (Joshi, et al. 2015). The structure of the questions was as follows: *"*On a scale from 1 to 5, how would you rate each app as **Playful?**", where 1 indicated "strongly disagree" and 5 "strongly agree". If respondents had never used or were unfamiliar with any of the four brands, a "Not Applicable" option was available.

As for the psychological associations that were evaluated in this survey, those were determined according to literature findings. Previous studies emphasized the impact of gaming features on user motivation, and highlighted aspects such as enjoyment, empowerment, and cultural enrichment as core experiences. Additionally, preliminary interviews revealed important insights, where especially current and past consumers described how they interacted with and felt about these products, leading to the identification of specific associations. Thus, the following associations were used in the survey: *Playful, Stressful, Frustrating, Monotonous, Helpful, Enjoyable, Authentic, Empowering, Culturally Enriching, Community-Oriented, Supporting, and Motivating (through gaming features)*. Lastly, to conclude the survey and to gain a deeper understanding of the sample, participants faced several demographic questions regarding their age group, gender, nationality, highest level of education, current occupation, household income, and any disabilities.

5.2. Results

5.2.1. Survey Results

The primary target audience of this survey included consumers of LL applications who held an understanding of these tools. The final dataset amounted to 168 observations with an average completion time of 5 minutes. Of the 168 survey participants, 157 were Portuguese. Among them, 44.3% reported having used language learning apps in the past but discontinued their usage, suggesting that many users may perceive limited long-term value in these tools. Currently, 26.8% actively use language learning apps, while 26.1% have never used them. Consequently, the analysis will focus on 116 Portuguese respondents who either currently use or have previously used LL apps, as these individuals are most relevant to understanding consumer behavior in this context.

After the evaluation of all the responses, an extensive analysis of the demographic variables, including age, gender, nationality, education level, current occupation, and household income was

conducted to confirm an even distribution sample. Along with this examination, the application users (both current and former users of language learning apps) and their perceptions were explored.

Sample Characteristics

Age

To simplify the analysis of the survey and to facilitate the grouping of responses by age categories, the Age attribute was divided into five distinct ranges (*Appendix, Table 7*). The most predominant age group consists of individuals aged 19 to 30, accounting for 76.7% of the respondents. The accessibility younger generations have to the channels in which the survey was distributed, and social media, make them more inclined to participate in an app-related survey. The cumulative representation of participants in the older age groups - 31 and above - is approximately 9%, where 2.6% of respondents fall into the 31-45 age group, 5.2% are between 46-60 years old, and 0.9% are aged 61 or above. In Portugal, 26.4% of the population is aged 65 or above, a proportion that is steadily increasing (PORDATA, 2024a). This suggests that the survey sample may not fully reflect the preferences of the broader Portuguese consumer base.

Gender

The gender distribution in the sample (*Appendix, Table 8*) is evenly distributed among participants who identify themselves as female (51.7%) and male (45.7%) having a minority of participants (1.7%) who prefer not to say. One participant also identified as non-binary. This mimics the gender distribution of the Portuguese population, where approximately 48% of the population is male and 52% is female (PORDATA, 2024a).

Educational Level

Regarding the educational level of the respondents (*Appendix, Table 9*), the majority reported having completed a bachelor's degree, representing approximately 50.9% of the sample. According

to the study done by PORDATA (2024b), only 27.2% of the population aged between 15 and 64 years has a higher education diploma in 2023, thus this research's sample reflects superior education levels than the country's average. This was followed by 25.9% who indicated high school as their highest level of education. Additionally, 22.4% of respondents reported completing a master's degree, while a smaller portion (0.9%) completed a specialized program, such as a PhD. These findings align closely with the respondents' age distribution, as the majority are young adults. It corresponds to current educational trends for this demographic, including the growing number of students enrolled in higher education (PORTUGAL.GOV, n.d.).

Current Occupation

The distribution of respondents' current employment status reveals that students constitute the largest group, comprising 50.9% of the sample. This finding aligns with the predominant age range of 19–30 years, suggesting that the survey primarily reached a younger and academically oriented audience. According to PORDATA (2024c), the Portuguese population exhibits a different profile, with only 16.4% being students. This disparity may be skewed toward the preferences and behavior of this segment, rather than fully reflecting associations of the Portuguese market as a whole. Additionally, 24.1% of respondents are employed, potentially utilizing language learning applications for professional development purposes. 20.7% of the sample consists of working students, reflecting those balancing both academic and professional responsibilities. Smaller groups of respondents, including those who are unemployed, retired, or business owners, collectively account for approximately 4% of the total sample (*Appendix, Table 10*).

Yearly Household Income

The income distribution of respondents, (*Appendix, Table 11*), reveals that the largest proportion, 32.8%, reports annual earnings between 20,000€ and 40,000€, followed closely by 29.3% who earn less than 20,000€. Together, these two groups comprise over 60% of the sample, indicating that

the majority of respondents fall into lower-income brackets. This economic profile likely influences their preference for language learning applications, with users in these income ranges gravitating towards free or low-cost options, such as Duolingo, which is widely favored for its freemium model. Respondents in the middle-income bracket, earning 40,001€ to 60,000€ annually, represent 21.6% of the sample and may exhibit greater openness to paid applications, similar to Babbel or premium versions of free apps. Conversely, the higher-income categories—60,001€ to 100,000€ and more than 100,000€—account for a smaller proportion of respondents, at 7.8% and 8.6%, respectively. Hypothetically, these higher-income individuals are more likely to invest in premium or specialized language learning tools, which offer advanced features and personalized services. Aligned with Portuguese economic trends, these findings reflect an average monthly wage of approximately €1,443 (Mateus & Esteves, 2024). Given this context, it is unsurprising that lower-income levels dominate the respondent pool, reflecting both the economic realities of the general population and the accessibility of affordable or free language learning platforms.

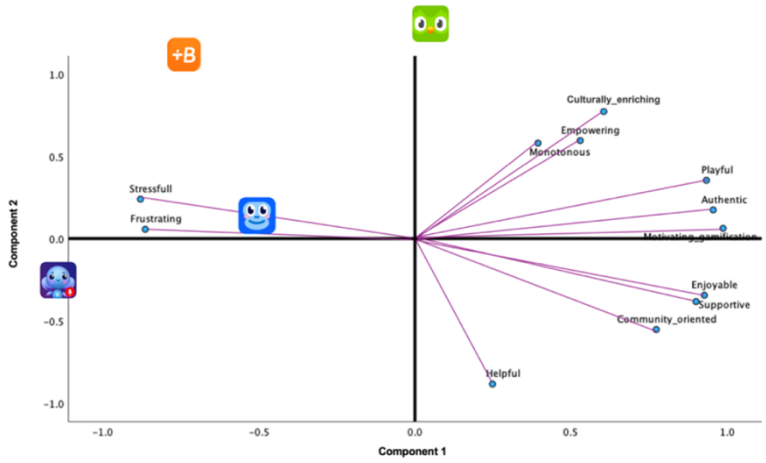
5.2.2. Multidimensional Maps

Following the analysis of survey data, a factor analysis was conducted using IBM SPSS Statistics to generate the perceptual maps. This process reduced correlated variables into two key dimensions: Dimension 1 (D1), labeled "Emotional Experience"and Dimension 2 (D2), termed "Cognitive and Practical Balance", used for the axes of the map. By mapping user perceptions and language learning (LL) apps onto these dimensions, the resulting perceptual map (*Image 2*) visually represents how each app is positioned in consumers' minds.

Duolingo ranked highest in engagement and motivation due to its gamification approach, whereas Babbel was perceived as more structured but less enjoyable. Falou and Buddy.ai displayed similarities, particularly in fostering community-oriented and helpful experiences. By categorizing

applications based on psychological associations, this analysis offers valuable insights into market positioning, user experience, and consumer decision-making patterns in the LL app industry.

Image 2 – Perceptual Maps LL applications



6. Conjoint Analysis

The conjoint analysis is applied as a quantitative research method to explore consumer preferences in the Portuguese language learning app market. This methodology is critical for assessing the trade-offs among various attributes influencing user choices, particularly through its capability to analyze brand-specific factors, which is essential given the significance of brand perception in consumer decision-making. To do so, participants evaluated pairs of profiles representing key attributes such as brand, personalization features, social interaction, gamification levels, offline mode, certification, and monthly subscription price. The key findings reveal that Duolingo is identified as the preferred brand, with Babbel receiving mixed opinions, while Falou and Buddy.ai receiving unfavorable ratings. An analysis of attribute importance shows that personalization - such as adaptive learning paths - and gamification elements significantly impact user satisfaction and engagement. Furthermore, the demographic analysis reveals a predominantly youthful and educated sample, with 79.1% of respondents aged 19 to 30and 46.4% holding a Master's degree.

Moreover, Portuguese consumers' preferences for language learning app features were analyzed revealing significant variations across brands. For Duolingo, the Monthly Fee was the most critical factor in decision-making, followed by Certification. Babbel, which has fixed Certification and Monthly Fee levels, saw Social Interaction as the dominant factor, followed by Personalization Features and Offline Mode. In Falou's case, Monthly Fee was overwhelmingly the most important, with Social Interaction ranking second. Regarding specific level preferences, Duolingo consumers showed a strong preference for the free, ad-supported version, disfavoring the paid alternative. Certification was a key differentiator, and Social Interaction, particularly peer-to-peer engagement, was modestly valued. Babbel's users strongly favored access to an instructor or tutor. Falou users echoed Duolingo's preference for free versions, favoring peer-to-peer interaction.

Overall, consumer behavior towards price revealed a strong inclination toward free options, with the top 16 ranked product concepts being ad-supported versions. When Duolingo's paid subscription was replaced with a free version, its market share surged to 79.2%. Similarly, when Falou switched to a free model, its share increased significantly.

7. Introduction of a Market Challenger

7.1. Introduction

Following a thorough analysis of the Portuguese market of LL applications, this study aimed to identify both, current consumer perceptions, as well as preferences of the most downloaded LL apps of 2023, specifically Duolingo, Babbel, Falou, and Buddy.ai, according to Statista (2024b). Perceptual maps analysis revealed a distinct market gap for a potential new player. Namely, by positioning itself in consumers' minds by eliciting highly positive emotional responses, characterized by a sense of playfulness and enjoyment, whilst delivering high practical functionality, by ensuring its effectiveness and helpfulness as a competitor in learning a new language.

Furthermore, through analyzing consumers' preferences, an opportunity has arisen to leverage the most valued bundle by consumers, for the introduction of a new product in the market. To differentiate from the market competition whilst simultaneously ensuring the desired high effectiveness in learning a new language, an additional feature will be introduced, specifically access to professional, real-life tutors within the app. In light of these considerations, this research proposes the introduction of a new competitor in the Portuguese LL application market to fulfill unmet consumer needs and establish a differentiating presence in the competitive landscape. To accomplish this, a branding strategy will be developed by determining the unique selling point of this new player and the distinct functionalities of the app. Additionally, an in-depth marketing and communication plan will be suggested to effectively position this new player within the market.

7.2. Meet Marli

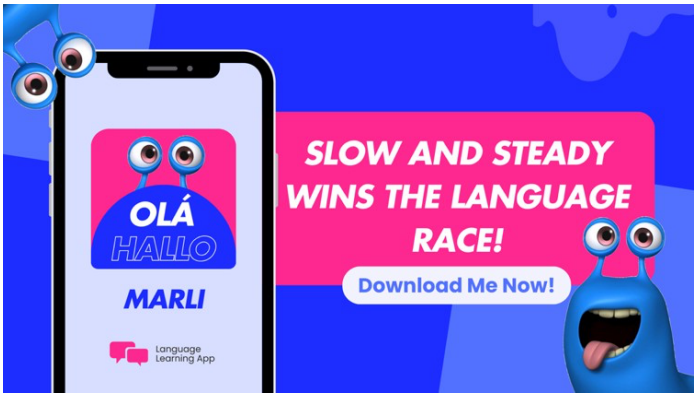
MARLI is a revolutionary new app in the language learning market, designed to transform education in LL apps. Unlike many traditional apps that focus heavily on memorization and speed, MARLI emphasizes a steady, enjoyable journey that builds confidence over time. With the mission "to make language learning an effective, enjoyable, and affordable journey for everyone by offering a customizable learning experience that connects users with language experts, builds confidence, and develops communication skills", MARLI was created with the purpose of tapping the gaps existing in the current language learning market. The app bases its operation on four fundamental values: Education, empowering consumers with engaging language experiences, enhancing communication skills, and cultural understanding; Empowerment, fostering a sense of confidence in learners by providing tools and support that enable them to take ownership of their language learning experience; Adaptability, by catering to each learner's unique preferences and needs; and Community, building a strong learners' community who support and inspire one another. Thus, MARLI's unique selling proposition focuses on "empowering everyone to speak

with confidence". For future developments and improvements, MARLI has a vision to "become the most engaging and immersive language learning platform, while being the most effective one, inspiring a global community of learners to explore and connect with new cultures, one milestone at a time".

7.2.1. Brand Identity

MARLI distinguishes itself from other LL apps with a vibrant and engaging visual identity designed to attract users, (*Image 3*). Having a color palette of bright and vibrant pink and blue, it stands out from the competition as it creates a friendly atmosphere that invites users to spend more time exploring and engaging with its content. This bold choice of colors not only enhances visual appeal but also fosters an inviting, playful environment that resonates with users of all ages. Additionally, MARLI uses bold and chunky typography to reinforce a youthful and energetic aura. This typographic style complements the bright color scheme and emphasizes MARLI's commitment to making language learning fun and approachable. Together, these design elements culminate in the app's logo, which embodies the brand's vibrant color palette and eye-catching typography, drawing the attention of new users.

Image 3 – MARLI Brand Identity



The logo also gives a playful hint of the brand's mascot—a quirky blue slug—by featuring its eyes

peeking out. This subtle detail sparks curiosity and invites users to discover more about Marli[1], the Slug, who is designed to be an endearing character: friendly, supportive, and a little quirky. Marli, the Slug will appear at every stage of the user experience, guiding and cheering users on. As the face of the brand across all communications, Marli intends to build a sense of adoration and close friendship with users, helping them feel encouraged and engaged on their language learning journey. Research has shown that incorporating a brand mascot can significantly enhance both brand awareness and brand attitude (Çakir et al., 2018). By introducing Marli, the Slug, the brand seeks to leverage these benefits to strengthen its connection with consumers and reinforce its overall branding strategy. Finally, the brand's name - MARLI – was chosen to evoke the image of a quirky, supportive companion, reinforcing the app's approachable and friendly nature, making it easy for users to remember as they embark on their language learning journey. Verbally, the identity of the app reflects its mission and vision of engaging users in a playful, motivating, and confidence-building environment. To do so, a friendly and casual tone is applied throughout all the interactions and brand communications to foster a supportive and trustworthy environment for students. Throughout the user experience, this playful approach will be evident in cheerful phrases such as "Sluggin' away!", "Small steps, big progress! You've got this!", and "Let's hit the finish line together!" These expressions not only encourage users but also enhance their overall positive emotional experiences towards the brand. In addition to its playful nature, Marli will embody a knowledgeable persona, offering helpful phrases designed to guide students through their learning journey. Examples like "Here's a little trick for this one", "Let's summarize together", and "This one's tough, but I'm here to lend a little slime-y support" emphasize Marli's role as both a friendly companion and a reliable source of assistance. This essence is captured through MARLI's slogan,

[1] Moving forward, MARLI will designate the brand name, while Marli will refer to the brands' mascot.

"Slow and Steady Wins the Language Race", emphasizing that learning is a journey to be enjoyed and celebrated, creating an environment where progress, rather than speed, is the ultimate goal.

7.2.2. MARLI's Product Features

By addressing consumers' preferences from the conjoint analysis, MARLI will offer a mix of the analysis' best bundle, and important features mentioned in the Preliminary Interviews, such as *customizable learning goals*, *high gamification*, *access to formal language level assessments* (CEFR – aligned testing), and *access to Instructors or Tutors*.

Customizable Learning Goals

MARLI offers customizable learning goals to ensure that each user's language journey is tailored to their needs and preferences, fostering a learning environment where they feel comfortable and supported. Upon starting the language journey, users take an initial assessment to determine their language proficiency level, enabling MARLI to suggest an individualized learning path that aligns with users' skill levels. Following the assessment, users can then choose specific areas to focus on, such as vocabulary, grammar, or conversation skills, aligning the experience with their individual goals. MARLI's customizable approach ensures that users feel in control of their progress, with features that value their personal objectives learning style, and pace.

Number of Languages Offered

Initially, twenty languages will be offered by MARLI, offering a unique option to learn and practice Portuguese from Portugal (*Appendix, Table 12*). Recognizing a need voiced by many consumers in the preliminary interviews, MARLI will also include both European as well as Brazilian Portuguese, a feature that is currently lacking from competitors and highly valued in this market.

High Gamification Features

MARLI offers a highly gamified LL experience and at the heart of this experience, there is Marli, a friendly slug that acts both as a guide and a motivator for users. This approach is designed to

incentivize learners to feel they are on an adventure. To stand out from the competition and enrich users' experience, as users progress, Marli takes them on virtual adventures through different cities around the globe, where they can "unlock" cultural insights unique to each location, making language acquisition deeply connected to real-world contexts. For instance, when users choose to learn Portuguese from Portugal, their journey becomes a cultural exploration of the country, progressing city by city. Each module introduces a new city, combining language learning with insights into local culture, customs, and expressions. As users "travel" to the next city upon completing a module, they deepen their language skills while virtually exploring Portugal's diverse regions, making learning an engaging and immersive adventure. This city-based progression not only deepens users' language knowledge but also enriches their understanding of the country's regional identities, making language learning an adventure across various countries and cities around the world. Throughout the learning journey, Marli occasionally pops up on the screen as a cheerful motivator, offering encouragement and helpful tips. With messages such as, "This one's tough, but I'm here to lend a little slime-y support" or "Here's a little trick for this one", Marli provides users with guidance, letting them know when they're on the right track or might benefit from a session review. As a recommendation provided in the preliminary interviews, to enhance knowledge retention, the brand offers regular review sessions with its mascot, Marli, where users revisit key concepts in an interactive and engaging way. These sessions help reinforce learning and address any gaps. Additionally, randomly timed pop quizzes test past knowledge, ensuring key concepts are retained while adding an element of surprise to keep learning dynamic and engaging. MARLI makes learning both engaging and rewarding by offering a range of incentives that encourage users to stay motivated and push their limits. Users have the chance to engage in friendly competitions with friends, where they can track each other's progress, compare knowledge of specific topics or lessons, and see who the "winner" in each chapter is. This feature adds a fun,

social dynamic to the learning experience, allowing users to challenge each other and celebrate one another's progress. As users complete levels, they earn points that unlock new challenges and opportunities. When a user reaches specific point milestones, MARLI invites them to join competitions with other learners who have achieved similar levels, turning progress into a rewarding and interactive experience. By participating in these challenges, users have the chance to gain exciting rewards, including the possibility to access additional tutoring sessions, premium language assessments, and exclusive MARLI merchandise, including Marli's teddy bear. Some of these rewards, such as paid assessments, can be fully or partially covered by MARLI, allowing learners to advance their skills without extra cost. Furthermore, MARLI uses AI-driven "mini-movies" with Marli and its friends acting out scenes in the target language, providing users with "real-life", relatable, and practical dialogues to enhance comprehension and listening skills. For example, users might watch Marli visiting a coffee shop, ordering a drink and a snack, or asking for directions in a new city, mimicking conversations that users might encounter in their daily lives.

Certificates

MARLI offers users the option to access formal language assessments aligned with the CEFR (Common European Framework of Reference for Languages), paid separately from the subscription fee. These official certifications provide users with recognized and credible proof of language proficiency, which can be presented to employers, universities, and other institutions. This certification option responds directly to feedback from preliminary interviews, as well as the consumers' preferences findings from the conjoint analysis. One interviewee highlighted the value of these certifications within LL apps, noting how essential they are for those who need formal qualifications for career or educational purposes.

Access to virtual professors

To stand out from the competition and maximize effectiveness in language learning, MARLI will

offer virtual, real-time classes led by qualified language instructors. Despite the inclusion of tutors not identified as part of the best bundle in the conjoint analysis, insights from the preliminary reviews revealed how having access to language experts is a key factor in increasing users' willingness to pay. This feature was also revealed to be an incentive for former users to return to LL apps, as they have previously abandoned them due to lack of effectiveness. This argument is also supported by insights from interviews with experts who all emphasized the benefits of having real-time access to language specialists who can instantly address student questions and provide immediate feedback. Thus, to differentiate from the current best bundle according to Portuguese consumers provided by Duolingo, MARLI will integrate live classes with language professionals, positioning itself with a competitive advantage that directly responds to user needs and preferences. The subscription package includes two monthly virtual classes tailored to students' needs. Students can choose a group class with a fixed schedule, focusing on specific skills including grammar, speaking, or listening, or opt for a private 30-minute class, which can be booked independently of the group schedule. Additionally, a 24/7 AI-powered chat box will be available for quick, on-the-spot questions. Students can easily get simpler questions answered, yet to not cannibalize on professors, the chat box will direct students to live classes when questions require more in-depth guidance or if the student's understanding remains incomplete. To ensure flexibility, students can carry over unused class bookings to the following month if they cannot attend. However, bookings can only be carried over once and cannot accumulate further. This structure supports adaptability while accommodating different learning schedules.

Competitive Pricing

To remain competitive in the LL application Portuguese market, MARLI will offer a subscription plan starting at 12.99€ per month, with certificates available for an additional fee. This pricing strategy aims to balance affordability with value, catering to market preferences while supporting

MARLI's premium features and services. The pricing was determined by analyzing market strategies, particularly Babbel, which offers similar access to language instructors, (*Appendix, Table 13*).

Nevertheless, an initial two-week free trial will be offered, allowing consumers to explore MARLI's services and decide whether to continue. This approach encourages engagement with MARLI's gamified features and mascot, fostering retention, while aligning with the dominant freemium model. MARLI follows a similar strategy to Babbel, limiting its free lessons to incentivize subscription upgrades. Furthermore, a loyalty program will be included to incentivize retention, by offering trimestral, semestral, and yearly prices, based on the monthly price of 12.99€. Offering both shorter and longer loyalty program options allows MARLI to cater to diverse student needs. Hence, *Table 14*, in the *Appendix*, outlines the different pricing tiers MARLI offers.

No Offline Features

Although some competitors include offline classes, the conjoint analysis showed low consumer interest in such features. MARLI has opted to focus solely on online offerings, reallocating resources to enhance virtual professors, content quality, and technology-driven features, ensuring a competitive price.

7.2.3. *Channels*

The app will be available through the App Store, for IOS devices, and in the Google Store, for Android users, ensuring accessibility across the most widely used mobile platforms. Additionally, for those who prefer a desktop experience, there is a version for computers, ensuring flexibility to learn from any device of their choice.

7.3. New App Perception Survey

To establish a comprehensive foundation for MARLI's STP (Segmentation, Targeting, and Positioning) strategy, an additional survey was conducted to present MARLI and to develop an

understanding of Portuguese consumers' perceptions towards the new LL application. The goal of this survey was to identify and map the values that respondents, from different demographic profiles, attribute to the various features of MARLI. This process enabled the creation of two datasets to be used for training a segmentation model with the no-code platform, Enginius, at a later stage in this study.

The survey was accessible to participants for one week to maximize the number of responses, and it was shared through both personal and social media networks, including Instagram, LinkedIn, and WhatsApp. It was established in Google Forms, and it consisted of three sections. The first section presented an overview of the survey's goal and asked for participation consent, determining respondents who would proceed to the following section. The second part of the survey presents a description of the app' features and its identity, followed by four ranking questions, where respondents were asked to rank on a scale from 1 to 5 how much they value each of the features, as well as their willingness to pay, where 1 represent the least value and 5 the highest. *Formal language level assessments* were evaluated separately on a scale from 0 to 1. In this same section, respondents were asked if they would acquire the proposed product. The final section asked several demographic questions regarding their age group, gender, nationality, highest level of education, current occupation, household income, and disabilities, if any. (*Appendix, Table 15*).

7.3.1. Survey Results

The Google Forms survey yielded a total of 207 responses, from which 205 were considered valid after excluding two entries from non-Portuguese respondents. In alignment with findings from the previous survey results, the majority of respondents belong to the 19-30 age group, encompassing 66.2% of the sample (*Appendix, Table 16*). This is followed by respondents aged 31-45 (15.5%) and 46-60 (10.6%). Respondents under or equal to 18 years old or over 60 constitute a minority (*Appendix, Table 16*), which is also consistent with patterns observed in previous surveys.

Regarding gender distribution, there is an almost even split between feminine (49.8%) and masculine (48.8%) respondents, together comprising approximately the entire sample (*Appendix, Table 17*). Only a small proportion of respondents identified as non-binary or chose options such as "None of the options", representing a minimal segment of the total responses.

The education level distribution among the 205 valid respondents reveals a highly educated sample (*Appendix, Table 18*), all consistent with previous survey findings. The largest group consists of respondents with a Bachelor's degree, representing 38.6%, and those with a Master's degree, covering 37.7%. Together, these two levels represent the majority of the sample, highlighting a strong representation of higher education levels. Respondents with only high school education include 17.4% of the sample, while those with a middle school education make up a minimal portion at 2.9%. Lastly, individuals holding a PhD are a minority at 3.4%, a lower percentage compared to previously analyzed survey results. Among the 205 respondents, the largest segment is composed of employed individuals, accounting for 49.3% (*Appendix, Table 19*). Working students follow this group, representing 22.7%, while 18.8% are full-time students. A smaller portion of the sample is retired, at 4.8%, and the unemployed category forms the smallest group, making up 4.3% of the sample. These findings highlight a predominantly working and education-focused sample, with a significant share balancing both work and study. This trend suggests a high level of engagement in both professional and academic pursuits, which may influence respondents' attitudes and preferences toward LL applications. The annual household income distribution reflects a relatively balanced spread across different income levels (*Appendix, Table 20*), with a slight concentration in the lower-to-middle income brackets. Specifically, 28.5% of respondents report an income between 20,000€ and 40,000€, closely followed by 27.5% earning less than 20,000€ per year. Respondents earning between 40,001€ and 60,000€ also make up 28.5% of the sample, resulting in a majority of individuals with income levels below 60,000€. A smaller

segment, around 11.1%, falls into the 60,001€ to 100,000€ income range, and minimal percentage, representing the highest income group, earns more than 100,000€ per year (approximately 4,3%). Ultimately, the sample's analysis showed that individuals with disabilities were not represented, as no respondents identified themselves within this category.

Following the analysis of the sample's demographic profile, the attention now turns to respondents' preferences regarding key features of MARLI. For *Tutor Classes*, a significant number of respondents indicated high importance, with 60 respondents rating it as a 5 and 74 as a 4 (*Appendix, Table 21*). This result suggests that access to tutor-led sessions is highly valued, underscoring the perceived benefit of having professional guidance in the language learning process. On the other hand, a smaller number - 23 and 24 respondents - rated this feature as a 1 or 2, respectively, indicating some variability in the perceived necessity of this attribute. *Customizable Learning Goals* received a similarly strong response in favor of its importance (*Appendix, Table 21*). The majority of the sample rated it highly, with around 46.3% of respondents assigning a rating of 4 and 44.4% rating it as 5. This indicates that users place considerable value on the ability to tailor their learning experience, reflecting an interest in more personalized and flexible learning paths. The *Monthly Fee* was another attribute with a significant importance rating (*Appendix, Table 21*), though opinions were to some extent divided. While 131 respondents rated the monthly fee as either a 4 or 5, indicating a strong willingness to pay for the product, the presence of lower ratings reflects a segment with more limited price tolerance. The responses for the *High Gamification level* were more evenly distributed, indicating mixed opinions across the sample (*Appendix, Table 21*). A total of 42 respondents rated gamification as highly important (5), closely followed by 43 who rated it a 4. In contrast, 40 respondents rated it as a 1, demonstrating that gamification appeals to some users but is not essential. Lastly, out of the 205 valid responses collected in the survey, 148 respondents exhibited a preference for having a *Certificate* available in the app (*Appendix, Table*

22), highlighting a significant interest in formal recognition of their learning achievements. This suggests that a majority of participants consider certification as an important or valuable feature when using language learning applications. On the contrary, the remaining 57 respondents did not express a clear preference for a certificate, indicating that this feature may not be as crucial for a portion of the target audience.

7.4. Segmentation Model Methodology

With the findings from the survey, a segmentation model was conducted in Enginius, a no-code platform, this is a "software engineering that allows business stakeholders to create different software applications without writing a single line of code" (El Kamouchi, Kissi & El Beggar, 2023). Such selection was made due to two main reasons: to benefit from the increased efficiency and time savings (El Kamouchi, Kissi & El Beggar, 2023), and due to the lack of customer historical data of the product (given its newness), that constitutes an obstacle to the implementation of a machine learning models, that usually rely on this type of data to segment.

To conduct the model, the platform required two datasets, that were derived from the survey results. The first dataset, referred to as the segmentation data, included segmentation variables such as customers' needs, wants, expectations, and preferences (Enginius, n.d.). To achieve this, the data collected from the second section of the new app perception survey – ranking MARLI's features - was utilized to map preference scores for various features to corresponding arbitrary respondent IDs. The second dataset, known as descriptor data, comprises variables that, while not directly contributing to the creation of segments, are essential for describing them (Enginius, n.d.). In this context, the descriptor data was defined as the demographic characteristics of the survey respondents, drawn from the dataset generated in the final section of the survey. This dataset maps the same respondent IDs to their respective demographic profiles, which were simplified into dummy variables using a straightforward Python script with the pandas' package (*Appendix, Figure*

1). Through this process, each response option in the survey for every demographic question was converted into a new variable, where the values 0 or 1 indicate whether the option does not match or matches the respondent's profile, respectively. Moreover, although no number of segments was forced, the segmentation method was selected to be hierarchical clustering. This is a method used to identify patterns or structures within neural data by organizing events into clusters based on their similarities. It groups similar neural events based on their topology, morphology, or both, allowing for the detailed analysis of interictal events, which are spikes that occur between seizures, observable in a cluster tree, the dendrogram (Guess & Wilson, 2002).

7.4.1. Enginius Results

Enginius provided a quantitative assessment of respondents' preferences, revealing the relative importance they place on five app features. This insight provides a clearer understanding of the attributes that drive user interest and engagement in the market.

Before proceeding with the segmentation process, the dataset underwent a preliminary analysis to examine the distribution and variability of responses. This involved calculating the mean and standard deviation for each attribute (*Appendix, Table 23*), providing an overview of general preference trends (mean values) as well as the extent of response variability (standard deviation). It provided valuable insights into respondent characteristics, ensuring the segmentation process accurately reflected meaningful groupings based on differences in preferences for these attributes. Specifically, tutor access had a relatively high mean of 3.96, indicating it is an attribute valued by most users, though opinions varied moderately. Gamification scored a neutral mean of 3.08 but had the highest standard deviation (1.38), suggesting diverse opinions that could create distinct segments. Customizable learning goals stood out with the highest mean (4.52) and low variability, indicating it is a universally preferred feature and critical for Marli's development. Willingness to pay had a moderate-to-high mean (3.98), reflecting openness to a subscription model, although

preferences on price varied (standard deviation of 1.05). Finally, certification was preferred by 70% of respondents, suggesting it is desirable but not essential to all users. According to Enginius (2024), the ideal segment solution is determined by balancing statistical fit (insights from the data), managerial relevance (practical value in a business context), and targetability (the feasibility of effectively reaching and serving each segment). To determine the appropriate number of segments, both a dendrogram (*Appendix, Graph 1*) and a scree plot (*Appendix, Graph 2*) were retrieved from the Enginius report and analyzed. These visual tools provided insights into the structure and composition of the clusters. The dendrogram illustrates the hierarchical clustering process, where individual observations are progressively grouped together, starting from the bottom as separate units and eventually forming a single, unified cluster at the top. The vertical height of each merge, or "link," indicates the distance between clusters, with larger jumps signifying significant differences between the groups being merged. These larger gaps suggest that the clustering process may be most effective if stopped before merging these distinct groups. In this analysis, the dendrogram revealed a clear separation at the three-cluster level, suggesting this solution would effectively capture distinct consumer profiles. The scree plot provided an additional perspective by showing the variation within each cluster for different cluster numbers. Each point on the plot represents the level of variation within clusters for a specific number of clusters. Higher heterogeneity occurs when clusters include observations with very different preferences, meaning that more clusters are needed to capture the data's variability. The Enginius segmentation report revealed that the "elbow" point in the scree plot occurred at the three-cluster level, where the reduction in heterogeneity slowed down. This finding further supports the optimal number of clusters identified in the dendrogram.

7.5. Segmentation Strategy

Based on insights gathered from the previous analysis, it is now possible to systematically segment

the Portuguese market for the LL application. Segmentation consists of the partition of the market into identifiable segments from a broad customer base that comprises existing and prospective customers (Camilleri, 2018). The segments obtained represent unique consumer profiles, each with specific expectations and behaviors that align with broader patterns in the LL market.

7.5.1. Segment 1: Young Professional Seekers

Segment 1, representing 26% of the sample, is characterized by young, educated professionals and mainly working students with ages ranging from 19 to 30 (*Appendix, Figure 3*). This group highly values tutor support, with a preference for features that facilitate a personalized and structured learning experience (*Appendix, Figure 2*). Despite their focus on tailored educational support, they demonstrate less interest in formal certification, viewing language acquisition as a personal skill development tool rather than a recognized qualification. Their willingness to pay is relatively high (*Appendix, Figure 2*), indicating that they are open to investing in quality education tools that align with their preferences for personal guidance. With a purchase likelihood of approximately 68.6%, this segment represents a promising target that offers tutor sessions and customizable learning paths without necessarily emphasizing gamification.

7.5.2. Segment 2: Budget-Conscious Learners

Segment 2, covering 19% of the tested sample, primarily consists of employed individuals who reveal a cost-sensitive profile. While this segment highly values certificate recognition, they exhibit a low willingness to pay for the app (*Appendix, Figure 2*). This may reflect a strong preference for low-cost or freemium options that include certification benefits without substantial expense. Additionally, their indifference to the *Gamification Level* and *Customizable Learning Goals* (A*ppendix, Figure 2*) suggests that these features do not determine their decision-making, making them less important for this segment.

7.5.3. Segment 3: Certification-Focused High Spenders

The third segment distinguishes itself from the others by having a strong focus on formal recognition and structured guidance, emphasizing the need for tutor support and certification, adding up to the highest sample share, 56%. This group, with ages ranging from 19 to 30, includes a significant proportion of high-achieving students who are also working at the same time (*Appendix, Figure 3*). They prioritize certification as a valuable aspect of language learning and perceive it as an essential tool for progress and professional validation. With a high willingness to pay, Segment 3 is prepared to invest in premium learning experiences with tailored instruction and formal recognition.

7.6. Targeting Strategy

Targeting is the process through which a company selects the market segments it aims to center its focus and resources on based on a comprehensive evaluation of economic, strategic, and competitive factors, and proving an alignment with the established mission and vision (Teresh, 2018). After a thorough analysis of the market's consumer segments, MARLI's targeting strategy will prioritize the third segment, the *Certification-Focused High Spenders,* as it aligns more closely with the application's offerings. Additionally, due to its relative size, this segment is set to potentially cover the highest share of the market. For a 5% significance level, this segment values above-average *Customizable Learning Goals*, paid *Formal Language Certificates*, and *Access to Tutors* above average. They also show a higher willingness to pay the proposed subscription fee. In contrast, the *Gamification Level*, while prominent in MARLI's offerings, is not a defining characteristic for this segment for the 95% level of confidence. Accordingly, MARLI caters effectively to the needs of this segment by featuring customizable learning goals, accessibility to formal language certificates and tutor-conducted lessons. Although the app's high level of gamification does not perfectly align with this segment's preferences, it does not constitute an obstacle to adoption, given the statistical insignificance of this feature in defining the segment.

Most importantly, the decision to focus on this share of the market is supported by the possibility to generate revenue from the *Monthly Fee* that these consumers proved to be highly accepting of. Additionally, the demographic composition of the third segment—primarily individuals aged 19 to 30, the majority of whom are working students—aligns with MARLI's intended tone. The application seeks to educate within a relaxed yet rigorous framework while maintaining a youthful appeal, resonating with the profile of this audience.

7.7. Positioning Strategy

Positioning is the mechanism through which brands assure a distinct mental slot in customers' minds, transferring the emphasis from product features to the mental space (Ries & Trout, 1986). Leveraging the market gap identified through perceptual map analysis, MARLI seeks to establish itself as a brand that seamlessly combines enjoyment with effectiveness. By delivering a positive emotional experience filled with playfulness and engagement, MARLI ensures that language learning is not only enjoyable but also practical and impactful for skill acquisition, making users stay engaged without feeling overwhelmed or stressed. This balanced approach fosters customer satisfaction and builds long-term retention. To do so, MARLI adopts the following positioning statement: For *Certification-Focused High Spenders,* MARLI is a language learning application that delivers an effective and enjoyable learning journey, so that users can achieve their unique language goals while benefiting from a playful and engaging experience, because MARLI combines tutor support with highly gamified features, including Marli, the slug. Thus, MARLI aims to position itself in the bottom right quadrant of the previously observed perceptual maps in this research.

7.7.1. Points of parity

In alignment with its competitors, MARLI incorporates features that are essential to the LL app category, thus establishing Points of Parity, (Brzaković & Brzaković, 2021). These include virtual

lessons across varying difficulty levels, language certification, a diverse focus on language skills such as grammar and vocabulary, an initial language assessment to evaluate each user's proficiency and tailor their learning path, and subscription plans with loyalty programs. By offering these fundamental features, MARLI ensures it meets the core expectations within the language learning market, in line with its competitors.

7.7.2. Points of Differentiation

However, MARLI sets itself apart from its competitors through its gamified user experience and unique features, thus creating Points of Differentiation, (Brzaković & Brzaković, 2021). The mascot, Marli the Slug, creates a personalized connection as a companion and tutor, fostering positive brand associations and standing out from competitors without such human-like mascots. The gamified journey through cities where the language is spoken offers an engaging and culturally enriching learning experience. Additionally, AI-driven mini-videos provide practical language tips, further enhancing cultural immersion. Unlike competitors offering virtual lessons, MARLI's affordable pricing ensures high-quality learning for all, positioning it as the most accessible and distinctive option in the market, for its offer.

7.8. MARLI'S Promotion Plan

7.8.1. Creative Strategy

In developing MARLI's creative launch strategy, it was essential to address the current market landscape and insights gathered on Portuguese consumer preferences, perceptions, and preliminary interview findings. Key considerations included Duolingo's market dominance, which presents challenges for new entrants, alongside the identification of market gaps and competitor weaknesses that MARLI can leverage for differentiation. The strategy emphasizes a captivating and distinctive communication style to engage the audience. MARLI's launch in Portugal will feature an innovative campaign titled "MARLI Takes Over: [City Name]", in Portuguese, designed to spark

consumer curiosity. Using Computer Generated Imagery (CGI) ultra-realistic imagery, Marli, the Slug will appear in five major cities—Lisbon, Paris, New York, Dubai, and Shanghai - cities connected with popular languages consumers aim to learn - through a three-phase approach. In the initial phase, subtle glimpses of MARLI will be showcased with teaser messages such as “Is your Passport Ready?”. In the second phase, MARLI’s playful character will be revealed in iconic city settings, including interacting with the Eiffel Tower or enjoying a “Pastel de Nata” at Lisbon’s Pastéis de Belem, to drive engagement and generate app downloads. In the third phase, AI-generated videos will introduce MARLI’s role in language learning, highlighting his unique advantages. To extend reach, branded metro and train tickets featuring MARLI will be available for a weekend in Lisbon and Porto, with QR codes linking to quirky videos of Marli explaining the brand and how the Slug can be users' new companion, as well as linking to the app’s download. This will also serve as a tangible mark of MARLI’s takeover. CGI advertising has proven to be an effective marketing strategy for capturing the audience’s attention, enhancing brand visibility, and creating better brand experiences through its ability to entertain and engage viewers, especially within the age groups of 18 to 55 years old. (Hadrava & Adámková, 2024). As the target of MARLI encompasses those aged 19 to 30, this full strategy fully aligns with the brand's target. Recent viral campaigns, such as the Maybelline High Sky Mascara launch (Redding, 2023), highlight the potential of CGI to deliver impactful and memorable content. This presents a valuable opportunity for MARLI to develop a disruptive and standout campaign for its launch.

As a new entrant in the Portuguese language learning market, MARLI must prioritize brand awareness to succeed, which will be achieved through brand recall and recognition tactics. Brand recall aims to ensure that consumers think immediately of MARLI when the need to learn a new language arises, which will be achieved by high-frequency campaign exposure across multiple channels (Zaif, 2016). The key message will continually link MARLI to consumer needs, and by

using bright colors, Marli's quirky personality, and its memorable slogan, will reinforce the brand's presence in consumers' minds. Brand recognition will emphasize MARLI's unique benefits and attributes, particularly in the campaign's final stage, to help consumers associate MARLI with the language learning app market—an essential step for establishing this new brand (Chi et al., 2009). As a new entrant, MARLI needs to cultivate a positive brand attitude among consumers. This requires understanding buyer motivations, which, in this case, stem from dissatisfaction with existing options and the need for solutions to unmet needs (Rossiter et al., 2000). The campaign's key message will highlight how MARLI addresses these needs by positioning the brand's mascot as a friendly and supportive companion who guides users through their learning journey, offering new knowledge and solutions to their challenges. This tactic aims to foster a positive brand attitude, build closeness with consumers, and create a sense of friendship with the brand, a proven marketing strategy according to Çakir et al., (2018). Since MARLI requires a paid subscription, it can be perceived as a high-involvement purchase. Thus, communicating the brand's benefits is essential to justify the price and build a positive connection with consumers (Rossiter et al. 2000). The Rossiter-Percy grid for MARLI can be found in *Appendix, Table 24*.

7.8.2. Creative Brief

With the launch of MARLI, this campaign is designed to focus on attracting new clients who are ready for an innovative approach to language learning. The primary target includes individuals who haven't yet engaged with LL apps but are seeking a practical, affordable, and effective solution. MARLI also appeals to consumers who currently alternate between competing apps and, thus are not fully loyal to one single app, as well as regular users of other brands who may be open to a new and different alternative. Overall, MARLI's promotion strategy aligns with its target audience by employing a digitally focused campaign tailored to the preferences of the 19 to 30 age group. The communication emphasizes key features, such as certification and access to expert tutors, to

resonate with this demographic.

The campaign's goal is to increase the conversion rate to achieve 100,000 downloads by the end of the first operating year. Therefore, it is also important to promote brand trials of 60% of those who are engaged by the campaign and generate brand retention of 40%. The campaign will have a budget amount of 2,000,000€. MARLI's campaign engages users in three stages: pre-purchase, purchase, and post-purchase. In the pre-purchase phase, it attracts potential users to the website and promotes a free trial to spark interest. During the purchasing phase, trial users are converted into loyal subscribers through the implementation of loyalty programs. Post-purchase, the focus is on retaining users, encouraging frequent app usage, and transforming satisfied users into brand advocates to drive growth.

Communication objectives involve establishing a category need, for those who relied on traditional learning language methods. As mentioned, increasing Brand Awareness as well as Brand attitude also are a key focus of this campaign. Given that purchasing this product is a high-involvement decision that requires significant commitment, the campaign will also work to foster a strong brand purchase intention, guiding potential customers toward deciding to invest in the app. Purchase intention reflects consumers' likelihood of buying, providing insights into product brands and purchase plans (Budiono et al., 2021). Lastly, to ensure seamless access, the campaign emphasizes the key channels where consumers can access the brand, by using QR codes and links always present in the promotions to facilitate the app's purchase and download.

7.8.3. Media Strategy

To complete the three-stage approach of the "MARLI Takes Over: [City Name]" campaign, various media methods will be utilized to maximize the reach of the campaign. The campaign will have community engagement events, after the three stages, where MARLI will host engaging events in Portugal, inviting influencers, media, and the general public. These events will feature live product

demos where guests can explore MARLI's innovative features and interact with the app for free. The app's mascot, Marli the Slug, will be a star attraction, interacting with guests for fun photos and real-time social content. Influencers will create authentic, immersive content around the event, building buzz and excitement that extends MARLI's reach to wider audiences. According to Loureiro and Kaufmann (2018), community engagement events provide consumers with an opportunity to build strong connections with the brand while simultaneously amplifying word-of-mouth marketing. These events not only boost brand awareness but also enhance brand attitude, making them a highly effective strategy for Marli to stand out in a competitive market (Loureiro & Kaufmann, 2018). Throughout all campaign stages, MARLI will have Social Media Campaigns leveraging influencer partnerships to create playful and relatable content across Instagram, TikTok, and X, where influencers will share their language learning journeys with Marli the slug by their side. Branded hashtags and themed challenges - such as "#MARLITakesOver" - will invite users to engage by sharing their own experiences. Studies have exhibited how *Influencer Marketing* has proven to be a successful marketing strategy in spreading product information, thus making it an essential tool for MARLI's launch (Jiménez-Castillo & Sánchez-Fernández 2019). Digital advertisement will also take place, after completing all three stages, where MARLI's digital ads will feature short but engaging videos that bring Marli, the Slug, to life across YouTube, Meta, X, and Instagram. Spreading brand content through these social media platforms has proven to influence positively brand connection and user engagement (Ibrahim & Aljarah, 2024). These CGI-enhanced interactive video ads with call-to-action (CTA) buttons will drive viewers to download the app. Finally, there will be Out-of-Home (OOH) advertisements, across every phase of the campaign, in which MARLI will deploy multiple, outdoor billboards, and custom metro and train cards. According to Wilson (2022), OOH advertisement can generate great involvement and attitude towards products, ultimately leading to positive brand attitudes, while increasing purchase

intentions. The tangible OOH element of having branded metro and train tickets will aim to increase engagement and conversion with its QR codes, directing commuters to multilingual videos where Marli offers friendly navigation tips and local transit guides. MARLI is set to launch in May 2026 and a campaign timeline is detailed in the *Appendix, Table 25*, providing a comprehensive overview of each phase of MARLI's launch, spanning from May through July 2026. Additionally, a detailed budget distribution table is included in the *Appendix, Table 26*. The campaign budget maximizes impact through digital, offline, and experiential strategies. Out-of-home ads ensure broad visibility, digital advertising and community events enhance reach and engagement, while CGI Videos, paid social media, and *Influencer Marketing* drive targeted exposure. Organic social media provides cost-effective engagement, and the train tickets partnership boosts brand visibility. To assess the campaign's efficacy, determine if it achieved its intended goals and pinpoint areas of improvement, several metrics will be examined to evaluate the outcomes comprehensively. Additionally, this assessment should be benchmarked against both pre-campaign and post-campaign statuses, allowing the brand to extract valuable insights and lessons that can inform future projects and marketing endeavors. In the *Appendix, Table 27*, detailed metrics can be found, as well as the purpose of each one.

All in all, MARLI was created to fill a distinct market gap by offering a solution that combines effectiveness with a playful and enjoyable consumer experience. It stands out by seamlessly integrating a group of features that learners value the most, catering to *Certification-Focused High Spender*s consumers' desire for products that are both functional and engaging.

8. Conclusion

8.1. Discussion

The perceptual map and detailed conjoint analysis offered valuable insights into Portuguese consumers' perceptions of Language Learning applications and their preferences, effectively

addressing the research question. The findings revealed specific gaps within the current market, presenting opportunities for brands to strategically position themselves and achieve a competitive edge. Furthermore, the analysis provided critical insights into consumer preferences regarding available brands and their price sensitivity.

8.1.1. Duolingo's supremacy in the Portuguese market

A challenge in the market remains for apps to remain competitive, especially against Duolingo. Despite apps such as Babbel and Buddy.ai being associated as overall more effective in language learning than the market leader, the conjoint analysis and the results from preliminary interviews reflect reluctance among consumers to try alternative apps, despite acknowledgment of Duolingo's lack of long-term effectiveness. While users expressed frustrations with Duolingo and identified areas for improvement, many indicated that they had not considered switching to other LL app. This reluctance to change suggests that Duolingo's brand loyalty, convenience, or familiarity may outweigh users' dissatisfaction, highlighting a barrier that competitors must overcome to attract these consumers more effectively. Thus, brands need to build effective sustained competitive advantages and differentiate themselves while creating incentives for usage.

8.1.2. Market gap opportunities – Trade-off between Enjoyment and Effectiveness

The analysis suggests a current trade-off between making the learning experience enjoyable and ensuring it remains effective. For instance, Duolingo, the current market leader, holds a competitive advantage over competitors, by being perceived as the app with the most enjoyable learning experience, while still being the least frustrating. Nevertheless, insights from the perceptual maps study revealed that consumers do not view the app as the most effective and useful in learning a language, presenting a trade-off in customer's minds of being *Enjoyable* versus *Effective*. As the market leader, Duolingo has the resources to address these issues, enhancing its capabilities and solidifying its image and recognition among Portuguese consumers, to prevent staying behind the

competition. Additionally, Babbel, Buddy.ai, and Falou also fail to secure a position in consumers' minds that reflect the enjoyment and usefulness of the product at the same time. For instance, Babbel, contrary to Duolingo, is perceived as a more structured and rigid learning approach at the cost of being enjoyed by consumers, as it is perceived with a higher level of frustration and stress. Hence, there is an opening in the market for brands to deliver a structured and effective learning experience in a low-stress and enjoyable environment, attracting users who value effectiveness but also don't want to feel pressured. This gap is illustrated in the bottom-right quadrant of the perceptual maps (Image 2), which none of the four brands in the study currently occupy, presenting a potential space for brand repositioning or for new entrants to capture.

8.1.3. Lack of sustained competitive advantages in consumer's minds

Analyzing consumers' perceptions revealed that some of the brands included in this research do not hold a differentiated and superior position in consumer's minds. For instance, Babbel does not stand out from other platforms and lacks a sustained competitive advantage. Survey insights revealed that competitors tend to have stronger consumer perceptions than Babbel, on either side of the spectrums, whether by having more positive emotional respondents or by having higher practical usefulness. On the other hand, Falou distinguishes itself from Babbel with a more entertaining and engaging user experience while remaining less frustrating. However, in these aspects, it still ranks behind Duolingo, indicating that there is a current inability to lead in any specific area. Despite Falou offering more useful features than some of its competitors, it has struggled to secure a leading position, indicating a lack of a distinct competitive advantage compared to the other four apps in the study. This limitation could undermine its future success if strategic adjustments are not implemented. Overall, this underscores the challenge brands face in maintaining competitiveness within this market, emphasizing the need to focus on a strategic pillar where they can outperform rival brands.

8.1.4. Misalignment between brand offerings and consumers' perceptions

A misalignment between a brand's strategy and what consumers perceive can be found as a result of this research, complemented by the lack of competitive advantages faced by some of the LL apps under study. This argument is illustrated by Falou's strategy, which integrates cultural insights from the target language's native culture. However, when analyzing consumer's perceptions, Falou scores relatively low on the association related to cultural enrichment. This suggests that the brand's intended strategy is not resonating strongly with users. Thus, negatively impacting a potential advantage that the brand could attain against the competition. Furthermore, this argument is also supported by Babbel, as it emphasizes a rigorous, in-depth language learning approach without relying so heavily on gamification features. Given this approach, one would expect Babbel to rank highest in terms of perceived helpfulness, as its strategy is specifically designed to prioritize effective language acquisition. Nevertheless, as the brand ranks third in this regard, falling behind Buddy.ai and Falou, a misalignment between strategy and perception is reflected yet again. As brand positioning aims to reflect consumers' perceptions, brands must ensure their strategy is both understood and aligned with consumer beliefs. If not, the strategy risks failing to achieve its objectives and may also limit the brand's potential to achieve long-term profitability.

8.1.5. Niche target market opportunities

By studying consumer perceptions, the analysis reveals that catering to a niche audience can sharpen brands' focus on specific consumer preferences, resulting in stronger and more favorable brand perceptions. Buddy.ai, although proven to be value-reductive in regard to its bundle of features, also emerges as the leading app when it comes to perceived usefulness and effectiveness whilst the least tedious. This apparent contradiction is explained by the differing respondent groups: while the conjoint analysis reflects a broader public's perception of the current bundle as suboptimal, those who actually use the app perceive it as highly effective and well-suited to their

needs. This distinction highlights that the results are not in conflict but rather showcase the importance of understanding different audience segments. Furthermore, the findings reinforce that this does not limit the pursuit of a niche market with a more tailored bundle of features. Buddy.ai's targeted focus on children aged 4 to 10 allows it to increase quality, designing impactful content to provide tangible learning outcomes. This not only allows Buddy.ai to be perceived as being more effective but also enables the brand to have a competitive advantage, while occupying a distinctive position in consumers' minds.

8.1.6. Understanding Market Structure and Consumer Demand

The findings from the conjoint analysis allowed for a take on Portuguese consumers' monetary constraints and value perceptions. From the sample examined, although not applicable to all brands studied - as this attribute was not consistently included as a mutable variable - *Monthly Fee* emerged as the most important factor in customers' decision-making process, including high-income segments, when choosing a product from a brand. Its importance in product selection, and purchase, is evident in its contribution to decision-making, which ranges from 38.3% for Duolingo to 56.4% for Falou. Depending on the combination of other variable features offered by the app, the *Monthly Fee* can account for more than half of a customer's decision. This phenomenon implied that, for the brands that had the option to choose between a paid version or a free version, even if the non-paid version was obstructed by ads, the free option would still be preferred to the most similar paid one, exerting more utility for the consumers, as observable on the product concept rankings. Additionally, from all the possible product concepts presented to the respondents, the first paid option was ranked 17th, stressing the high preference of Portuguese consumers for free LL apps.

These results indicate that Portuguese consumers value cost-effective solutions for these types of products, and although possibly exerting financial flexibility, their perceptions are tied to value

over necessity. Such tendency suggests that LL apps may benefit from different scaled payment options, that allow them to pay as they keep using the app, rather than paying an upfront value for a set period of time, notwithstanding the potential flexibility for the former method.

Nevertheless, conjoint results show that there is still space for the paid versions of the apps, proving that certain feature combinations are more valuable for consumers overseeing monthly payments. The ranked list of concepts proves this same phenomenon given that the first paid concept was set at 17th place, and it was one possible bundle at the monthly fee of 8.99€, under the Duolingo brand name, appearing higher ranked than any other product, free or paid, of the other brands, only being preceded by Duolingo free products. Such findings appear to mimic real-world scenarios when compared to the findings of previous research. Kübler et al. (2018), also determined that Portuguese consumers are moderately price-sensitive in the app market, this is, while still scoring a negative price effect on app popularity, its results were not as prominent as in more sensible markets such as Italy or Malaysia. Nevertheless, Portugal's positioning still suggested the potential for app popularity derived from price adjustments including discounts or premium pricing.

Finally, the observed results strongly justify the adoption of the freemium model for most LL app brands, as it aligns with the Portuguese preference for free solutions that offer utility despite constraints in user experience, such as ads. The findings highlight that while these consumers are moderately price-sensitive, they prioritize value over necessity and are more likely to engage with the product when the upfront financial commitment is minimized. The freemium model caters to this demand while also creating opportunities for brands to strategically upsell their premium features to users who perceive sufficient added value. Such is done through an approach that ensures broader consumer acquisition through free tiers while maintaining profitability potential through targeted monetization of premium offerings.

8.2. Managerial Implications

8.2.1. Introduce Portuguese from Portugal as a language in LL apps

All consumers that participated in the preliminary interviews revealed significant dissatisfaction with the lack of Portuguese from Portugal in LL apps, hindering the learning process and increasing frustration, with some mentioning that this was the main reason for discontinuing the use of these platforms. Thus, highlighting a critical gap in language offerings, in which these platforms can work on to leverage a competitive advantage. The growing immigration in Portugal, where the number of foreigners more than doubled between 2017 and 2023, with projections indicating continued growth, presents a unique opportunity for brands to address the needs of an expanding demographic sector, seeking to learn European Portuguese for integration, career advancement, or personal enrichment (*Statista, 2024d*). Moreover, with Duolingo's downloads almost doubling from 2022 to 2023, and approximately 10% of the Portuguese population engaging with LL apps in 2023, demand for these tools remains robust (*Statista, 2024e*). Integrating European Portuguese into the LL application Portuguese market, not only as a language offered but also as the base translation, is imperative for improving the user experience and meeting the practical needs of a growing audience in this competitive and growing market.

8.2.2. Opportunity for Niche Targeting

As demonstrated by Buddy.ai's success in targeting niche audiences and by the conjoint analysis that highlighted that different age groups have different preferences, it was underscored the potential for brands to adopt a niche approach. While Buddy.ai focuses on a younger demographic, this opens an opportunity for brands to focus on older consumers. According to PORDATA (2024a), in Portugal, where approximately 31% of the population is over 60 years old, there is significant potential to develop tailored solutions for this demographic. Although “research in this area is very scarce, which is due to the lack of such apps for the elderly and consequently, due to

the lack of the experimental studies in this field", brands could exploit this market gap to achieve a competitive advantage (Klimova, 2020). According to Klimova (2020), there are significant advantages for older learners to enhance with these platforms since it develops their cognitive skills while becoming more confident with using modern technologies and reducing loneliness and feelings of depression. LL apps, for instance, could introduce tools and educational resources specifically designed for older learners, addressing their unique needs and preferences. Features such as slower-paced learning journeys, adaptable exercises, and interactive, accessible usage guides would make these platforms more user-friendly across older age groups.

8.2.3. Increasing Brand Awareness to combat market leader - Duolingo

Research findings confirm Duolingo's dominant position in the Portuguese LL app market, supported by its high download rates and frequent usage reported in surveys. However, as mentioned in the conclusions, dissatisfied users tend to persist with Duolingo or abandon LL apps altogether, often due to a lack of awareness about alternative options. For instance, access to tutors is highly valued, yet no participants had tried to explore other brands with this offering, reflecting a lack of awareness. To address this challenge, increasing brand awareness is crucial for competing brands to succeed in the LL app market. Brand awareness is a key factor that contributes to consumers including products and services in their consideration set during a purchase decision-making process (Zaif, 2016). Most players in the market already provide features that align with consumer needs, yet they are not known to the public. A key strategy for achieving this is to focus on building strong brand recall. This involves ensuring that when consumers think of LL applications, they automatically consider alternatives to Duolingo. As highlighted by Chi et al. (2009), "the higher the brand recall, the higher the purchase intention", making it a critical approach for LL brands to remain top-of-mind in consumer decisions. Moreover, increased brand awareness not only boosts purchase intentions but also fosters stronger brand loyalty over time (Chi et al.,

2009). To do so, increasing the intensity and frequency of marketing promotions across all channels will play an important role in increasing brand awareness, as repeated brand exposure generates higher interest in a brand, and consequently also increases more people recommending the brand (Zaif, 2016). Additionally, focusing on brand switchers and dissatisfied former Duolingo users presents a valuable opportunity for competing brands to make a greater impact and capture market share. By addressing the specific needs and frustrations of these groups, brands can position themselves as compelling alternatives and attract a higher customer base.

8.2.4. Implementation of Student Discount

The demographic composition of the surveys conducted during the research, predominantly consisted of students or working students (71.6% and 51.9% in the perceptual maps survey and conjoint survey, respectively), entailing a space in the market for the introduction of student subscription prices, this is, lower price rates for students that would have access to the same premium features. Although acknowledged that the tested samples might not mimic the broader Portuguese market, the undeniable potential in these segments is supported by the increasing number of students enrolling in higher education degrees, highlighting the Bachelor's level, which is complemented by the stable volume of students enrolled up to high school level (PORDATA, 2024c.).

Considering the findings of the conjoint analysis, there is a transversal significant importance attributed to the monthly fee for respondents that are of studying age and that still have not achieved higher levels of education - considering that higher education level completion comprises both people who terminated their academic journey, but mostly respondents at studying age completing their academic cycle-, underscoring the impact that a potential student discount could have. Moreover, students often face limited disposable income, making even modest price increases potentially unaffordable for this demographic which proves to be highly price-sensitive

(Pettinger, 2017).

Additionally, the proposed implementation reflects a strategic alignment with the educational goals and cultural mobility trends prevalent in the Portuguese market, attending to the high immigration rate of the country that seats 30% of young people between 15 and 39, who are mostly searching for better job opportunities and career growth (Almeida, 2024). As globalization intensifies the demand for multilingual competencies, students increasingly prioritize affordable and accessible tools to support their academic and professional development. LL apps, if priced inclusively, could effectively cater to this demand, positioning themselves as critical enablers of skill acquisition for this cohort.

Finally, offering discounted subscription prices falls under the price discrimination strategies that prove to foster brand loyalty (Kim, 2019), encouraging continued subscription after graduation. Its success can be tracked by the achievements of other brands such as Spotify that already have implemented such a strategy.

8.2.5. Introduction of Prepaid Intensive Courses

Although many brands currently offer users the ability to tailor their studies according to specific learning objectives, along with the option to select the amount of time dedicated to lessons, reflected in customizable learning goals, this customization could be further refined to capture a broader audience, potentially by the introduction of prepaid intensive language courses.

As entailed by the willingness-to-pay analysis of the apps under study, the average Portuguese consumer demonstrates price sensitivity, prioritizing perceived value over necessity. However, it was also evident that there exists a certain degree of flexibility among consumers who prefer to make an upfront payment rather than commit to recurring monthly subscriptions.

This concept can be further explored through the lens of the Expectation-Confirmation model, discussed in the literature review. Prepaid, intensive language courses (e.g., a two-week 'French

for Traveling' course) would allow consumers to set clear expectations regarding both the content and the outcomes. This transparency is in alignment with the desire for predictable value, which is particularly relevant for price-sensitive consumers, who by being provided with a defined offering, are more likely to commit to an upfront payment, thus reducing reluctance toward such payment models. The goal-oriented structure of these courses would further enhance consumer satisfaction, as learners can confidently align their expectations with tangible learning outcomes. This approach would appeal to those seeking targeted language skills for specific purposes, rather than a comprehensive language acquisition, thereby addressing the needs of flexible consumers who prioritize short-term, outcome-focused learning experiences.

8.3. Limitations and Implications for Future Research

Throughout the course of this research, several limitations were identified that should be addressed and refined in future studies. Thus, this section will focus on acknowledging them, evaluating their implications, and outlining strategies to mitigate them in subsequent investigations.

Beginning with limitations identified in the literature review, the scarcity of region-specific studies poses a limitation, since research on LL apps is often conducted on a global or U.S. centric scale, with limited studies focusing on the Portuguese market. This geographical bias means that findings may not fully represent the unique cultural and educational preferences of Portuguese users, and as a result, conclusions drawn from global studies may require adaptation to be locally relevant. For future reference, it is relevant to notice that this study can be used as a benchmark to further develop future research based on the Portuguese market and gain a deeper understanding of local consumption patterns.

Furthermore, the literature review required consulting non-academic sources, such as official brand websites, to gather details about LL app features, due to limited academic research on these aspects. This reliance introduces potential bias, as such sources may present selectively positive content,

potentially affecting objectivity. To mitigate this, data was cross-referenced across multiple sources to ensure validity. Future research could incorporate user-generated reviews to enrich the analysis and build on the existing methodology for greater robustness.

The selection process of the four most downloaded LL apps limited the scope of this research, excluding other apps that survey respondents may have used or had significant experiences with, such as Busuu and Memrise (Statista, 2024b). As a result, there was a potential loss or limitation of a broader and more diverse set of user experiences with other applications, meaning that the findings reflect only a portion of users' app-related perceptions, potentially overlooking the diversity of apps Portuguese users engage with. For future reference, the introduction of more apps in the study is pivotal for a better understanding of the LL apps market. By examining diverse apps with different features, target audiences and didactic methods, market trends would be revealed, while also addressing users' needs and distinct strategies.

Regarding the preliminary interviews, several limitations were identified. While the consumer group included a broad and diverse audience across various age ranges and levels of experience with language learning apps, the expert group was more limited. The experts consulted were primarily around 50 years old, which may have restricted the range of insights by excluding perspectives from younger professionals more aligned to emerging trends, technological advancements, and evolving user preferences. This limitation could have influenced the relevance and breadth of the feedback obtained. Future research should aim to engage a more demographically diverse group of experts, particularly with greater age diversity, to capture a wider range of perspectives that reflect both established expertise and emerging innovations, thereby enhancing the study's depth and applicability.

Furthermore, only having insights from experts that were indirectly related to the LL apps industry – not directly working at an LL app – limited this research. Despite contacting many experts from

various LL applications, none expressed interest in taking part in the study. Although a Unilateral Non-Discloser Agreement was presented, professionals noted the necessity to protect confidential information and the involvement of the legal and compliance team, thus not being able to collaborate with the study. While the interviewees' expertise in teaching languages and pedagogy provided important insights into effective learning methods, while also comparing traditional methods with LL applications, they may lack firsthand knowledge of the specific challenges, innovations, and market demands currently driving the industry. Future studies should incorporate different professionals, including an expert working directly with LL platforms. These professionals offer essential insights into the strategic, technical, and user-engagement elements that contribute to the success of apps. As so, research could achieve greater completeness by incorporating the connection of pedagogy and technology with all experts' perspectives.

As for perceptual maps, by only selecting twelve psychological associations, this study has left out a plethora of other associations that Portuguese consumers might create towards LL applications. Thus, while this does not undermine the validity of this study, it highlights the possibility for future studies to explore alternative combinations of associations to capture different consumer perceptions. Furthermore, future branding, marketing tactics, or even external influences may have an impact on customers' perceptions, resulting in perceptual maps that differ from the ones analyzed in this study.

A significant limitation in the perceptual maps survey was the lack of clarity by participants regarding the ranking of the four brands. Even though the "Not applicable" option was only meant for users who had never used the app in question, some participants chose it for brands they had answered to have used, thus, misinterpreting the guidelines. As a result, the map was then not able to fully catch the perceptions of all its users, potentially skewing the results. To guarantee accurate replies for future research, it is imperative to improve survey design, by providing clearer

guidelines.

Conducting both the perceptual and conjoint surveys in English, despite the target market being Portuguese consumers, presents an additional limitation. While using English proved helpful in gaining direct feedback from the thesis advisor, as well as being consistent with the language of this research, it may have created a language barrier, thus compromising the accuracy of the results. There is a possibility that some participants did not fully comprehend the associations presented, thus potentially distorting the findings. To guarantee that participants completely comprehend the questions and topics being assessed, surveys must be conducted in the target market's native tongue in future studies. Sharing the perceptual map survey primarily through personal and professional networks, resulted in a sample skewed toward younger individuals. This implies that the results of this survey, and consequently the perceptual maps, may primarily reflect perceptions of a younger generation, thus not fully providing an accurate depiction of the Portuguese market. To guarantee the validity of the sample for upcoming studies, it is crucial to ensure that the survey is being shared equitably across different age groups. In addition, further research on the perceptions of Portuguese individuals above the age of 31 on LL apps, will also contribute to developing a comprehensive depiction of the overall market. Hence, there is a similar lack of representativity of older generations in the sample, thus requiring future studies to fill this gap, for a deeper understanding of the Portuguese consumers' preferences in LL apps.

As for limitations of the conjoint analysis, similar to the associations identified in the perceptual maps, the selection of attributes included in the survey inherently excludes other potential combinations and data related to LL applications. However, the attributes were chosen based on both primary and secondary research, in line with the principles of conjoint analysis. This approach maximizes relevant input without overloading participants, ensuring that the study's validity is not compromised. Nevertheless, it implies that future studies on LL applications might benefit from

investigating different attribute combinations, which could result in distinct consumer-optimal bundles.

The conjoint survey's complexity proved to be an additional limitation of this study. Despite following Conjointly's recommended number of attributes, this survey was notably more intricate as it required participants to review an increased quantity of information. Furthermore, the platform performed more efficiently on desktops than on mobile devices, as the need to scroll back and forth to read and compare all the information deterred participants from finishing the survey. Thus, the leading cause for a lower number of answers is being lower than the benchmark provided by the platform. Consequently, the lower response rate affects the representativeness of the sample and, consequently, the validity of this research on the preferences of Portuguese consumers. In addition, it is also important to note that the relatively short time frame available for this research may arise as a limitation; by having a reduced the duration of both surveys, it could have further hindered the response rate. Future research should focus on designing a survey format that reduces complexity for participants. Given that accessibility constraints on the current Conjointly platform cannot be overcome, researchers might consider alternative platforms that offer optimized usability on both desktop and mobile devices. Integrating visual cues, such as symbols or icons to represent attribute levels, may also help streamline information processing and enhance survey completion rates. Additionally, allocating an extended period to conduct both studies could help ensure higher response rates in future research.

Consumer biases should also be acknowledged as an additional limitation of this research. Given the brands' recognition and existing image in consumers' minds, participants may provide responses that do not fully reflect their genuine preferences and perceptions, potentially skewing the results. Additionally, these biases are hard to measure or confirm, as they are based on each participant's personal experience and feelings towards each brand. To address this, future research

could conduct a secondary analysis that excludes brands with strong recognition or pre-existing biases. This approach would allow respondents to evaluate only brands they have no prior preference for, offering clearer insights into new relationships and unbiased perceptions.

Lastly, a limitation of this study is the use of two distinct samples for the conjoint and perceptual map analyses, which prevents direct comparison of findings and reduces overall coherence. Differences in demographic characteristics between the samples may lead to inconsistencies and restricting the elaboration of more transversal findings. Future research could address this by employing a panel study approach, using the same respondent group for both analyses to ensure greater comparability and consistency.

8.4. Final Considerations

This research highlights the significance of contextual and user-specific aspects for the development and evaluation of LL applications in the Portuguese Market. The findings effectively captured an aspect of the Portuguese market's preferences and provided an essential foundation for future research to expand upon. By incorporating more diverse participant demographics, developing research tools, and engaging with industry professionals more directly, subsequent investigations can offer complex insights that bridge the gap between education and technology. This approach will not only elevate academic understanding but also guide app developers in creating tailored solutions that resonate with Portuguese users' cultural and educational needs.

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10. Appendix

Table 1: Interview Script - Past and Current consumers

Demographic Questions	Age
	Gender
Basic Knowledge	Are you a current user of any LL app? If so which one? If not, have you used them before? Which one? And why did you stop?
	What was the reason behind why you downloaded the app? (e.g., traveling, for fun, for business, to communicate with foreign family/friends, etc.)
	Have you tried any other apps besides the one you currently use/last used in the past? Why did you switch?
	[For current users] Have there been periods where you stopped using the apps but came back to it? If so, why?
Experience	How often do you currently use the app, and for how long each session? ● Or how often did you use the app, how long were each session before you stopped [ask whichever applicable]
	What features do you find most useful? What are the features you like the most? Why?
	What features or functionalities could be improved to make your learning experience better? Any features you disliked in particular, any frustrations with the app?
	[Ask if applicable] Were there any specific features/functionalities that made you quit the app? What changes or improvements could have made you continue using the app?
Effectiveness	In your opinion, how effective has the app been in helping you learn the language? ● Can you give examples of specific skills (e.g., speaking, listening, grammar) where the app has helped you improve?
	Have you used any other methods (e.g., traditional classes, books) to learn the language? How does the effectiveness of this app compare to those more traditional methods?
	Do you feel confident using the language in real-life situations after using the app? Why or why not?
	[Only if applies/not answered prior] Once you stopped using the apps, did you switch to more traditional learning methods? If so, why? How did it compare in terms of effectiveness with the apps?
Perceptions "psychological associations"	What emotions do you associate with using the app? (e.g., excitement, frustration, anxiety) And why?
	Did gamification features (points, streaks) feel motivating/exciting or pressuring? If you had to rate the app that you used in this context, which one has the gamification features that are more pressuring or more motivating/exciting?
	If you had to compare the apps to traditional learning methods like books and classes, which one would you associate with being rigorous? What about playful? What about feelings of relaxation and stress?
	[for those who had experience with multiple apps], which one you associate more with a rigorous type of learning and the opposite with a more playful? What about feelings of relaxation and stress?
Paid Features	Do/did you use any premium/paid features of these apps? ● If so, do you believe that it significantly improved the effectiveness of your learning? In any way did it affect your motivation to keep practicing consistently? From your experience how worth it are these features? If not, how effective do you believe these paid features can be?

	How much are you willing to pay a month for premium content and features, and what type of functionalities would you expect for that price?
	Do you associate paid features with a more rigorous and effective way of learning?

Table 2: Interview Script – Experts

Demographics	**Age**
	Gender
Basic Knowledge	How many years of experience do you have in the field of the language learning landscape? In what capacity [ask about their job]?
	Are you aware of what LL apps are?
	Have you ever used any LL app? If so, how was your learning experience and how does it compare to other more traditional methods? If not, why not?
Effective Techniques	Based on your experience in the field, what do you believe are the most effective methods for learning languages? Can you describe specific activities/features that have proven to be particularly successful?
Traditional Learning vs Apps	How do you think the effectiveness of LL apps compares to that of traditional classroom-based learning? Are there areas where one method significantly outperforms the other?
	In what ways do apps fall short in delivering the same level of language proficiency that traditional methods can offer?
	What psychological mindset do you think influences consumers when selecting and using LL apps? (e.g., more relaxed, less rigorous, playful, ...)
	Are there specific traditional teaching methods that you think could be effectively integrated into LL apps to improve their effectiveness? For example, how could an app better replicate the interactive, conversational aspects of a classroom setting?
Engagement and Motivation	How do traditional methods keep students engaged and motivated over the long term? How does this compare with the engagement strategies used by apps?

Table 3: Current Consumers' Profiles

Profile	Current Consumers 1	Current Consumers 2	Current Consumers 3	Current Consumers 4
Age	23	23	24	22
Gender	Male	Male	Male	Female
Apps Used	Duolingo	Duolingo	Duolingo & Babbel	Duolingo
Languages Learned	French	Spanish	Arabic	German
Subscription Plan	Premium	Free	Premium	Free

Table 4: Past Consumers' Profiles

Profile	Past Consumers 1	Past Consumers 2	Past Consumers 3
Age	22	61	22
Gender	Female	Female	Male
Apps Used	Duolingo	Duolingo & Busuu	Duolingo
Languages Learned	French	English	Dutch & Japanese
Subscription Plan	Free	Free & Premium	Free

Table 5: Experts Interviewees' Profiles

Profile	Expert 1	Expert 2	Expert 3
Age	58	52	50
Gender	Female	Female	Male
Job Tittle	Language Teacher	Language Teacher	Pedagogic Director
Company	SpeakWell	Cambridge	SpeakWell

Table 6: Survey Design – Perceptual Maps

Consent	Do you consent to take part in this survey?	Yes | No
Introductory Questions	l Have you used any Language Learning apps?	Yes, I currently use them Yes, I have used them in the past but not anymore No, I have never used them
	Which Language Learning Apps have you used/currently use?	Duolingo | Babbel | Busuu | Memrise | EWA | Mondly | Buddy.ai | Falou | Languager | Mommo
Psychological Associations*	*On a scale from 1 to 5, how would you rate each app as **Playful**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Stressful**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Frustrating**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Monotonous**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable

	On a scale from 1 to 5, how would you rate each app as **Helpful**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Enjoyable**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Empowering**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Culturally Enriching**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Community-oriented**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Supportive**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how would you rate each app as **Motivating through gaming features or challenges**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	What is your age group?	≤18 years old | From 19 to 30 years old | From 31 to 45 years old | From 46 to 60 years old | > 60 years old
Demographic Questions	What is the gender you identify with?	Feminine | Masculine | Noon-binary | None of the options | Prefer not to say
	What is your nationality?	Portuguese | Spanish | German | French | Italian | Other (please specify which one)
	What is your highest level of education?	High School | Bachelor's | Master's | PhD | Other (please specify which one)
	What is your current occupation/employment status?	Student | Working student | Employed | Unemployed | Retired | Other (please specify which one)
	What is your household income?	< 20,000€ per year | 20,000€ - 40,000€ per year | 40,001€ - 60,000€ per year | 60,001€ - 1000,000€ per year | > 100,000€ per year

Table 7: Perceptual Maps Survey Sample Characteristic – Age

Age Group	Frequency	Percent	Cumulative Percentage
≤ 18 years	17	14.7%	15.0%
19 to 30 years	89	76.7%	91.0%
31 to 45 years	3	2.6%	94.0%
46 to 60 years	6	5.2%	99.0%
> 60 years	1	0.9%	100.0%
Total	116	100.0%	

Table 8: Perceptual Maps Survey Sample Characteristic – Gender

Gender	Frequency	Percent	Cumulative Percentage
Male	53	45.7%	46.0%
Female	60	51.7%	98.0%
Non-Binary	1	0.9%	99.0%
Prefer not say	2	1.7%	100.0%
Total	116	100.0%	

Table 9: Perceptual Maps Survey Sample Characteristic – Education Level

Level of Education	Frequency	Percent	Cumulative Percentage
High School	30	25.9%	26.0%
Specialization	1	0.9%	27.0%
Bachelor´s	59	50.9%	78.0%
Masters	26	22.4%	100.0%
Total	116	100.0%	

Table 10: Perceptual Maps Survey Sample Characteristic – Current Occupation

Level of Education	Frequency	Percent	Cumulative Percentage
Student	59	50.9%	51.0%
Working Student	24	20.7%	72.0%
Employed	28	24.1%	96.0%
Unemployed	4	3.4%	99.0%
Other	1	0.9%	100.0%
Total	116	100.0%	

Table 11: Perceptual Maps Survey Sample Characteristic – Household Income

Household Income	Frequency	Percent	Cumulative Percentage
< 20,000€ per year	34	29.3%	29.0%
20,000€ - 40,000€ per year	38	32.8%	62.0%
40,001€ - 60,000€ per year	25	21.6%	84.0%
60,001€ - 100,000€ per year	9	7.8%	91.0%
> 100,000€ per year	10	8.6%	100.0%
Total	116	100.0%	

Table 12: MARLI's Languages

Languages			
Portuguese (European and Brazilian)	Italian	Swedish	Greek
English	Japanese	Danish	Arabic
French	Mandarin	Norwegian	Hebrew
Spanish	Korean	Polish	Hindi
German	Russian	Irish	Swahili

Table 13: Assumptions to create MARLI's Price (Source: Babbel, 2024)

Babbel's Pricing	Values
Private unlimited classes per month available 7 days/week	149,00€
1 private unlimited class per day each month [2]	4,97€
Price for group unlimited classes per month available 7 days/week	99,00€
1 group unlimited classes per day each month [3]	3,30€
Total price per month of 2 classes (1 individual + 1 private)	**8,27€**

[2] Assuming that every day of the month there is at least 1 private class in 1 language
[3] Assuming that every day of the month there is at least 1 group class in 1 language

Table 14: MARLI Prices

Bundles	MARLI	Duolingo	Babbel	Buddy.ai	Falou
Monthly Price	12.99€/month	8.99€/month	N/A	14.99€/month	19.99€/month
Trimestral Loyalty Price	10.99€/month	N/A	16€/month	N/A	N/A
Semestral Loyalty Price	8.99€/month	N/A	12.50€/month	5.83€/month	N/A
Yearly Loyalty Price	6.99€/month	4.67€/month	8€/month	N/A	5€/month

Table 15: New APP Survey Design Bonus

Consent	Do you consent to take part in this survey?	Yes | No
Ranking of attributes	On a scale from 1 to 5, how much do you value **Customizable learning Goals**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree | NA – Not Applicable
	On a scale from 1 to 5, how much do you value **High Gamification**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree
	On a scale from 1 to 5, how much do you value **access to tutors**?	1 – Strongly Disagree | 2 – Disagree | 3 – Neutral | 4 – Agree | 5 – Strongly Agree
	On a scale from 1 to 5, how much are you **willing to pay the monthly fee of 12.99€**?	1 –Not very likely | 2 –Not Likely | 3 – Neutral | 4 – Likely | 5 – Very Likely
	Would you value the possibility to pay to have a **formal language certificate?**	0 – Not Valuable | 1 – Valuable
	Would you download & purchase MARLI?	Yes | No
Demographic Questions	What is your age group?	≤ 18 years old | From 19 to 30 years old | From 31 to 45 years old | From 46 to 60 years old | > 60 years old
	What is the gender you identify with?	Feminine | Masculine | Noon-binary | None of the options | Prefer not to say
	What is your nationality?	Portuguese | Spanish | German | French | Italian | Other (please specify which one)
	What is your highest level of education?	High School | Bachelor's | Master's | PhD | Other (please specify which one)
	What is your household income?	< 20,000€ per year | 20,000€ - 40,000€ per year | 40,001€ - 60,000€ per year | 60,001€ - 1000,000€ per year | > 100,000€ per year
	What is your current occupation/employment status?	Student | Working student | Employed | Unemployed | Retired | Other (please specify which one)
	Do you have any disabilities?	Yes | No (in affirmative case, please specify which one)

Figure 1: Python code to transform responses from the New App Perception Survey in dummy variables

```
In [ ]: import pandas as pd

data = pd.read_csv('New_App_Perception_Survey.csv')
data_portuguese = data[data['What is your nationality?'] == 'Portuguese']

dummies = pd.get_dummies(data_portuguese)

output_path = 'C:/Users/Utilizador/Desktop/Dummies.xlsx'
dummies.to_excel(output_path, index=False)
output_path
```

Table 16: New App Perception Survey Sample Characteristic – Age

Age	Frequency	%
< 18	5	2.4%
18 - 30	136	66.2%
31 - 45	32	15.5%
46 - 60	22	10.6%
> 60	11	5.3%
Total	205	100.0%

Table 17: New App Perception Survey Sample Characteristic – Gender

Gender	Frequency	%
Male	100	48.8%
Female	102	49.8%
Non-binary	2	1.0%
None of the options	1	0.5%
Prefer not to say	0	0.0%
Total	205	100.0%

Table 18: New App Perception Survey Sample Characteristic – Education Level

Education Level	Frequency	%
Middle school	6	2.9%
High school	36	17.4%
Bachelor's degree	79	38.6%
Master's degree	77	37.7%
PhD	7	3.4%
Other	0	0.0%
Total	205	100.0%

Table 19: New App Perception Survey Sample Characteristic – Employment status

Employment status	Frequency	%
Student	39	18.8%
Working student	47	22.7%
Employed	101	49.3%
Unemployed	9	4.3%
Retired	10	4.8%
Total	205	100.0%

Table 20: New App Perception Survey Sample Characteristic – Household Income

Household income (per year)	Frequency	%
< 20,000 €	56	27.5%
20,000 € - 40,000 €	58	28.5%
40,001 € - 60,000 €	58	28.5%
60,001 € - 100,000 €	23	11.1%
> 100,000 €	9	4.3%
Total	205	100.0%

Table 21: New App Perception Survey Results – Attribute Preference

	1- Low Value Attributed ; 5-High Value Attributed					
Features	**1**	**2**	**3**	**4**	**5**	**Total**
Tutor Value	23	24	24	74	60	205
Gamification level	40	44	36	43	42	205
Customizable learning goals	9	5	5	95	91	205
Montly fee	22	23	29	71	60	205

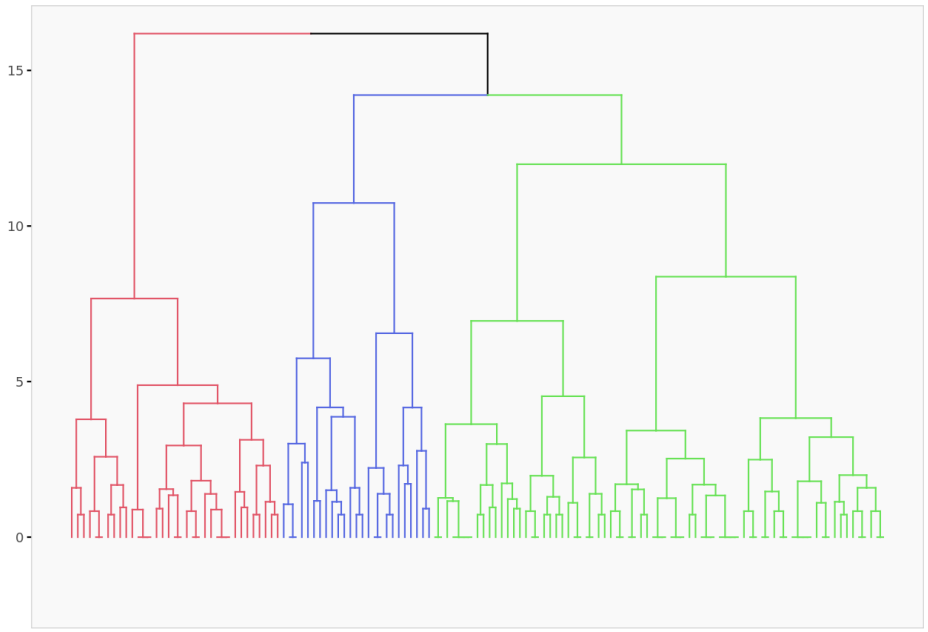
Table 22: New App Perception Survey Results – Certification Preference

	Value Attributed		
Features	**No**	**Yes**	**Total**
Certification	57	148	205

Table 23: Segmentation – Statistics

Mean and standard deviation column wise		
	Mean	Standard deviation
Tutor_value	3,956	1,092
Gamification_level	3,081	1,382
Certificates	0,7037	0,4583
Customizable_learning_goals	4,5185	0,5015
Monthly_fee	3,978	1,047

Graph 1: Segmentation –Dendrogram



Graph 2: Segmentation –Scree Plot

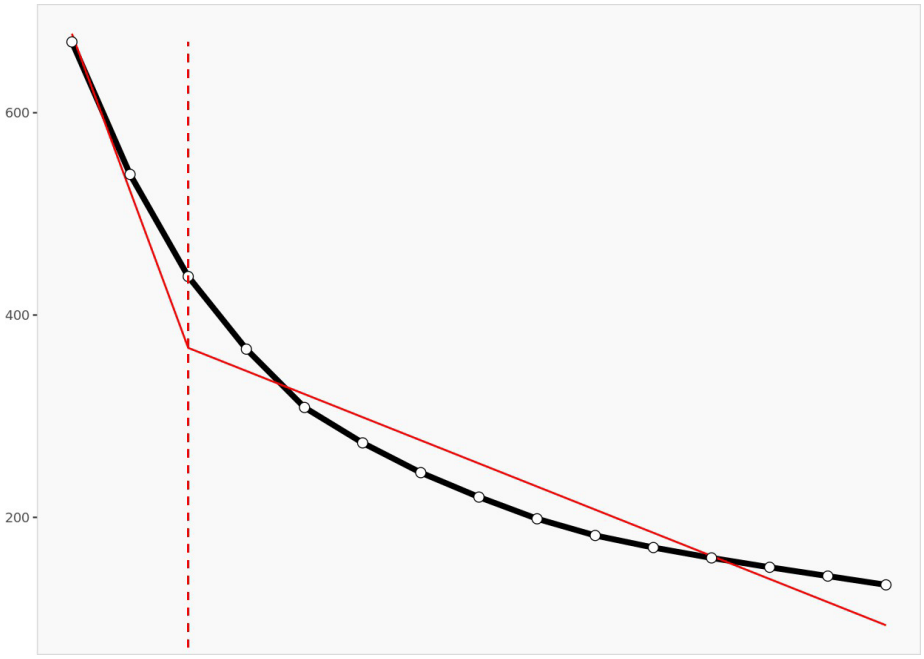
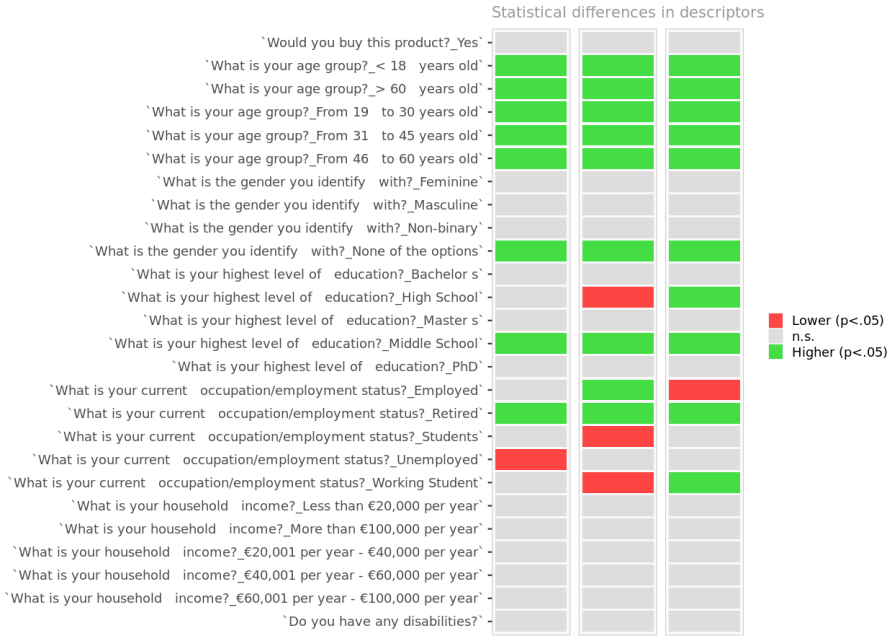


Figure 2: Statistical Differences in the Profiles of the Three Segments

Note. Segment differences per segment. Cell colors indicate to what extent a segment is statistically different from the rest of the population on each segmentation variable.

Figure 3: Statistical Differences in the Descriptors of the Three Segments



Note. Descriptor differences per segment. Cell colors indicate to what extent the distribution of a descriptor in a segment is statistically different from the rest of the population.

Table 24: Rossiter - Percy grid for MARLI

	Informational (negative motivators)	**Transformational (positive motivators)**
Low Involvement	Low risk, relief purchases	Low risk, reward purchases
High Involvement	High risk, relief purchases - MARLI	High risk, reward purchases

Table 25: Campaign Timeline

Campaign Launch	Timeline - May 2026				June & July 2026
	Week 1	Week 2	Week 3	Week 4	
1st Stage					
CGI Teaser - Social Media					
Out-of-Home Teaser					
2nd Stage					
CGI Marli Takes Over - social media					
Out-of-home MTO					
3rd Stage					
CGI Meet MARLI - Social Media					
Out-of-home Meet Marli					
MARLI Train Tickets					
Community Engagement Events					
Digital Advertising					

Table 26: Campaign Budget

Campaign Launch	Cost in Euros	%
CGI Videos	350 000	17.5%
Organic Social Media	80 000	4.0%
Paid Social Media	200 000	10.0%
Influencer Marketing	120 000	6.0%
Digital Advertising	300 000	15.0%
Out-of-home	500 000	25.0%
Community Engagement Events	300 000	15.0%
Train Tickets in partnership with CP	150 000	7.5%
Total	**2 000 000**	**100.00%**

Table 27: Campaign's Metrics

Metrics	
Brand Awareness Metrics	Acquisition of new customers, analyzing the increase of downloads Retention rate Reach and impressions to analyze website and social media traffic Brand recall surveys allow for a direct assessment of whether this goal was achieved
Brand Attitude Metrics	Qualitative and quantitative surveys to evaluate current attitudes post-campaign
Post-Purchase Metrics	Repeat purchases and trial purchases, particularly for non-clients NCU's, OBL's, and OBS's Net Promoter Score and online reviews to evaluate consumer recommendations post- purchase and customer satisfaction
Brand Communication Metrics	Click Through Rate (CTR), Average Engagement Rate (AER), and conversion rates to analyze campaign's impact on social media